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RCRA FACILITY INVESTIGATION REPORT
SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA

VOLUME IV – APPENDICES B THROUGH D

APPENDIX D

SOIL BACKGROUND REPORT ADDENDUM

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LIST OF ACRONYMS

AMEC	AMEC Earth and Environmental
AOC	area of concern
bgs	below ground surface
Boeing	The Boeing Company
COPC	chemical of potential concern
CPEC	chemical of potential ecological concern
dioxins/furans	(a) - *see table below*
DOE	U.S. Department of Energy
DTSC	Department of Toxic Substances Control
GPS	global positioning satellite
MBAS	methylene blue active substances
MDL	method detection limit
MSDS	Material Safety Data Sheet
MWH	MWH Americas, Inc.
NASA	National Aeronautics and Space Administration
Ogden	Ogden Environmental and Energy Services Co., Inc.
PAH	Polyaromatic Hydrocarbon
ppt	parts per trillion
QA/QC	quality assurance/ quality control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SRAM	Standardized Risk Assessment Methodology
SSFL	Santa Susana Field Laboratory
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TEQ	Total Equivalency Quotient
TIC	tentatively identified compound
UCL	upper confidence limit
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USGS	United States Geological Survey
WPA	Work Plan Addendum
WPAA	Work Plan Addendum Amendment

LIST OF ACRONYMS (Continued)

(a) Definition of dioxin/furan congeners

PCDD/PCDFs	Polychlorinated dibenzo-p-dioxins/dibenzofurans
2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
1,2,3,7,8-PeCDD	1,2,3,7,8-pentachlorodibenzo-p-dioxin
1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin
1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin
1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin
1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin
OCDD	1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin
2,3,7,8-TCDF	2,3,7,8-tetrachlorodibenzofuran
1,2,3,7,8-PeCDF	1,2,3,7,8-pentachlorodibenzofuran
2,3,4,7,8-PeCDF	2,3,4,7,8-pentachlorodibenzofuran
1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-hexachlorodibenzofuran
1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-hexachlorodibenzofuran
2,3,4,6,7,8-HxCDF	2,3,4,6,7,8-hexachlorodibenzofuran
1,2,3,7,8,9-HxCDF	1,2,3,7,8,9-hexachlorodibenzofuran
1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-heptachlorodibenzofuran
1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8,9-heptachlorodibenzofuran
OCDF	1,2,3,4,6,7,8,9-octachlorodibenzofuran

EXECUTIVE SUMMARY

Fires are known to result in increased soil levels of heavy metals, dioxins, and other chemicals as referenced in this report (USEPA 2000, Nestrick et al. 1983, Sheffield 1985, Clement and Tashiro et al. 1991, Aronsson and Ekelund, 2004). Accordingly, documenting the changed conditions at the Santa Susana Field Laboratory (SSFL) background soil locations following the 2005 Topanga Fire is needed to make appropriate RCRA Program decisions during the characterization, risk assessment, and cleanup phases of the project.

The purpose of the Post-Topanga Fire Background Investigation was to provide data to support qualitative evaluations of changes in background concentrations of metals, dioxins, and other chemicals following the Topanga Fire. This report presents of the findings of this investigation, and outlines the use of these data in decision making for the RCRA Program at the SSFL.

In this investigation, soil and ash samples have been collected to assess the impact of the 2005 Topanga Fire on ambient soil conditions at the SSFL and in surrounding areas. Six agency-approved background sample locations were sampled soon after the fire and analyzed for fire-related chemicals. These results are termed in this report the Post-Topanga Fire Soil and Ash Background Data Set. Soil at each of the background sample locations was previously sampled before the Topanga Fire for metals and dioxin/furan (dioxins), and those results were approved by the Department of Toxic Substances Control (DTSC) to represent ambient conditions at the SSFL (Approved Soil Background Data Set) (MWH 2005a). Soil and ash samples from undeveloped, ambient locations within other Fall 2005 burn areas were also collected and analyzed for fire-related chemicals to provide regional post-fire data for reference and comparison purposes (Post-Fire Reference Soil and Ash Data Set).

This Soil Background Report Addendum presents the results of post-Topanga Fire soil and ash sampling and compares these results with the Approved Soil Background Data Set and the Post-Fire Reference Soil and Ash Data Set. The following describes the findings of this sampling program:

- Concentrations of several fire-related chemicals in soil and ash in the Post-Topanga Fire Soil and Ash Background Data Set were greater than their colocated soil samples in the Approved Soil Background Data Set.

- Some chemicals are higher in post-fire soil samples than in background soil:

  a. Two metals had higher maximum soil concentrations in the Post-Topanga Fire Soil and Ash Background Data Set than in the Approved Soil Background Data Set.

  b. Ten dioxin congeners had higher maximum soil concentrations in the Post-Topanga Soil and Ash Background Data Set than in the Approved Soil Background Data Set.

  c. Several PAHs had higher maximum soil concentrations in the Post-Topanga Soil and Ash Background Data Set than in the previously detected concentrations of these chemicals in pre-Topanga Fire samples collected at the Approved Soil Background locations.

- Some chemicals are higher in post-fire ash samples than in background soil:

  a. Ten metals had higher maximum ash concentrations in the Post-Topanga Fire Soil and Ash Background Data Set than in the Approved Soil Background Data Set.

  b. Fifteen dioxins had higher maximum ash concentrations in the Post-Topanga Fire Background Data Set than in the Approved Soil Background Data Set. The Post-Topanga Fire maximum results were less than twice as high as the approved values.

  c. Several PAHs had higher maximum ash concentrations in the Post-Topanga Soil and Ash Background Data Set than in the previously detected concentrations of these chemicals in pre-Topanga Fire samples collected at the Approved Soil Background locations.

- Post-fire concentrations of metals and dioxins are not limited to the SSFL area:

  a. Concentrations of metals and dioxins in the Post-Topanga Soil and Ash Background Data Set are similar to concentrations of metals and dioxins in the Post-Fire Reference Soil and Ash Data Set.

  b. The Post-Fire Reference Soil and Ash Data Set, consisting of soil and ash from other burned areas within 20 miles of the SSFL, has shown that the impact of fires on the concentration of fire-related chemicals in soil is regional.

- Concentrations of metals and dioxins within the Post-Topanga Fire Soil and Ash Background Data Set, although generally greater than the Approved Soil Background Data Set, are consistent with the range of regional background values.

  a. Concentrations of metals in the Post-Topanga Soil and Ash Background Data Set are within the range of metals concentrations published for regional California background data sets.

b. Dioxin Total Equivalency Quotients (TEQs) for soil and ash results in the Post-Topanga Soil and Ash Background Data Set are comparable to those calculated for the Post-Fire Reference Soil and Ash Data Set. Soil TEQ values for both data sets are within the range of TEQ values for the western United States (< 2 parts per trillion), while ash TEQ values in the post-fire data range higher than that comparison value.

Based on these findings, the following conclusions and recommendations are made:

- Regional brush fires are a source of heavy metals, dioxins, and other fire-related chemicals in soil;
- The Topanga Fire has increased the concentration of metals, dioxins, and PAHs in soil at and near the SSFL;
- The Post-Topanga Fire Soil and Ash Background Data Set can be used in the SSFL RCRA Program in a manner consistent with DTSC-approved work plans and agency guidance to make decisions for site characterization, risk assessment, and cleanup.

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APPENDIX D

SOIL BACKGROUND REPORT ADDENDUM

1.0 INTRODUCTION

Fires are known to result in increased soil levels of heavy metals, dioxins, and other chemicals (USEPA 2000, Nestrick et al. 1983, Sheffield 1985, Clement and Tashiro et al. 1991, Aronsson and Ekelund, 2004). Accordingly, documenting the changed conditions at the Santa Susana Field Laboratory (SSFL) background soil locations following the 2005 Topanga Fire is important to make appropriate RCRA Program decisions during the characterization, risk assessment, and cleanup phases of the project.

In September 2005, the Topanga Fire not only burned approximately 2,000 acres of land at the SSFL, but it also burned over 22,000 acres outside the SSFL. The fire burned mostly undeveloped and heavy-brush areas, although one home and a few structures were also destroyed. The fire produced ash and charred materials that deposited fire-related chemicals across the SSFL and the surrounding area from Chatsworth to Oxnard. Some of these fire-related chemicals are naturally occurring in soil in areas impacted by wildfires in Southern California, including the SSFL, while other chemicals are by-products of natural combustion.

The purpose of the Post-Topanga Fire Background Investigation was to provide data to support qualitative evaluations of changes in background concentrations of metals, dioxins, and other chemicals following the Topanga Fire. This Soil Background Report Addendum presents the results of soil and ash samples collected from agency-approved background locations at and surrounding the SSFL after the Topanga Fire, and describes how these data will be used in the RCRA Program at the SSFL. The results of the post-fire SSFL background sampling is termed in this report the Post-Topanga Fire Soil and Ash Background Data Set. In addition, samples of soil and ash from other on- and offsite undeveloped areas burned in the 2005 Topanga and Burbank fires were collected to evaluate the regional prevalence of fire-related impacts to soil. Predominantly collected in offsite areas, the regional post-fire data set is called in this report the Post-Fire Reference Soil and Ash Data Set. The Approved Soil Background Data Set was collected prior to the 2005 Topanga Fire at the SSFL, and was published in September 2005 Soil Background Report (MWH 2005a). The Soil Background Report presents the entirety of the Approved Soil

Background Data Set for the SSFL and provides a description of the approved soil background locations.

This Soil Background Report Addendum is being submitted to DTSC for their review and approval of the Post-Topanga Fire Soil and Ash Background Data Set and its use in the SSFL RCRA Program. It has been prepared by MWH Americas, Inc. (MWH) for The Boeing Company (Boeing), National Aeronautics and Space Administration (NASA), and the United States Department of Energy (DOE) to support the Resource Conservation and Recovery Act (RCRA) Program at the SSFL.

1.1 SCOPE OF SAMPLING

The scope of the post-Topanga Fire sampling was designed to evaluate potential increases in background concentrations of fire-related chemicals at the SSFL, and included the following:

- The Post-Topanga Fire Soil and Ash Background Data Set
  a. Collection of surficial soil samples from areas that either burned in the fire and/or received ash fall and/or contained fine charred material from the fire;
  b. Collection of ash from areas near the surficial soil samples that received ash fall from the fire within the burned area;
- The Post-Fire Reference Soil and Ash Data Set
  a. Collection of surficial soil samples from other undeveloped fire burn areas primarily away from the SSFL, including areas burned in the 2005 Topanga and Burbank fires;
  b. Collection of ash from areas that received ash fall from the fire near the surficial soil sampling locations within burned area; and
- Analysis of all samples for fire-related chemicals, including heavy metals and dioxin compounds.

This sampling was necessary to determine the net affect of fire ash on the DTSC-approved soil background concentrations, which are used when making decisions in the SSFL RCRA Program for Solid Waste Management Units and Areas of Concern (SWMUs/AOCs). The post-Topanga Fire sampling described in this report was designed to answer the following questions:

- What metals and dioxins found in fire ash or soil from fire-impacted areas have affected background metals and dioxins soil concentrations within and around the SSFL?
- After the fire, have metals and dioxins soil concentrations at background locations changed over previously reported values such that maximum concentrations are affected?
- Is soil from other fire areas not associated with the SSFL affected by fires in a similar manner?

In order to use this post-fire data in the SSFL RCRA Program, a process that is both complimentary and consistent with that approved in the Standardized Risk Assessment Methodology (SRAM) (MWH 2005b) is described in Section 4. The proposed uses of the Post-Topanga Fire Soil and Ash Background Data Set in the RCRA Program are designed to address:

- The use of the Post-Topanga Fire Soil and Ash Data Set in RCRA investigational unit characterization decisions; and
- The use of the Post-Topanga Fire Soil and Ash Data Set in the RCRA risk assessment process.

1.2 OVERVIEW OF POST-TOPANGA FIRE SAMPLING

Figure D-1 presents the agency-approved SSFL background sample locations (i.e., those sampled to establish the Approved Soil Background Data Set) and identifies which of these locations were re-sampled after the Topanga Fire. The extent of the Topanga fire is shown to show those samples collected within its footprint. Surface or shallow soil samples were collected at six DTSC-approved background locations either within or surrounding the SSFL. Six samples were believed to be sufficient to provide initial data to meet the study objective of providing a qualitative understanding of the potential fire-related soil impacts. These six locations were selected be representative of ambient site conditions at the SSFL after the Topanga Fire and are based on the following criteria:

- Previous soil samples analyzed for dioxins and metals;
- Received ash fall-out from the fire;

- Represent ambient conditions both within and adjacent to the Topanga Fire burn area;
- Reflect both upwind and downwind locations from SSFL (i.e., 360° along the outer boundary of the SSFL).

Based on field observations, the six locations met the above criteria. BKND-1 is the only sample from a location outside the extent of the fire footprint; however, it received ash from the fire. It is representative of the western area of the SSFL. Sample locations BKND-1 and BZSS06 were not sampled for ash because there were no large visible deposits of ash near those locations.

All soil and ash samples collected during the post-Topanga Fire sampling event were analyzed for fire-related chemicals (metals, dioxins, and polyaromatic hydrocarbons [PAHs]). Soil and ash samples were also analyzed for the following fire-retardant related chemicals: cyanide, sulfate, surfactants, and ammonia. Sulfate, surfactants, and ammonia were chosen for analysis due to their common occurrence in fire fighting foams compiled by the United States Forest Service on its website (USFS 2004). Cyanide was chosen for analysis due to the potential of free cyanide to be formed when water makes contact with fire-retardant Fire-Troll 931R (USGS 2003).

Metals analyses of post-Topanga Fire samples are identical to the analyses performed on samples in the Approved Soil Background Data Set presented in the Soil Background Report (MWH 2005a). Metals analysis performed on the six background location samples include aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, lithium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, vanadium, zinc, and zirconium.

The post-Topanga Fire sampling event was conducted by MWH between October 6 and 14, 2005 following RCRA Facility Investigation (RFI) standard field and laboratory operating procedures (Ogden 1996 and 2000). Field documentation of each sampling location is provided in Attachment D-1 and includes field sampling logs and photographs. All sample locations were surveyed using global positioning satellite (GPS) methods. Laboratory analytical data, and validation information are provided in Attachment D-2.

Additional post-Topanga Fire soil and ash samples were collected at other on- and offsite undeveloped locations to provide further ambient, regional data for comparison with the

SSFL Post-Topanga Fire Soil and Ash Background Data Set. This sampling data is called the Post-Fire Reference Soil and Ash Data Set and includes the following:

- Surficial soil and ash samples collected from each of two onsite locations upstream of National Pollutant Discharge Elimination System (NPDES) outfalls. These sampling points (Upstream-001 and Upstream-002) are located in drainages that are in the southern undeveloped portion of the SSFL, and are within the onsite extent of the Topanga Fire burn area.

- Seven surficial soil samples and five ash samples collected from offsite locations within the extent of the Topanga Fire burn area but outside of drainages from the SSFL. Sample locations at Chatsworth Reservoir Park (CRP-1), Santa Susana Mountains (SSM-1), and Rocky Peak (RP-1) are approximately 2 to 3 miles east-northeast of the SSFL. Sample locations in Palo Comado Canyon (PCC-1) and China Flats (CF-1) are approximately 3 miles southwest of the SSFL.

- Surficial soil and ash samples collected from each of two offsite locations at Stough Canyon (SC-1) and Wildwood Canyon (WC-1), within the burn area of the "Harvard" Fire in Burbank, CA, approximately 20 miles east of the SSFL. This fire occurred approximately one week after the Topanga Fire.

- All Post-Fire Reference Soil and Ash samples were analyzed for fire-related chemicals, including heavy metals and dioxin compounds. These samples were not analyzed for aluminum, lithium, molybdenum, potassium, sodium, and zirconium. The dioxins compound list was identical to that of the Approved Soil Background Data Set.

Sampling information for the Post-Fire Reference Soil and Ash Data Set is presented in Attachment D-3.

Several evaluations were preformed on the collected post-fire data. Statistical evaluations (e.g., paired-comparison, comparisons of means, Chi-square test) were considered but not employed because of the small number of data (6 post-fire soil and 4 post-fire ash) and the stated purpose of this investigation to provide a qualitative understanding of the potential impact of the fire on background soil concentrations. The comparisons performed included:

- Comparison of metals and dioxin concentrations for co-located samples collected pre- or post-fire. These comparisons provide an indication of the potential for fire-related impacts.

- Comparison of pre-fire metals, dioxin, and PAH maximum concentrations with post-fire maximum concentrations. These comparisons provide an indication of the potential magnitude of the fire-related impacts.

- Comparison of the Post Topanga Fire Background Soil and Ash Data Set to the Post-Fire Reference Soil and Ash Data Set. These comparisons provide an indication of whether post-fire impacts on SSFL are different than at other fires.

- Comparison of metals and dioxin post-fire data to regional pre-fire data. These comparisons also provide an indication of whether post-fire impacts on SSFL are different than at other fires.

1.3 SUMMARY OF APPROVED SOIL BACKGROUND DATA SET

The Approved Soil Background Data Set, a comprehensive data set defining ambient background concentrations of metals, dioxins, fluoride, and pH at the SSFL, was presented in the Soil Background Report (MWH 2005a). The data set was comprised of results from samples collected from 29 DTSC-approved background sample locations. Background sample locations were established to provide data representative of ambient or local soil conditions unaffected by site-related activities. To accomplish this, sample locations were selected within and surrounding the SSFL in areas not impacted by site activities (MWH 2005a). The Approved Soil Background Data Set was developed to assist site characterization and risk assessments for the ongoing RCRA Program at the SSFL. To guide onsite site characterization decisions, comparison values were derived from the data set to determine if soil at a given investigational unit contains metals, fluoride, or dioxin concentrations above ambient background. In both the human and ecological risk assessments, the Approved Soil Background Data Set will be used in the selection of chemicals of potential concern (COPCs) or chemicals of potential ecological concern (CPECs) (MWH 2005a).

As stated in Section 1.2 above, the Post-Topanga Fire Soil and Ash Background Data Set sampling was designed to determine if post-Topanga Fire concentrations of fire-related constituents have changed in soil at background locations. This will be assessed by comparing the Post-Topanga Fire Background Data Set to the Approved Soil Background Data Set.

2.0 SAMPLING AND ANALYSIS PROCEDURES

This section describes the field sampling and laboratory analysis procedures implemented during the post-Topanga Fire soil and ash background sampling.

2.1 FIELD SAMPLING SUMMARY

The six sample locations of The Post-Topanga Fire Soil and Ash Background Data Set were selected so that they were generally located 360° along the outer boundary of the SSFL. Since all sample locations for this data set were selected in areas that were burned or that were likely to have received a thin layer ash fall from the Topanga Fire, the sampling results were expected to be representative of ambient site conditions at the SSFL after the Topanga Fire. Though likely present, visible layers of ash were not observed at the soil sample locations. All soil samples were collected from 0 to 6 inches below ground surface (bgs). To ensure comparability with the Approved Soil Background Data Set, samples from background locations were collected from the same locations and depths as previous surface samples. For all soil samples, pebbles, visible vegetation, charred twigs, and leaves were carefully removed by scraping them aside with a pre-cleaned trowel, before scooping the sample into a glass jar. The jars were sealed, labeled, and shipped to the laboratory for analysis under appropriate chain-of-custody protocol (Ogden 1996 and 2000). Background soil samples collected following the Topanga Fire were predominately silts and silty sands (Attachment D-1), and the uppermost soil layer, typically less than ¼-inch, was gray to black or darker yellow brown than the remainder of the sample.

The ash samples were collected from accumulations that were generally 2 to 3 inches thick, and typically were located within about 30 feet of the soil background locations. As with the soil samples, a pre-cleaned trowel was used to collect the ash. Every effort was made not to include soil in the ash samples. Though the ash samples were mostly collected near fuel sources such as trees or bushes, the samples are a mixture of wind-blown and deposited ash from other burn areas, along with ash from the nearby fuel sources. The samples were a mixture of both gray and black ash. Generally, for each sample, three glass jars were filled with ash, labeled, and shipped to the laboratory for analysis under appropriate chain-of-custody documentation.

2.2 LABORATORY ANALYSIS SUMMARY

All samples were submitted to Del Mar Analytical, a California-certified laboratory in Irvine, California, under appropriate chain-of-custody. All soil and ash samples were analyzed for metals by USEPA Method 6010B/6020/7471A; dioxins by USEPA Method 1613B; PAHs by USEPA Method 8270CSIM; sulfate by USEPA Method 300; ammonia by USEPA 350.3; cyanide by USEPA Method 9014; and surfactants by methylene blue active substances (MBAS).

3.0 POST-TOPANGA FIRE DATA

The following sections describe data quality review findings and analytical results for the Post-Topanga Fire soil and ash samples collected at SSFL background locations.

3.1 DATA QUALITY

After laboratory analysis and review, all sampling results were validated by qualified chemists at AMEC Earth and Environmental, Inc. (AMEC). Overall, data quality was determined to meet project requirements and data were deemed acceptable by validation. Laboratory procedures, methods, and requirements followed the quality assurance criteria required for the RFI (Ogden 2000). Laboratory information and data validation results for the Post-Topanga Fire Soil and Ash Background Data Set are provided in Attachment D-2 and those for the Post-Fire Reference Soil and Ash Data Set are provided in Attachment D-3.

All post-Topanga Fire sample results were validated at Level IV, in accordance with the requirements in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (USEPA 1994a), *the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA 1994b), the analytical methods referenced by the laboratory, laboratory SOPs, and the appropriate AMEC validation procedures.

Data included in the Post-Topanga Fire Soil and Ash Background Data Set and the Post-Fire Reference Soil and Ash Data Set are the acceptable validated data without qualifiers, and estimated data ("J" or "UJ" qualifiers). Unusable data are denoted with an "R" qualifier, indicating that the data were rejected (Attachment D-2). Rejected data were not included in either of these data sets.

Based on validation, all data were usable, except for antimony results for soil samples collected at sample locations BKND-1, BKND-5, and SGSS01S01, due to low recovery of the spiked analyte in quality control samples. More detailed summaries of the validation findings are presented in the appendices.

3.2 METALS

Table D-1 presents metals sampling results for the Post-Topanga Fire Soil and Ash Background Data Set. Table D-2a provides a comparison of these data to the colocated sampling results in the Approved Soil Background Data Set. Data for both surficial soil samples (six locations) and ash samples (four locations) are provided and compared.

3.2.1 Metals in Post-Topanga Fire Soil

Between 20 and 22 metals were detected (out of 25 analyzed) in the six soil samples comprising the Post-Topanga Fire Soil and Ash Background Data Set. The fewest detects were in sample BKND-1, while the most were in sample SGSS01S01. Antimony, selenium, and silver were not detected in any of these soil samples. Boron, mercury, molybdenum, and zirconium were detected in all but a few of these soil samples. Boron was detected in every sample except BZSS06S01. Mercury was detected in every sample except BCSS09S01. Molybdenum was detected in every sample except BKND-1 and BKND-5. Zirconium was detected in every sample except BKND-1 and BZSS05S01.

A comparison, by location, of colocated soil samples in the Post-Topanga Fire Soil and Ash Background Data Set and the Approved Soil Background Data Set is presented in Table D-2a. Soil samples in the Post-Topanga Fire Soil and Ash Background Data Set contained between 10 and 19 metals concentrations that exceeded the respective concentrations in the colocated samples in the Approved Soil Background Data Set. These higher concentrations are shown by the bold font in Table D-2a. Sample location BZSS05 had the highest total number of increased concentrations (19). Sample location BKND-1, located outside of the footprint of the Topanga Fire burn area, had the fewest increased concentrations (10). Only thallium showed an increased concentration in every post-Topanga Fire soil sample. These comparisons demonstrate that post-fire surficial soil has been impacted by the fire.

Also presented in Table D-2a are a comparison of California regional background data (minimum, average, maximum from Kearney 1996; 95th and 99th population percentiles from Hunter et. al 2005), to maximum concentrations of the Post-Fire Reference Soil and Ash Data Set. These comparisons demonstrate that although soil concentrations are elevated for some metals in the post-fire samples, these concentrations are still within the range of southern California soil concentrations.

A total of 19 metals were analyzed in both the Post-Topanga Fire Background Soil and Ash Data Set and the Post-Fire Reference Soil and Ash Data Set. Six metals (aluminum, lithium, molybdenum, potassium, sodium and zirconium) were not included in the Post Fire Reference Soil and Ash Data Set that are included in the other data sets. Maximum soil concentrations for 14 metals were higher in the Post-Fire Reference Soil and Ash Data Set than in the Post-Topanga Fire Soil and Ash Background Data Set. Cadmium, lead, mercury, nickel and thallium had higher maximum soil concentrations in the Post-Topanga Fire Soil and Ash Background Data Set (Table D-2a). The Post-Topanga Fire Soil and Ash Data Set has soil results that are less than the upper range of the published regional California background soils data (Table D-2a).

Table D-3a presents a comparison of Post-Topanga Fire Soil and Ash Background Data Set with the Approved Soil Background Data Set. Only thallium and sodium had higher maximum post-Topanga Fire soil concentrations when contrasted with the comparison values established for the Approved Soil Background Data Set. (The comparison values of the Approved Soil Background Data Set are based on the maximum detected concentrations.) The approved comparison value for thallium and sodium in soil are 0.46 milligrams per kilogram (mg/kg) and 110 mg/kg, while the maximums in the Post-Topanga Fire data were 4.5 mg/kg and 180 mg/kg, respectively. These comparisons show that although soil concentrations have increased (based on collocated samples), establishing a new post-fire maximum soil background concentration would require additional sampling at other approved background locations.

3.2.2 Metals in Post-Topanga Fire Ash

Between 15 and 22 metals were detected in the four ash samples of the Post-Topanga Fire Soil and Ash Background Data Set. The fewest detects were found in sample BZSS05S01, while the most detects were found in sample SGSS01S01. Antimony, selenium, and silver were not detected in any of these ash samples. Arsenic, molybdenum, and zirconium were

detected in samples BCSS09S01 and SGSS01S01. Beryllium, thallium, and cadmium were detected in sample SGSS01S01. Mercury was detected in every sample except BZSS05S01. The detection of these metals in ash shows the potential for fire-related impacts to soil background concentrations.

Six metals had greater concentrations in all ash samples when compared to colocated soil samples in the Post-Topanga Fire Soil and Ash Background Data Set. Those metals were barium, boron, copper, manganese, potassium, and sodium (Table D-2a). The ash to soil ratios of metals concentrations in colocated samples for these six metals ranged from 1.15 (copper) to 45.7 (boron).

The maximum concentrations of 16 metals were greater in the ash samples in the Post-Fire Reference Soil and Ash Data Set than in the ash samples of the Post-Topanga Fire Soil and Ash Background Data Set. Only lead, mercury, and thallium had greater maximum concentrations in the Post-Topanga Fire Soil and Ash Background Data Set (Table D-2a). The Post-Topanga Fire Soil and Ash Data Set has ash results are less than the upper range of the published regional California background soils data (Table D-2a). These results show that fire ash contributes to background metals concentrations in soil.

3.3 DIOXINS

Table D-1 presents the dioxins sampling results for the Post-Topanga Fire Soil and Ash Background Data Set. Table D-2b provides a comparison of these data to the colocated sampling results in the Approved Soil Background Data Set. Data for both surficial soil samples (six locations) and ash samples (four locations) are provided and compared.

3.3.1 Dioxins in Post-Topanga Fire Soil

As shown in Table D-2b, between 5 and 15 dioxin congeners (out of 17) were detected in all soil samples in the Post-Topanga Fire Soil and Ash Background Data Set. The fewest detects were found in sample BCSS09S01 while the most detects were found in sample SGSS01S01. All congeners except 2,3,7,8-TCDD were detected in at least one sample. Two dioxin congeners (1,2,3,6,7,8-HxCDF and OCDD) were detected in every soil sample. Sample SGSS01S01, located offsite north of the SSFL had the highest concentrations of both of these congeners. Note that based on the formation of dioxin congeners, those non-detected congeners would be expected to be present at concentrations below the detection limit.

Between 4 and 11 dioxin congeners were detected at higher concentrations in colocated soil samples in the Post-Topanga Fire Soil and Ash Background Data Set than in the Approved Soil Background Data Set. Post-fire samples that exceeded their respective colocated sample in the Approved Soil Background Data Set are shown in bold font in Table D-2b. Sample location SGSS01 had the highest total number of increased congener concentrations. Sample location BKND-1 (located outside the Topanga Fire burn area footprint) had the lowest total number of increased congener concentrations. Two congeners, 1,2,3,7,8,9-HxCDF and 1,2,3,7,8-PeCDD, had post-Topanga Fire maximum concentrations that were more than twice as high as the maximum concentrations of the colocated samples in the Approved Soil Background Data Set. Ten congeners were detected in soil at higher maximum concentrations in the Post-Topanga Fire Soil and Ash Background Data Set when compared to the maximum concentrations of the Approved Soil Background Data Set (Table D-3b). The differences between results in these two data sets were less than two-fold.

Two dioxin congeners (1,2,3,7,8-PeCDD and 2,3,7,8-TCDF) had higher maximum soil concentrations in the Post-Fire Reference Soil and Ash Data Set than in the Post-Topanga Fire Background Soil and Ash Data Set. All other dioxins had higher maximum soil concentrations in the Post-Fire Soil and Ash Background Data Set (Table D-2b).

Total dioxins present in the post-fire soil sampling results were evaluated by calculating a Total Equivalency Quotients (TEQs). A dioxin TEQ is the sum of the 17 dioxin and furan congener concentrations in a sample after those concentrations have been multiplied by a toxicity equivalency factor. A TEQ value represents a total dioxin concentration. TEQ values are presented in Table D-2b for the Post-Topanga Fire Soil and Ash Background Data Set and the Post-Fire Reference Soil and Ash Data Set. Individual sample TEQs for the Post-Fire Reference Soil and Ash Data Set is provided in Attachment D-3.

Soil TEQ values in the Post-Topanga Fire Soil and Ash Background Data Set range up to 1.3 parts per trillion (ppt), and are generally similar to soil TEQ results in the Post-Fire Soil and Ash Reference Data Set which range up to 0.57 ppt (Table D-2b). For reference, measurements of background dioxins in the western United States result in a TEQs less than 2 ppt (USEPA 2001) and the Approved Background Data Set has dioxin TEQs ranging up to about 1 ppt.

3.3.2 Dioxins in Post-Topanga Fire Ash

Between 9 and 14 dioxin congeners were detected in each of the four ash samples in the Post-Topanga Fire Soil and Ash Background Data Set (Table D-2b). The fewest detects were in sample SGSS01S01 while the most detects were in sample BZSS05S01. One congener, 1,2,3,7,8,9-HxCDF, was not detected in any of these four ash samples. A total of five congeners (1,2,3,4,6,7,8-HpCDD; 1,2,3,4,6,7,8-HpCDF; 1,2,3,7,8,9-HxCDD; 1,2,3,7,8-PeCDD; and OCDD) were detected in each of the four ash samples.

All samples, except SGSS01S01, contained at least 10 congeners with higher concentrations in ash than in colocated soil samples in the Post-Topanga Fire Soil and Ash Background Data Set. In sample SGSS01S01 one ash soil congener concentration (1,2,3,7,8-PeCDD) was higher than the colocated ash sample.

The maximum concentrations of seven dioxins in ash were greater in the Post-Fire Reference Soil and Ash Data Set than in the Post-Topanga Fire Soil and Ash Background Data Set (Table D-2b). These dioxins included 1,2,3,4,7,8-HxCDD; 1,2,3,6,7,8-HxCDD; 1,2,3,7,8,9-HxCDF; 1,2,3,7,8,9-HxCDD; 1,2,3,7,8-PeCDD; 2,3,7,8-TCDD, and OCDF. The maximum concentrations of all other dioxin congeners were greater in the Post-Topanga Fire Soil and Ash Background Data Set (Table D-2b).

Ash TEQ values in the Post-Topanga Fire Soil and Ash Background Data Set were higher than those in soil, and range up to 3.2 ppt. These TEQs were within the range of TEQs for ash results in the Post-Fire Soil and Ash Reference Data Set (up to 17.4 ppt) (Table D-2b). The ash TEQ values for both data sets range higher than the measurements of background dioxins in the western United States (< 2 ppt) (USEPA 2001) and in the Approved Soil Background Data Set (1 ppt).

3.4 PAH AND OTHER POTENTIALLY FIRE-RELATED CHEMICALS

Though not part of the Approved Soil Background Data Set, sampling and analysis for PAH and other potentially fire-related constituents (cyanide, sulfate, MBAS, and ammonia) were added during the planning of field activities. PAH analyses were conducted at each of the six soil background locations in the Post-Topanga Fire Soil and Ash Background Data Set. Analytical results for these compounds are provided in Table D-1. Laboratory reports and validation information for these results are provided in Attachment D-2 of this report.

3.4.1 PAHs

PAHs were analyzed in all six samples in the Post-Topanga Fire Soil and Ash Data Set for comparison with PAH results collected at selected background locations before the Topanga Fire.

3.4.1.1 PAHs in Post-Topanga Fire Soil

A total of 14 individual PAHs compounds were detected in the post-fire samples. There was a minimum of 1 and a maximum of 12 PAH compounds were detected in each of the samples in the Post-Topanga Fire Soil and Ash Background Data Set. The PAHs anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were not detected in any samples. Every other PAH compound was detected at least once. No PAHs were detected in every sample. Naphthalene and phenanthrene were detected the most (five samples each). Sample SGSS01S01 had the most detects (12) and BKND-1 had the fewest (1).

PAHs were analyzed in three soil samples from approved background locations collected before the Topanga Fire (BCSS09S01, BKND-1, and BKND-5) (MWH 2004). None of the 14 PAHs detected in samples in the Post-Topanga Fire Soil and Ash Background Data Set were detected previously; however, this may be due to higher reporting limits in the pre-Topanga Fire data. All detected PAHs, except naphthalene, were detected at concentrations lower than the reported detection limits in the pre-Topanga Fire soil samples.

3.4.1.2 PAHs in Post-Topanga Fire Ash

PAH compounds were detected in each of the four ash samples in the Post-Topanga Fire Soil and Ash Background Data Set. Sample BCSS09S01 had the most detects with 14 PAHs, while samples BKND-5 and SGSS01S01 had the fewest with seven PAHs. Chrysene, fluoranthene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene were detected in each of the four ash samples. Acenaphthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were not detected in any sample. Of the 39 detected PAH in the four ash samples, 26 had higher concentrations in the ash sample than in the colocated soil sample in the Post-Topanga Fire Soil and Ash Background Data Set.

3.4.2 Other Potentially Fire-Related Chemicals

All soil and ash samples in the Post-Topanga Fire Soil and Ash Background Data Set were analyzed for sulfate, cyanide, surfactants, and ammonia to assess the potential impact, if any, of the use of fire-retardants on ambient conditions at the SSFL. These chemicals are known to be commonly used in fire-retardants (USFS 2004, USGS 2003). The results are presented below, and in Table D-1.

3.4.2.1 Other Potentially Fire-Related Chemicals in Soil

Each of the 4 fire-retardant-related chemicals was detected at least once in the soil samples of the Post-Topanga Soil and Ash Background Data Set. Sulfate was the only chemical detected in each of the six soil samples. Surfactants were detected the fewest times in soil samples. Sample BKND-1 had the fewest total detected fire-retardant related chemicals (1). Sample BCSS09S01 had the most detects (4).

3.4.2.2 Other Potentially Fire-Related Chemicals in Ash

Sulfate, cyanide, surfactants, and ammonia were detected in each of the four ash samples in the Post-Topanga Fire Soil and Ash Background Data Set. The concentrations of sulfate, surfactants, and cyanide were greater in each of the ash samples than in its colocated soil sample. For ammonia, all soil samples had a greater concentration of ammonia than the colocated ash sample. No previous analysis for any of these constituents was performed on any background soil sample before the Topanga Fire.

4.0 USES OF THE POST-TOPANGA FIRE DATA

The post-Topanga Fire sampling data show that fire ash has the potential to increase soil background concentrations for metals, dioxins, and other fire-related chemicals. These potential increases should be considered if any post-Topanga Fire soil samples are collected for use in the RCRA Program at SSFL. The following sections describe how the Post-Topanga Fire Soil and Ash Background Data Set will be used in the onsite characterization and risk assessment phases of the SSFL RCRA Program.

4.1 COMPARISON FOR INVESTIGATIONAL UNIT CHARACTERIZATION

All pre-Topanga fire site soil data at investigational units will be compared to the Approved Soil Background Data Set as described in the Soil Background Report (MWH 2005a).

All post-fire surficial soil and sediment samples will be collected at a depth just below the surface which considers the presence of deposited ash and burnt debris on the surface. All post-Topanga Fire metals and dioxins soil data will first be compared to the Approved Soil Background Data Set. Any result determined to be above the background comparison value because it is a post-Topanga Fire sample will then be compared to the maximum concentrations of metals or dioxins in the Post-Topanga Fire Soil and Ash Background Data Set. This process will also be applied to other fire-related chemicals detected in the Post-Topanga Fire Data Set (i.e., PAHs). Best-professional judgment will be used to determine if additional step-out sampling is necessary for characterization completeness. Lines of evidence to be considered include: site operations/history, soil and groundwater sampling data trends (both pre- and post-fire), and risk-based standards.

The post-fire soil concentrations are not proposed to be added to the Approved Background Data Set because of the limited number of post-fire samples and the recognition that additional post-fire data would be needed to determine the post-fire maximum concentrations. A qualitative weight-of-evidence evaluation is appropriate for the available data.

4.2 COMPARISON FOR INVESTIGATIONAL UNIT RISK ASSESSMENTS

All pre-Topanga fire investigational unit soil data will be compared to the Approved Soil Background Data Set as described in the Soil Background Report (MWH 2005a).

All post-Topanga Fire investigational unit metals or dioxins soil data will first be compared to the Approved Soil Background Data Set as described in the Soil Background Report (MWH 2005a) and SRAM (MWH 2005b). Any metal or dioxin congener that is determined to be above a background comparison level because it has been detected in a post-Topanga Fire sample will be selected as a COPC/CPEC and evaluated in the risk assessment. This process will also be applied to other fire-related chemicals detected in the Post-Topanga Fire Data Set (i.e., PAHs). These COPCs/CPECs selected because of the post-Topanga Fire samples will be evaluated in the uncertainty section of the risk characterization section of the

report. A best-professional judgment evaluation of these risks will be presented. This will include comparison of post-fire soil data of these selected COPCs/CPECs to the maximum concentrations in the Post-Topanga Fire Soil and Ash Background Data Set. Other considerations will be site operations/history, sampling data trends, risk values and contribution to total site risk, and the type of RCRA decisions based on these samples.

The post-fire soil concentrations are not proposed to be added to the Approved Background Data Set because of the limited number of post-fire samples and the recognition that additional post-fire data would be needed to determine the post-fire maximum concentrations. A qualitative weight-of-evidence evaluation is appropriate for the available data.

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

It has been well documented in scientific literature that regional brush fires result in dioxins, metals, and other constituents (USEPA 2000, Nestrick et al. 1983, Sheffield 1985, Clement and Tashiro et al. 1991, Aronsson and Ekelund, 2004). Documenting the changed conditions at the SSFL background soil locations following 2005 Topanga Fire is important to make appropriate RCRA Program decisions in the characterization, risk assessment, and cleanup phases of the project. This report presents the Post-Topanga Fire Soil and Ash Background Data Set and proposes a process by which that data can be used within the existing RCRA Program. Post-fire sampling results from other on- and offsite undeveloped areas within the Topanga and Burbank Fire burn areas were also sampled for fire-related chemicals, and those results compared to the results from the SSFL background locations.

This Soil Background Report Addendum presents the results of post-Topanga Fire soil and ash sampling and compares these results with the Approved Soil Background Data Set and the Post-Fire Reference Soil and Ash Data Set.

The following describes the findings of this sampling program:

- Concentrations of several fire-related chemicals in soil and ash in the Post-Topanga Fire Soil and Ash Background Data Set were greater than their colocated soil samples in the Approved Soil Background Data Set.
- Some chemicals are higher in post-fire soil samples than background soil:

a. Two metals had higher maximum soil concentrations in the Post-Topanga Fire Soil and Ash Background Data Set than in the Approved Soil Background Data Set.

b. Ten dioxin congeners had higher maximum soil concentrations in the Post-Topanga Soil and Ash Background Data Set than in the Approved Soil Background Data Set.

c. Several PAHs had higher maximum soil concentrations in the Post-Topanga Soil and Ash Background Data Set than in the previously detected concentrations of these chemicals in pre-Topanga Fire samples collected at the Approved Soil Background locations.

- Some chemicals are higher in post-fire ash samples than background soil:

  a. Ten metals had higher maximum ash concentrations in the Post-Topanga Fire Soil and Ash Background Data Set than in the Approved Soil Background Data Set.

  b. Fifteen dioxins had higher maximum ash concentrations in the Post-Topanga Fire Background Data Set than in the Approved Soil Background Data Set. The Post-Topanga Fire maximum results were less than twice as high as the approved values.

  c. Several PAHs had higher maximum ash concentrations in the Post-Topanga Soil and Ash Background Data Set than in the previously detected concentrations of these chemicals in pre-Topanga Fire samples collected at the Approved Soil Background locations.

- Post-fire concentrations of metals and dioxins are not limited to the SSFL area:

  a. Concentrations of metals and dioxins in the Post-Topanga Soil and Ash Background Data Set are similar to concentrations of metals and dioxins in the Post-Fire Reference Soil and Ash Data Set.

  b. The Post-Fire Reference Soil and Ash Data Set, consisting of soil and ash from other burned areas within 20 miles of the SSFL, has shown that the impact of fires on the concentration of fire-related chemicals in soil is regional.

- Concentrations of metals and dioxins within the Post-Topanga Fire Soil and Ash Background Data Set, although generally greater than the Approved Soil Background Data Set, are consistent with the range of regional background values.

  a. Concentrations of metals in the Post-Topanga Soil and Ash Background Data Set are within the range of metals concentrations published for regional California background data sets.

  b. Total Toxic Equivalency (TEQs) for soil and ash results in the Post-Topanga Soil and Ash Background Data Set are comparable to those calculated for the Post-Fire

Reference Soil and Ash Data Set. Soil TEQ values for both data sets are within the range of TEQ values for the western United States (< 2 parts per trillion), while ash TEQ values in the post-fire data range higher than that comparison value.

Based on these findings, the following conclusions and recommendations are made:

- Regional brush fires are a source of heavy metals, dioxins, and other fire-related chemicals in soil;
- The Topanga Fire has increased the concentration of metals, dioxins, and PAHs in soil at and near the SSFL;
- The Post-Topanga Fire Soil and Ash Background Data Set can be used in the SSFL RCRA Program in a manner consistent with DTSC-approved work plans and agency guidance to make decisions for site characterization, risk assessment, and cleanup.

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TABLES

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,4,6,7,8-HpCDD	3.27	pg/g			T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,4,6,7,8-HpCDF	0.32	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,4,7,8,9-HpCDF	0.152	pg/g	U	0.152	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,4,7,8-HxCDD	0.328	pg/g	U	0.328	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,4,7,8-HxCDF	0.167	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,6,7,8-HxCDD	0.303	pg/g	U	0.303	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,6,7,8-HxCDF	0.148	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,7,8,9-HxCDD	0.378	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,7,8,9-HxCDF	0.0797	pg/g	U	0.0797	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,7,8-PeCDD	0.289	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	1,2,3,7,8-PeCDF	0.206	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	2,3,4,6,7,8-HxCDF	0.115	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	2,3,4,7,8-PeCDF	0.174	pg/g	UJ	0.174	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	2,3,7,8-TCDD	0.134	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	2,3,7,8-TCDF	0.389	pg/g	J		T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	OCDD	9.35	pg/g			T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	OCDF	0.469	pg/g	U	0.469	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	TCDD TEQ (ND = 0)	0.59	pg/g			T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total HpCDD	7.28	pg/g			T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total HpCDF	0.32	pg/g			T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total HxCDD	5.54	pg/g			T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total HxCDF	0.661	pg/g		0.989	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total PeCDD	4.15	pg/g		4.33	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total PeCDF	1.2	pg/g		1.84	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total TCDD	2.72	pg/g		3.27	T713DF4
BCSS09S01	WL024	Ash	10/14/05	1613	Total TCDF	4.37	pg/g		4.6	T713DF4
BCSS09S01	WL024	Ash	10/14/05	6010B	Aluminum	13,000.00	mg/kg		10	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Antimony	1.7	mg/kg	U	1.7	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Arsenic	3.90	mg/kg		1.2	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Barium	300	mg/kg		1.7	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Beryllium	0.41	mg/kg	U	0.41	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Boron	160	mg/kg		2.1	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Cadmium	0.41	mg/kg	U	0.41	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Chromium	15	mg/kg		0.62	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Cobalt	4.5	mg/kg		0.62	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Copper	64	mg/kg		0.41	T713MT3

TABLE D-1
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Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BCSS09S01	WL024	Ash	10/14/05	6010B	Iron	12,000.00	mg/kg		3.1	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Lead	9.7	mg/kg		0.83	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Lithium	14.00	mg/kg		1.9	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Manganese	520	mg/kg		1.7	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Molybdenum	1.7	mg/kg		0.41	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Nickel	24	mg/kg		0.41	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Potassium	53,000.00	mg/kg		83	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Selenium	2.1	mg/kg	U	2.1	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Silver	0.83	mg/kg	U	0.83	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Sodium	3,100.00	mg/kg		31	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Thallium	1.7	mg/kg	U	1.7	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Vanadium	28.00	mg/kg		0.62	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Zinc	150	mg/kg		3.1	T713MT3
BCSS09S01	WL024	Ash	10/14/05	6010B	Zirconium	4.1	mg/kg		3.1	T713MT3
BCSS09S01	WL024	Ash	10/14/05	7471A	Mercury	0.0038	mg/kg		0.0031	T713MT3
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	1-Methylnaphthalene	0.094	mg/kg		0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	2-Methylnaphthalene	0.14	mg/kg		0.02	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Acenaphthene	0.021	mg/kg	U	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Acenaphthylene	0.013	mg/kg	J	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Anthracene	0.022	mg/kg		0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Benzo(a)anthracene	0.016	mg/kg	J	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Benzo(a)pyrene	0.03	mg/kg		0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Benzo(b)fluoranthene	0.025	mg/kg		0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Benzo(g,h,i)perylene	0.012	mg/kg	J	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Benzo(k)fluoranthene	0.021	mg/kg	U	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Chrysene	0.1	mg/kg		0.02	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Dibenzo(a,h)anthracene	0.021	mg/kg	U	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Fluoranthene	0.057	mg/kg		0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Fluorene	0.011	mg/kg	J	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.021	mg/kg	U	0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Naphthalene	0.93	mg/kg		0.02	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Phenanthrene	0.24	mg/kg		0.02	T713PA2
BCSS09S01	WL024	Ash	10/14/05	8270C SIM	Pyrene	0.053	mg/kg		0.021	T713PA2
BCSS09S01	WL024	Ash	10/14/05	350.3 MOD.	Ammonia-NH3	13	mg/kg		6.2	T713WC2
BCSS09S01	WL024	Ash	10/14/05	300	Sulfate	6,800.00	mg/kg		100	T713WC2
BCSS09S01	WL024	Ash	10/14/05	9014	Total Cyanide	1.9	mg/kg		0.52	T713WC2

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
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Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BCSS09S01	WL024	Ash	10/14/05	SM5540-C MOD.	Surfactants (MBAS)	4.5	mg/kg	J	2.1	T713WC2
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,4,6,7,8-HpCDD	0.686	pg/g	UJ	0.686	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,4,6,7,8-HpCDF	0.147	pg/g	UJ	0.147	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,4,7,8,9-HpCDF	0.0864	pg/g	U	0.0864	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,4,7,8-HxCDD	0.118	pg/g	U	0.118	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,4,7,8-HxCDF	0.154	pg/g	J		T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,6,7,8-HxCDD	0.115	pg/g	U	0.115	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,6,7,8-HxCDF	0.133	pg/g	J		T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,7,8,9-HxCDD	0.117	pg/g	U	0.117	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,7,8,9-HxCDF	0.0905	pg/g	U	0.0905	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,7,8-PeCDD	0.0826	pg/g	U	0.0826	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	1,2,3,7,8-PeCDF	0.291	pg/g	UJ	0.291	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	2,3,4,6,7,8-HxCDF	0.0588	pg/g	U	0.0588	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	2,3,4,7,8-PeCDF	0.197	pg/g	J		T713DF4
BCSS09S01	WL025	S	10/14/05	1613	2,3,7,8-TCDD	0.109	pg/g	U	0.109	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	2,3,7,8-TCDF	0.279	pg/g	J		T713DF4
BCSS09S01	WL025	S	10/14/05	1613	OCDD	4.23	pg/g	J		T713DF4
BCSS09S01	WL025	S	10/14/05	1613	OCDF	0.325	pg/g	U	0.325	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	TCDD TEQ (ND = 0)	0.16	pg/g			T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total HpCDD	1.02	pg/g		1.71	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total HpCDF	0.147	pg/g	U	0.147	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total HxCDD	0.279	pg/g			T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total HxCDF	0.689	pg/g			T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total PeCDD	0.0826	pg/g	U	0.0826	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total PeCDF	2.2	pg/g		2.78	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total TCDD	0.109	pg/g	U	0.109	T713DF4
BCSS09S01	WL025	S	10/14/05	1613	Total TCDF	2.53	pg/g			T713DF4
BCSS09S01	WL025	S	10/14/05	6010B	Aluminum	9,900.00	mg/kg		5.1	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Antimony	0.81	mg/kg	U	0.81	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Arsenic	11	mg/kg		0.61	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Barium	69	mg/kg		0.81	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Beryllium	0.54	mg/kg		0.2	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Boron	3.5	mg/kg		1	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Cadmium	0.47	mg/kg		0.2	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Chromium	15	mg/kg		0.3	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Cobalt	4.5	mg/kg		0.3	T713MT3

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
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Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BCSS09S01	WL025	S	10/14/05	6010B	Copper	9.2	mg/kg		0.2	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Iron	16,000.00	mg/kg		1.5	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Lead	10.00	mg/kg		0.4	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Lithium	17	mg/kg		0.91	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Manganese	260	mg/kg		0.81	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Molybdenum	0.42	mg/kg		0.2	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Nickel	11	mg/kg		0.2	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Potassium	3,700.00	mg/kg		40	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Selenium	1.00	mg/kg	U	1	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Silver	0.4	mg/kg	U	0.4	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Sodium	150	mg/kg		15	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Thallium	1.9	mg/kg		0.81	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Vanadium	27	mg/kg		0.3	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Zinc	53	mg/kg		1.5	T713MT3
BCSS09S01	WL025	S	10/14/05	6010B	Zirconium	1.6	mg/kg		1.5	T713MT3
BCSS09S01	WL025	S	10/14/05	7471A	Mercury	0.003	mg/kg	UJ	0.003	T713MT3
BCSS09S01	WL025	S	10/14/05	8270C SIM	1-Methylnaphthalene	0.017	mg/kg	J	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	2-Methylnaphthalene	0.022	mg/kg		0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Acenaphthene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Acenaphthylene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Anthracene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Benzo(a)anthracene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Benzo(a)pyrene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Benzo(b)fluoranthene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Benzo(g,h,i)perylene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Benzo(k)fluoranthene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Chrysene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Dibenzo(a,h)anthracene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Fluoranthene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Fluorene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Naphthalene	0.07	mg/kg		0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Phenanthrene	0.021	mg/kg		0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	8270C SIM	Pyrene	0.02	mg/kg	U	0.02	T713PA2
BCSS09S01	WL025	S	10/14/05	350.3 MOD.	Ammonia-NH3	27	mg/kg		6	T713WC2
BCSS09S01	WL025	S	10/14/05	300	Sulfate	440	mg/kg		5.1	T713WC2

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
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Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BCSS09S01	WL025	S	10/14/05	9014	Total Cyanide	1.5	mg/kg		0.5	T713WC2
BCSS09S01	WL025	S	10/14/05	SM5540-C MOD.	Surfactants (MBAS)	3	mg/kg	J	2	T713WC2
BKND-1	WL021	S	10/13/05	1613	1,2,3,4,6,7,8-HpCDD	3.4	pg/g			T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,4,6,7,8-HpCDF	0.561	pg/g	J		T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,4,7,8,9-HpCDF	0.0839	pg/g	U	0.0839	T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,4,7,8-HxCDD	0.192	pg/g	J		T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,4,7,8-HxCDF	0.135	pg/g	J		T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,6,7,8-HxCDD	0.174	pg/g	J		T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,6,7,8-HxCDF	0.0912	pg/g	J		T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,7,8,9-HxCDD	0.0894	pg/g	U	0.0894	T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,7,8,9-HxCDF	0.0588	pg/g	U	0.0588	T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,7,8-PeCDD	0.0646	pg/g	U	0.0646	T713DF6
BKND-1	WL021	S	10/13/05	1613	1,2,3,7,8-PeCDF	0.0811	pg/g	UJ	0.0811	T713DF6
BKND-1	WL021	S	10/13/05	1613	2,3,4,6,7,8-HxCDF	0.0852	pg/g	UJ	0.0852	T713DF6
BKND-1	WL021	S	10/13/05	1613	2,3,4,7,8-PeCDF	0.137	pg/g	UJ	0.137	T713DF6
BKND-1	WL021	S	10/13/05	1613	2,3,7,8-TCDD	0.0622	pg/g	U	0.0622	T713DF6
BKND-1	WL021	S	10/13/05	1613	2,3,7,8-TCDF	0.163	pg/g	J		T713DF6
BKND-1	WL021	S	10/13/05	1613	OCDD	48	pg/g			T713DF6
BKND-1	WL021	S	10/13/05	1613	OCDF	0.97	pg/g	J		T713DF6
BKND-1	WL021	S	10/13/05	1613	TCDD TEQ (ND = 0)	0.12	pg/g			T713DF6
BKND-1	WL021	S	10/13/05	1613	Total HpCDD	9.59	pg/g			T713DF6
BKND-1	WL021	S	10/13/05	1613	Total HpCDF	1.27	pg/g			T713DF6
BKND-1	WL021	S	10/13/05	1613	Total HxCDD	1.3	pg/g			T713DF6
BKND-1	WL021	S	10/13/05	1613	Total HxCDF	1.03	pg/g		1.3	T713DF6
BKND-1	WL021	S	10/13/05	1613	Total PeCDD	0.149	pg/g		0.287	T713DF6
BKND-1	WL021	S	10/13/05	1613	Total PeCDF	1.02	pg/g		1.24	T713DF6
BKND-1	WL021	S	10/13/05	1613	Total TCDD	0.0622	pg/g	U	0.0622	T713DF6
BKND-1	WL021	S	10/13/05	1613	Total TCDF	0.163	pg/g		0.981	T713DF6
BKND-1	WL021	S	10/13/05	6010B	Aluminum	12,000.00	mg/kg	J	10	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Arsenic	3.4	mg/kg	J	1.2	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Barium	59	mg/kg		1.7	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Beryllium	0.54	mg/kg	J	0.41	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Boron	6.6	mg/kg	J	2.1	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Cadmium	0.57	mg/kg	J	0.41	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Chromium	16	mg/kg		0.62	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Cobalt	6.3	mg/kg		0.62	T713MT5

TABLE D-1
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Soil and Ash Background Sample Results
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Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BKND-1	WL021	S	10/13/05	6010B	Copper	12	mg/kg		0.41	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Iron	19,000.00	mg/kg		3.1	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Lead	9.5	mg/kg		0.83	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Lithium	18	mg/kg		1.9	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Manganese	390	mg/kg		1.7	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Molybdenum	0.41	mg/kg	U	0.41	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Nickel	14	mg/kg	J	0.41	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Potassium	3,400.00	mg/kg		83	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Selenium	2.1	mg/kg	U	2.1	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Silver	0.83	mg/kg	U	0.83	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Sodium	64	mg/kg	J	31	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Thallium	3.3	mg/kg	J	1.7	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Vanadium	27	mg/kg		0.62	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Zinc	51	mg/kg		3.1	T713MT5
BKND-1	WL021	S	10/13/05	6010B	Zirconium	1.6	mg/kg	U	1.6	T713MT5
BKND-1	WL021	S	10/13/05	7471A	Mercury	0.011	mg/kg	J	0.0031	T713MT5
BKND-1	WL021	S	10/13/05	8270C SIM	1-Methylnaphthalene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	2-Methylnaphthalene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Acenaphthene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Acenaphthylene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Anthracene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Benzo(a)anthracene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Benzo(a)pyrene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Benzo(b)fluoranthene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Benzo(g,h,i)perylene	0.02	mg/kg	UJ	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Benzo(k)fluoranthene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Chrysene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Dibenzo(a,h)anthracene	0.02	mg/kg	UJ	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Fluoranthene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Fluorene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Naphthalene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Phenanthrene	0.02	mg/kg	U	0.02	T713PA3
BKND-1	WL021	S	10/13/05	8270C SIM	Pyrene	0.0094	mg/kg	J	0.02	T713PA3
BKND-1	WL021	S	10/13/05	350.3 MOD.	Ammonia-NH3	6.2	mg/kg	U	6.2	T713WC4
BKND-1	WL021	S	10/13/05	300	Sulfate	12	mg/kg		5.1	T713WC4

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BKND-1	WL021	S	10/13/05	9014	Total Cyanide	0.51	mg/kg	U	0.51	T713WC4
BKND-1	WL021	S	10/13/05	SM5540-C MOD.	Surfactants (MBAS)	5.2	mg/kg	UJ	5.2	T713WC4
BKND-5	WL018	S	10/13/05	1613	1,2,3,4,6,7,8-HpCDD	20.4	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,4,6,7,8-HpCDF	3.16	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,4,7,8,9-HpCDF	0.331	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,4,7,8-HxCDD	0.449	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,4,7,8-HxCDF	0.287	pg/g	UJ	0.287	T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,6,7,8-HxCDD	0.95	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,6,7,8-HxCDF	0.27	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,7,8,9-HxCDD	0.888	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,7,8,9-HxCDF	0.13	pg/g	UJ	0.13	T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,7,8-PeCDD	0.279	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	1,2,3,7,8-PeCDF	0.178	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	2,3,4,6,7,8-HxCDF	0.337	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	2,3,4,7,8-PeCDF	0.293	pg/g	J		T713DF6
BKND-5	WL018	S	10/13/05	1613	2,3,7,8-TCDD	0.087	pg/g	U	0.087	T713DF6
BKND-5	WL018	S	10/13/05	1613	2,3,7,8-TCDF	0.301	pg/g	UJ	0.301	T713DF6
BKND-5	WL018	S	10/13/05	1613	OCDD	211	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	OCDF	9.83	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	TCDD TEQ (ND = 0)	0.98	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	Total HpCDD	42.8	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	Total HpCDF	8.59	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	Total HxCDD	9.75	pg/g			T713DF6
BKND-5	WL018	S	10/13/05	1613	Total HxCDF	4.17	pg/g		4.58	T713DF6
BKND-5	WL018	S	10/13/05	1613	Total PeCDD	2.48	pg/g		2.83	T713DF6
BKND-5	WL018	S	10/13/05	1613	Total PeCDF	3.83	pg/g		4.09	T713DF6
BKND-5	WL018	S	10/13/05	1613	Total TCDD	0.774	pg/g		0.89	T713DF6
BKND-5	WL018	S	10/13/05	1613	Total TCDF	3.13	pg/g		3.96	T713DF6
BKND-5	WL018	S	10/13/05	6010B	Aluminum	9,800.00	mg/kg	J	11	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Arsenic	3.9	mg/kg	J	1.3	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Barium	76	mg/kg		1.7	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Beryllium	0.47	mg/kg	J	0.44	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Boron	6	mg/kg	J	2.2	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Cadmium	0.48	mg/kg	J	0.44	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Chromium	12	mg/kg		0.65	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Cobalt	4.1	mg/kg		0.65	T713MT5

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BKND-5	WL018	S	10/13/05	6010B	Copper	8.00	mg/kg		0.44	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Iron	15,000.00	mg/kg		3.3	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Lead	27	mg/kg		0.87	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Lithium	19	mg/kg		2	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Manganese	270	mg/kg		1.7	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Molybdenum	0.44	mg/kg	U	0.44	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Nickel	11.00	mg/kg	J	0.44	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Potassium	3,300.00	mg/kg		87	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Selenium	2.2	mg/kg	U	2.2	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Silver	0.87	mg/kg	U	0.87	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Sodium	69	mg/kg	J	33	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Thallium	3.3	mg/kg	J	1.7	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Vanadium	23	mg/kg		0.65	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Zinc	55	mg/kg		3.3	T713MT5
BKND-5	WL018	S	10/13/05	6010B	Zirconium	1.7	mg/kg	J	1.6	T713MT5
BKND-5	WL018	S	10/13/05	7471A	Mercury	0.0091	mg/kg	J	0.0033	T713MT5
BKND-5	WL018	S	10/13/05	8270C SIM	1-Methylnaphthalene	0.042	mg/kg		0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	2-Methylnaphthalene	0.051	mg/kg		0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Acenaphthene	0.012	mg/kg	J	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Acenaphthylene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Anthracene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Benzo(a)anthracene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Benzo(a)pyrene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Benzo(b)fluoranthene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Benzo(g,h,i)perylene	0.022	mg/kg	UJ	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Benzo(k)fluoranthene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Chrysene	0.0087	mg/kg	J	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Dibenzo(a,h)anthracene	0.022	mg/kg	UJ	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Fluoranthene	0.0098	mg/kg	J	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Fluorene	0.015	mg/kg	J	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Naphthalene	0.14	mg/kg		0.02	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Phenanthrene	0.034	mg/kg		0.022	T713PA3
BKND-5	WL018	S	10/13/05	8270C SIM	Pyrene	0.014	mg/kg	J	0.022	T713PA3
BKND-5	WL018	S	10/13/05	350.3 MOD.	Ammonia-NH3	32.00	mg/kg		6.5	T713WC4
BKND-5	WL018	S	10/13/05	300	Sulfate	180	mg/kg		11	T713WC4

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BKND-5	WL018	S	10/13/05	9014	Total Cyanide	1.7	mg/kg		0.54	T713WC4
BKND-5	WL018	S	10/13/05	SM5540-C MOD.	Surfactants (MBAS)	5.4	mg/kg	UJ	5.4	T713WC4
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,4,6,7,8-HpCDD	100	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,4,6,7,8-HpCDF	3.45	pg/g	J		T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,4,7,8,9-HpCDF	0.491	pg/g	J		T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,4,7,8-HxCDD	0.916	pg/g	J		T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,4,7,8-HxCDF	0.241	pg/g	UJ	0.241	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,6,7,8-HxCDD	5.57	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,6,7,8-HxCDF	0.195	pg/g	UJ	0.195	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,7,8,9-HxCDD	3.35	pg/g	J		T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,7,8,9-HxCDF	0.0764	pg/g	U	0.0764	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,7,8-PeCDD	0.749	pg/g	J		T713DF6
BKND-5	WL019	Ash	10/13/05	1613	1,2,3,7,8-PeCDF	0.159	pg/g	U	0.159	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	2,3,4,6,7,8-HxCDF	0.281	pg/g	J		T713DF6
BKND-5	WL019	Ash	10/13/05	1613	2,3,4,7,8-PeCDF	0.139	pg/g	U	0.139	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	2,3,7,8-TCDD	0.363	pg/g	J		T713DF6
BKND-5	WL019	Ash	10/13/05	1613	2,3,7,8-TCDF	0.114	pg/g	U	0.114	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	OCDD	470	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	OCDF	17	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	TCDD TEQ (ND = 0)	3.2	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total HpCDD	171	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total HpCDF	12.1	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total HxCDD	42.7	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total HxCDF	2.76	pg/g		3.55	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total PeCDD	12.5	pg/g		13.8	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total PeCDF	0.986	pg/g			T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total TCDD	7.10	pg/g		8.46	T713DF6
BKND-5	WL019	Ash	10/13/05	1613	Total TCDF	0.481	pg/g		0.683	T713DF6
BKND-5	WL019	Ash	10/13/05	6010B	Aluminum	3,400.00	mg/kg	J	22	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Arsenic	2.7	mg/kg	U	2.7	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Barium	360	mg/kg		3.5	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Beryllium	0.88	mg/kg	U	0.88	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Boron	85	mg/kg		4.4	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Cadmium	0.88	mg/kg	U	0.88	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Chromium	2.3	mg/kg		1.3	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Cobalt	1.60	mg/kg		1.3	T713MT5

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BKND-5	WL019	Ash	10/13/05	6010B	Copper	25	mg/kg		0.88	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Iron	4,200.00	mg/kg		6.6	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Lead	5.2	mg/kg		1.8	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Lithium	9.4	mg/kg		4	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Manganese	610	mg/kg		3.5	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Molybdenum	0.88	mg/kg	U	0.88	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Nickel	7	mg/kg	J	0.88	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Potassium	58,000.00	mg/kg		180	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Selenium	4.40	mg/kg	U	4.4	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Silver	1.8	mg/kg	U	1.8	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Sodium	1,000.00	mg/kg		66	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Thallium	3.5	mg/kg	U	3.5	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Vanadium	8.4	mg/kg		1.3	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Zinc	64	mg/kg		6.6	T713MT5
BKND-5	WL019	Ash	10/13/05	6010B	Zirconium	3.3	mg/kg	U	3.3	T713MT5
BKND-5	WL019	Ash	10/13/05	7471A	Mercury	0.0053	mg/kg		0.0033	T713MT5
BKND-5	WL019	Ash	10/13/05	8270C SIM	1-Methylnaphthalene	0.041	mg/kg	J	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	2-Methylnaphthalene	0.057	mg/kg	J	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Acenaphthene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Acenaphthylene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Anthracene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Benzo(a)anthracene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Benzo(a)pyrene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Benzo(b)fluoranthene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Benzo(g,h,i)perylene	0.022	mg/kg	UJ	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Benzo(k)fluoranthene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Chrysene	0.0091	mg/kg	J	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Dibenzo(a,h)anthracene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Fluoranthene	0.013	mg/kg	J	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Fluorene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.022	mg/kg	U	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Naphthalene	0.32	mg/kg	J	0.02	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Phenanthrene	0.06	mg/kg	J	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	8270C SIM	Pyrene	0.014	mg/kg	J	0.022	T713PA3
BKND-5	WL019	Ash	10/13/05	350.3 MOD.	Ammonia-NH3	8.6	mg/kg		6.6	T713WC4
BKND-5	WL019	Ash	10/13/05	300	Sulfate	4,000.00	mg/kg		110	T713WC4

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BKND-5	WL019	Ash	10/13/05	9014	Total Cyanide	8.6	mg/kg		2.7	T713WC4
BKND-5	WL019	Ash	10/13/05	SM5540-C MOD.	Surfactants (MBAS)	2.2	mg/kg	J	1.1	T713WC4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,4,6,7,8-HpCDD	2.47	pg/g			T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,4,6,7,8-HpCDF	0.804	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,4,7,8,9-HpCDF	0.116	pg/g	U	0.116	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,4,7,8-HxCDD	0.309	pg/g	U	0.309	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,4,7,8-HxCDF	0.234	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,6,7,8-HxCDD	0.316	pg/g	U	0.316	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,6,7,8-HxCDF	0.177	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,7,8,9-HxCDD	0.314	pg/g	U	0.314	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,7,8,9-HxCDF	0.216	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,7,8-PeCDD	0.0958	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	1,2,3,7,8-PeCDF	0.125	pg/g	UJ	0.125	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	2,3,4,6,7,8-HxCDF	0.2	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	2,3,4,7,8-PeCDF	0.249	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	2,3,7,8-TCDD	0.113	pg/g	U	0.113	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	2,3,7,8-TCDF	0.159	pg/g	J		T713DF4
BZSS05S01	WL026	S	10/14/05	1613	OCDD	19	pg/g			T713DF4
BZSS05S01	WL026	S	10/14/05	1613	OCDF	0.83	pg/g	U	0.83	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	TCDD TEQ (ND = 0)	0.35	pg/g			T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total HpCDD	5.8	pg/g			T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total HpCDF	1.47	pg/g			T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total HxCDD	1.35	pg/g			T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total HxCDF	2.12	pg/g		2.27	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total PeCDD	0.751	pg/g		1.15	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total PeCDF	2.57	pg/g		2.78	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total TCDD	0.232	pg/g		0.418	T713DF4
BZSS05S01	WL026	S	10/14/05	1613	Total TCDF	1.31	pg/g			T713DF4
BZSS05S01	WL026	S	10/14/05	6010B	Aluminum	11,000.00	mg/kg		5	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Antimony	0.81	mg/kg	U	0.81	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Arsenic	4.9	mg/kg		0.6	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Barium	100	mg/kg		0.81	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Beryllium	0.62	mg/kg		0.2	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Boron	3.2	mg/kg		1	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Cadmium	0.62	mg/kg		0.2	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Chromium	17.00	mg/kg		0.3	T713MT3

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BZSS05S01	WL026	S	10/14/05	6010B	Cobalt	5.3	mg/kg		0.3	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Copper	13	mg/kg		0.2	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Iron	17,000.00	mg/kg		1.5	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Lead	17	mg/kg		0.4	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Lithium	20	mg/kg		0.91	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Manganese	340.00	mg/kg		0.81	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Molybdenum	0.34	mg/kg		0.2	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Nickel	12	mg/kg		0.2	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Potassium	5,400.00	mg/kg		40	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Selenium	1	mg/kg	U	1	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Silver	0.4	mg/kg	U	0.4	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Sodium	180	mg/kg		15	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Thallium	1.8	mg/kg		0.81	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Vanadium	32	mg/kg		0.3	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Zinc	67	mg/kg		1.5	T713MT3
BZSS05S01	WL026	S	10/14/05	6010B	Zirconium	1.5	mg/kg	U	1.5	T713MT3
BZSS05S01	WL026	S	10/14/05	7471A	Mercury	0.0031	mg/kg		0.003	T713MT3
BZSS05S01	WL026	S	10/14/05	8270C SIM	1-Methylnaphthalene	0.011	mg/kg	J	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	2-Methylnaphthalene	0.015	mg/kg	J	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Acenaphthene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Acenaphthylene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Anthracene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Benzo(a)anthracene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Benzo(a)pyrene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Benzo(b)fluoranthene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Benzo(g,h,i)perylene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Benzo(k)fluoranthene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Chrysene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Dibenzo(a,h)anthracene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Fluoranthene	0.0083	mg/kg	J	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Fluorene	0.0083	mg/kg	J	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Naphthalene	0.031	mg/kg		0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Phenanthrene	0.02	mg/kg		0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	8270C SIM	Pyrene	0.01	mg/kg	J	0.02	T713PA2
BZSS05S01	WL026	S	10/14/05	350.3 MOD.	Ammonia-NH3	16	mg/kg		6	T713WC2

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BZSS05S01	WL026	S	10/14/05	300	Sulfate	340	mg/kg		10	T713WC2
BZSS05S01	WL026	S	10/14/05	9014	Total Cyanide	0.5	mg/kg	U	0.5	T713WC2
BZSS05S01	WL026	S	10/14/05	SM5540-C MOD.	Surfactants (MBAS)	5	mg/kg	UJ	5	T713WC2
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,4,6,7,8-HpCDD	2.55	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,4,6,7,8-HpCDF	3.06	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,4,7,8,9-HpCDF	0.537	pg/g	U	0.537	T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,4,7,8-HxCDD	0.233	pg/g	U	0.233	T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,4,7,8-HxCDF	1.4	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,6,7,8-HxCDD	0.622	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,6,7,8-HxCDF	0.964	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,7,8,9-HxCDD	0.519	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,7,8,9-HxCDF	0.377	pg/g	U	0.377	T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,7,8-PeCDD	0.424	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	1,2,3,7,8-PeCDF	1.07	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	2,3,4,6,7,8-HxCDF	0.835	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	2,3,4,7,8-PeCDF	1.08	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	2,3,7,8-TCDD	0.23	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	2,3,7,8-TCDF	0.727	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	OCDD	10.2	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	OCDF	1.67	pg/g	J		T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	TCDD TEQ (ND = 0)	1.8	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total HpCDD	5.6	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total HpCDF	4.17	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total HxCDD	7.18	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total HxCDF	10	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total PeCDD	12.70	pg/g		13	T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total PeCDF	16.3	pg/g			T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total TCDD	47.6	pg/g		47.9	T713DF4
BZSS05S01	WL028	Ash	10/14/05	1613	Total TCDF	18.6	pg/g		19	T713DF4
BZSS05S01	WL028	Ash	10/14/05	6010B	Aluminum	4,400.00	mg/kg		10	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Antimony	1.6	mg/kg	U	1.6	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Arsenic	1.2	mg/kg	U	1.2	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Barium	130	mg/kg		1.6	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Beryllium	0.4	mg/kg	U	0.4	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Boron	48	mg/kg		2	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Cadmium	0.40	mg/kg	U	0.4	T713MT3

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
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Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BZSS05S01	WL028	Ash	10/14/05	6010B	Chromium	6.1	mg/kg		0.6	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Cobalt	1.6	mg/kg		0.6	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Copper	15	mg/kg		0.4	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Iron	5,300.00	mg/kg		3	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Lead	33	mg/kg		0.8	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Lithium	7.60	mg/kg		1.8	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Manganese	220	mg/kg		1.6	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Molybdenum	0.4	mg/kg	U	0.4	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Nickel	9.30	mg/kg		0.4	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Potassium	17,000.00	mg/kg		80	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Selenium	2	mg/kg	U	2	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Silver	0.8	mg/kg	U	0.8	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Sodium	1,200.00	mg/kg		30	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Thallium	1.6	mg/kg	U	1.6	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Vanadium	11	mg/kg		0.6	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Zinc	57	mg/kg		3	T713MT3
BZSS05S01	WL028	Ash	10/14/05	6010B	Zirconium	3	mg/kg	U	3	T713MT3
BZSS05S01	WL028	Ash	10/14/05	7471A	Mercury	0.003	mg/kg	U	0.003	T713MT3
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	1-Methylnaphthalene	0.031	mg/kg		0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	2-Methylnaphthalene	0.045	mg/kg		0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Acenaphthene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Acenaphthylene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Anthracene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Benzo(a)anthracene	0.019	mg/kg	J	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Benzo(a)pyrene	0.07	mg/kg		0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Benzo(b)fluoranthene	0.046	mg/kg	J	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Benzo(g,h,i)perylene	0.025	mg/kg	J	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Benzo(k)fluoranthene	0.02	mg/kg	UJ	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Chrysene	0.18	mg/kg		0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Dibenzo(a,h)anthracene	0.02	mg/kg	UJ	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Fluoranthene	0.059	mg/kg		0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Fluorene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.02	mg/kg	U	0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Naphthalene	0.48	mg/kg		0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Phenanthrene	0.15	mg/kg		0.02	T713PA2
BZSS05S01	WL028	Ash	10/14/05	8270C SIM	Pyrene	0.056	mg/kg		0.02	T713PA2

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BZSS05S01	WL028	Ash	10/14/05	350.3 MOD.	Ammonia-NH3	7.6	mg/kg		6	T713WC2
BZSS05S01	WL028	Ash	10/14/05	300	Sulfate	4,000.00	mg/kg		50	T713WC2
BZSS05S01	WL028	Ash	10/14/05	9014	Total Cyanide	5.6	mg/kg		0.5	T713WC2
BZSS05S01	WL028	Ash	10/14/05	SM5540-C MOD.	Surfactants (MBAS)	6.6	mg/kg	J	2	T713WC2
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,4,6,7,8-HpCDD	2.53	pg/g			T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,4,6,7,8-HpCDF	0.738	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,4,7,8,9-HpCDF	0.168	pg/g	U	0.168	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,4,7,8-HxCDD	0.169	pg/g	U	0.169	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,4,7,8-HxCDF	0.177	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,6,7,8-HxCDD	0.275	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,6,7,8-HxCDF	0.144	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,7,8,9-HxCDD	0.284	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,7,8,9-HxCDF	0.175	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,7,8-PeCDD	0.118	pg/g	UJ	0.118	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	1,2,3,7,8-PeCDF	0.118	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	2,3,4,6,7,8-HxCDF	0.201	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	2,3,4,7,8-PeCDF	0.226	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	2,3,7,8-TCDD	0.106	pg/g	U	0.106	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	2,3,7,8-TCDF	0.0831	pg/g	U	0.0831	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	OCDD	18.7	pg/g			T713DF4
BZSS06S01	WL027	S	10/14/05	1613	OCDF	1.16	pg/g	J		T713DF4
BZSS06S01	WL027	S	10/14/05	1613	TCDD TEQ (ND = 0)	0.28	pg/g			T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total HpCDD	6.04	pg/g			T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total HpCDF	1.35	pg/g			T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total HxCDD	1.86	pg/g		2.53	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total HxCDF	2.01	pg/g		2.11	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total PeCDD	0.604	pg/g		1.24	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total PeCDF	2.4	pg/g		2.58	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total TCDD	0.106	pg/g	U	0.106	T713DF4
BZSS06S01	WL027	S	10/14/05	1613	Total TCDF	1.18	pg/g			T713DF4
BZSS06S01	WL027	S	10/14/05	6010B	Aluminum	12,000.00	mg/kg		5.1	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Antimony	0.81	mg/kg	U	0.81	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Arsenic	3.6	mg/kg		0.61	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Barium	82	mg/kg		0.81	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Beryllium	0.45	mg/kg		0.2	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Boron	1.00	mg/kg	U	1	T713MT3

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BZSS06S01	WL027	S	10/14/05	6010B	Cadmium	0.54	mg/kg		0.2	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Chromium	18	mg/kg		0.3	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Cobalt	5.4	mg/kg		0.3	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Copper	8.9	mg/kg		0.2	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Iron	19,000.00	mg/kg		1.5	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Lead	12.00	mg/kg		0.41	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Lithium	28	mg/kg		0.91	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Manganese	350	mg/kg		0.81	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Molybdenum	0.27	mg/kg		0.2	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Nickel	12	mg/kg		0.2	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Potassium	3,900.00	mg/kg		41	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Selenium	1	mg/kg	U	1	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Silver	0.41	mg/kg	U	0.41	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Sodium	86	mg/kg		15	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Thallium	2.2	mg/kg		0.81	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Vanadium	37	mg/kg		0.3	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Zinc	61	mg/kg		1.5	T713MT3
BZSS06S01	WL027	S	10/14/05	6010B	Zirconium	2.4	mg/kg		1.5	T713MT3
BZSS06S01	WL027	S	10/14/05	7471A	Mercury	0.011	mg/kg		0.003	T713MT3
BZSS06S01	WL027	S	10/14/05	8270C SIM	1-Methylnaphthalene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	2-Methylnaphthalene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Acenaphthene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Acenaphthylene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Anthracene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Benzo(a)anthracene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Benzo(a)pyrene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Benzo(b)fluoranthene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Benzo(g,h,i)perylene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Benzo(k)fluoranthene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Chrysene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Dibenzo(a,h)anthracene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Fluoranthene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Fluorene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Naphthalene	0.011	mg/kg	J	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	8270C SIM	Phenanthrene	0.011	mg/kg	J	0.021	T713PA2

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
BZSS06S01	WL027	S	10/14/05	8270C SIM	Pyrene	0.021	mg/kg	U	0.021	T713PA2
BZSS06S01	WL027	S	10/14/05	350.3 MOD.	Ammonia-NH3	5.1	mg/kg	J	6.1	T713WC2
BZSS06S01	WL027	S	10/14/05	300	Sulfate	37	mg/kg		5.1	T713WC2
BZSS06S01	WL027	S	10/14/05	9014	Total Cyanide	0.51	mg/kg	U	0.51	T713WC2
BZSS06S01	WL027	S	10/14/05	SM5540-C MOD.	Surfactants (MBAS)	5.1	mg/kg	UJ	5.1	T713WC2
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,4,6,7,8-HpCDD	23	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,4,6,7,8-HpCDF	3.73	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,4,7,8,9-HpCDF	0.308	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,4,7,8-HxCDD	0.607	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,4,7,8-HxCDF	0.375	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,6,7,8-HxCDD	1.29	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,6,7,8-HxCDF	0.382	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,7,8,9-HxCDD	1.2	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,7,8,9-HxCDF	0.0918	pg/g	U	0.0918	T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,7,8-PeCDD	0.334	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	1,2,3,7,8-PeCDF	0.275	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	2,3,4,6,7,8-HxCDF	0.42	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	2,3,4,7,8-PeCDF	0.418	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	2,3,7,8-TCDD	0.138	pg/g	U	0.138	T713DF6
SGSS01S01	WL016	S	10/13/05	1613	2,3,7,8-TCDF	0.284	pg/g	J		T713DF6
SGSS01S01	WL016	S	10/13/05	1613	OCDD	168	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	OCDF	8.37	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	TCDD TEQ (ND = 0)	1.3	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total HpCDD	46.5	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total HpCDF	9.09	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total HxCDD	12.70	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total HxCDF	6.19	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total PeCDD	3.21	pg/g		4.12	T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total PeCDF	5.08	pg/g		5.51	T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total TCDD	1.19	pg/g			T713DF6
SGSS01S01	WL016	S	10/13/05	1613	Total TCDF	5.23	pg/g		5.46	T713DF6
SGSS01S01	WL016	S	10/13/05	6010B	Aluminum	11,000.00	mg/kg	J	10	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Arsenic	2.7	mg/kg	J	1.2	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Barium	110	mg/kg		1.6	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Beryllium	0.45	mg/kg	J	0.4	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Boron	6.4	mg/kg	J	2	T713MT5

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
SGSS01S01	WL016	S	10/13/05	6010B	Cadmium	0.59	mg/kg	J	0.4	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Chromium	17	mg/kg		0.61	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Cobalt	4.9	mg/kg		0.61	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Copper	11	mg/kg		0.4	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Iron	17,000.00	mg/kg		3	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Lead	24	mg/kg		0.81	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Lithium	20	mg/kg		1.8	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Manganese	310	mg/kg		1.6	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Molybdenum	0.54	mg/kg	J	0.4	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Nickel	21	mg/kg	J	0.4	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Potassium	4,300.00	mg/kg		81	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Selenium	2	mg/kg	U	2	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Silver	0.81	mg/kg	U	0.81	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Sodium	110	mg/kg		30	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Thallium	4.5	mg/kg	J	1.6	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Vanadium	30	mg/kg		0.61	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Zinc	64	mg/kg		3	T713MT5
SGSS01S01	WL016	S	10/13/05	6010B	Zirconium	1.6	mg/kg	J	1.5	T713MT5
SGSS01S01	WL016	S	10/13/05	7471A	Mercury	0.017	mg/kg	J	0.003	T713MT5
SGSS01S01	WL016	S	10/13/05	8270C SIM	1-Methylnaphthalene	0.024	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	2-Methylnaphthalene	0.033	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Acenaphthene	0.012	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Acenaphthylene	0.0099	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Anthracene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Benzo(a)anthracene	0.0093	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Benzo(a)pyrene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Benzo(b)fluoranthene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Benzo(g,h,i)perylene	0.009	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Benzo(k)fluoranthene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Chrysene	0.017	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Dibenzo(a,h)anthracene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Fluoranthene	0.019	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Fluorene	0.02	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Naphthalene	0.064	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	8270C SIM	Phenanthrene	0.038	mg/kg	J	0.02	T713PA3

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
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Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
SGSS01S01	WL016	S	10/13/05	8270C SIM	Pyrene	0.023	mg/kg	J	0.02	T713PA3
SGSS01S01	WL016	S	10/13/05	350.3 MOD.	Ammonia-NH3	17	mg/kg		6	T713WC4
SGSS01S01	WL016	S	10/13/05	300	Sulfate	130	mg/kg		25	T713WC4
SGSS01S01	WL016	S	10/13/05	9014	Total Cyanide	1.3	mg/kg		0.51	T713WC4
SGSS01S01	WL016	S	10/13/05	SM5540-C MOD.	Surfactants (MBAS)	1	mg/kg	UJ	1	T713WC4
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,4,6,7,8-HpCDD	5.87	pg/g			T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,4,6,7,8-HpCDF	0.485	pg/g	J		T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,4,7,8,9-HpCDF	0.218	pg/g	U	0.218	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,4,7,8-HxCDD	0.596	pg/g	U	0.596	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,4,7,8-HxCDF	0.268	pg/g	J		T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,6,7,8-HxCDD	0.613	pg/g	U	0.613	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,6,7,8-HxCDF	0.184	pg/g	J		T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,7,8,9-HxCDD	0.562	pg/g	J		T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,7,8,9-HxCDF	0.148	pg/g	U	0.148	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,7,8-PeCDD	0.288	pg/g	J		T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	1,2,3,7,8-PeCDF	0.295	pg/g	U	0.295	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	2,3,4,6,7,8-HxCDF	0.109	pg/g	U	0.109	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	2,3,4,7,8-PeCDF	0.286	pg/g	J		T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	2,3,7,8-TCDD	0.175	pg/g	U	0.175	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	2,3,7,8-TCDF	0.212	pg/g	J		T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	OCDD	23.8	pg/g			T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	OCDF	0.661	pg/g	UJ	0.661	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	TCDD TEQ (ND = 0)	0.62	pg/g			T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total HpCDD	16	pg/g			T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total HpCDF	1.03	pg/g			T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total HxCDD	7.42	pg/g			T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total HxCDF	1.36	pg/g			T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total PeCDD	3.55	pg/g		4.41	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total PeCDF	1.46	pg/g		1.85	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total TCDD	0.22	pg/g	U	0.22	T713DF6
SGSS01S01	WL017	Ash	10/13/05	1613	Total TCDF	2.16	pg/g		2.4	T713DF6
SGSS01S01	WL017	Ash	10/13/05	6010B	Aluminum	12,000.00	mg/kg	J	10	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Arsenic	2.6	mg/kg	J	1.2	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Barium	240.00	mg/kg		1.6	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Beryllium	0.41	mg/kg		0.41	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Boron	57	mg/kg		2	T713MT5

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
SGSS01S01	WL017	Ash	10/13/05	6010B	Cadmium	1.1	mg/kg		0.41	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Chromium	18	mg/kg		0.61	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Cobalt	5.4	mg/kg		0.61	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Copper	30.00	mg/kg		0.41	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Iron	17,000.00	mg/kg		3	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Lead	64	mg/kg		0.81	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Lithium	16	mg/kg		1.8	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Manganese	540	mg/kg		1.6	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Molybdenum	1	mg/kg		0.41	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Nickel	21	mg/kg	J	0.41	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Potassium	9,400.00	mg/kg		81	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Selenium	2	mg/kg	U	2	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Silver	0.81	mg/kg	U	0.81	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Sodium	430	mg/kg		30	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Thallium	3.2	mg/kg		1.6	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Vanadium	35	mg/kg		0.61	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Zinc	190	mg/kg		3	T713MT5
SGSS01S01	WL017	Ash	10/13/05	6010B	Zirconium	2.8	mg/kg		1.5	T713MT5
SGSS01S01	WL017	Ash	10/13/05	7471A	Mercury	0.058	mg/kg		0.003	T713MT5
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	1-Methylnaphthalene	0.022	mg/kg	J	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	2-Methylnaphthalene	0.033	mg/kg	J	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Acenaphthene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Acenaphthylene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Anthracene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Benzo(a)anthracene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Benzo(a)pyrene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Benzo(b)fluoranthene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Benzo(g,h,i)perylene	0.02	mg/kg	UJ	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Benzo(k)fluoranthene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Chrysene	0.011	mg/kg	J	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Dibenzo(a,h)anthracene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Fluoranthene	0.012	mg/kg	J	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Fluorene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Indeno(1,2,3-cd)pyrene	0.02	mg/kg	U	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Naphthalene	0.3	mg/kg	J	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Phenanthrene	0.054	mg/kg	J	0.02	T713PA3

TABLE D-1
Post-Topanga Fire
Soil and Ash Background Sample Results
Santa Susana Field Laboratory

Sample Identification	EPA Identification	Matrix	Date Collected	Laboratory Method	Analyte	Concentration	Units	Data Qualifier	Detection Limit	Validation Report Number
SGSS01S01	WL017	Ash	10/13/05	8270C SIM	Pyrene	0.011	mg/kg	J	0.02	T713PA3
SGSS01S01	WL017	Ash	10/13/05	350.3 MOD.	Ammonia-NH3	14	mg/kg		6.1	T713WC4
SGSS01S01	WL017	Ash	10/13/05	300	Sulfate	5800	mg/kg		100	T713WC4
SGSS01S01	WL017	Ash	10/13/05	9014	Total Cyanide	4.9	mg/kg		0.51	T713WC4
SGSS01S01	WL017	Ash	10/13/05	SM5540-C MOD.	Surfactants (MBAS)	1.8	mg/kg	J	1	T713WC4

Notes

1. Post-Topanga Fire soil and ash background samples were collected at previously sampled background sample locations to assess the impact of the Topanga Fire of September 2005 on ambient conditions at the SSFL.
2. All soil samples were collected between 0 to 6" below ground surface.
3. Data validation reports are provided in Attachment D-2 of this report.
4. Validation Report Number refers to the validated laboratory report. See Attachment D-1 of this report.
5. Concentrations are reported for named dioxin or furan isomer detects in the concentration column.
6. When the named dioxin or furan isomer is a nondetect ("U"), the numerical value in the detection limit column reflects a sample-specific detection limit calculated for that isomer.
7. When the named dioxin or furan isomer is an estimated nondetect ("UJ"), the numerical value in the concentration and detection limit columns reflects the estimated maximum possible concentration for that isomer because the identification criteria were not met for that sample for that isomer.
8. For the dioxin and furan "total" concentrations, the value in the concentration column listed as detected is the concentration of isomers meeting the identification criteria.
9. The value in the detection limit column is the estimated maximum possible concentration, which includes the concentration meeting the identification criteria, plus the concentration which does not meet the identification criteria. For nondetect totals, the detection limit is the sample-specific calculated detection limit for that group of isomers.

U = non detect
UJ = estimated non detect

mg/kg = milligrams per kilogram
pg/g = picograms per gram

SIM = selected ion monitoring
MBAS = methylene blue active substances

TABLE D-2A
Comparison of Post-Topanga Fire Metals Data to Colocated Pre-Topanga Fire Soil Background Data
Santa Susana Field Laboratory

Chemical	BCSS09S01						BKND-1				BKND-5					BZSS05S01					BZSS06S01					SGSS01S01					Post-Topanga Fire Soil and Ash Background Data Set Maximum Detected Concentration			Post-Fire Reference Soil and Ash Data Set Maximum Detected Concentrations		California Benchmark Soils (Kearney study, March 1996)			California Air Force Bases (Hunter et al, 2005)	
Analyte	Soil Pre fire		Soil Post fire		Ash Post fire		Soil Pre fire		Soil Post fire		Soil Pre fire		Soil Post fire		Ash Post fire	Soil Pre fire		Soil Post fire		Ash Post fire	Soil Pre fire		Soil Post fire		Ash Post fire	Soil Pre fire		Soil Post fire		Ash Post fire	Pre Fire Soil	Post Fire Soil	Post Fire Ash	Max Soil	Max Ash	Mean	Min	Max	95th	99th
Aluminum	5600		**9900**		**13000**		14000		12000	J	10000		9800	J	3400	J	10000		**11000**		4400		12400		12000		12000		11000	J	12000	J	14000	12000	13000	n.a.	n.a.	73,000	30,000	106,000	23,000	31,300
Antimony	0.18	UJ	0.81	U	1.7	U	1	U	1.7	R	1	U	1.7	R	3.5	R	0.66	UJ	0.81	U	1.6	U	1.03	U	0.81	U	0.982	U	1.6	R	1.6	R	--	--	--	0.19	0.69	0.6	0.15	1.95	12.5	25
Arsenic	9		**11**		**3.9**		3.9		3.4		3.2		**3.9**		2.7	U	4.1		**4.9**		1.2	U	1.03	U	**3.6**		0.982	U	**2.7**		**2.6**	J	9	11	3.9	13	10	3.5	0.6	11	12.7	23.2
Barium	36		**69**		**300**		54		**59**		77.2		76		**360**		66		**100**		**130**		90.4		82		106		**110**		**240**		106	110	360	230	630	509	133	1,400	320	584
Beryllium	0.5	U	**0.54**		0.41	U	0.28		**0.54**		0.34		**0.47**		0.88	U	0.48		**0.62**		0.4	U	0.468		0.45		0.463		0.45		0.41		0.48	0.62	0.41	0.8	1.1	1.28	0.25	2.7	1.1	5.6
Boron	3	UJ	**3.5**		**160**		8	J	6.6		2.7	UJ	**6**		**85**		3.6	UJ	**3.2**		**48**		1.37	U	1	U	1.31	U	**6.4**		**57**		8	6.6	160	14	330	19	1	74	140	201
Cadmium	1	U	**0.47**		0.41	U	0.25		**0.57**		0.25		**0.48**		0.88	U	0.39		**0.62**		0.4	U	0.685		0.54		0.655	U	**0.59**		**1.1**		0.685	0.62	1.1	0.52	1.5	0.36	0.05	1.7	2.3	7.7
Chromium	9		**15**		**15**		28.3		16		13.9		12		2.3		15		**17**		6.1		18.4		18		18.3		17		18		28.3	18	18	23	35	122	23	1,579	49.4	100
Cobalt	4		**4.5**		**4.5**		6.1		**6.3**		5		4.1		1.6		4.9		**5.3**		1.6		8.1		5.4		7.59		4.9		5.4		8.1	6.3	5.4	13	12	14.9	2.7	46.9	22	35.9
Copper	6		**9.2**		**64**		7.3		**12**		8		8		**25**		11		**13**		**15**		7.99		**8.9**		7.77		**11**		**30**		11	13	64	30	84	28.7	9.1	96.4	53.3	157
Iron	25000		16000		12000		20000		19000		15000		15000		4200		14000		**17000**		5300		17000		**19000**		18000		17000		17000		25000	19000	17000	32000	33000	37,000	10,000	87,000	36,100	49,400
Lead	7		**10**		**9.7**		18.6		9.5		21.5		**27**		5.2		14		**17**		**33**		12.8		12		10.9		**24**		**64**		21.5	27	64	14	42	23.9	12.4	97.1	25	148
Lithium	27	J	17		14		27	J	18		21	J	19		9.4		15	J	**20**		7.6		21	J	**28**		23	J	20		16		27	28	16	n.a.	n.a.	23	4	90	n.a.	n.a.
Manganese	300		260		**520**		370		**390**		280		270		**610**		310		**340**		220		310		**350**		320		310		**540**		370	390	610	1700	1400	646	253	1,687	823	1,600
Mercury	0.032		0.003	UJ	0.0038		0.1	U	**0.011**		0.1	U	**0.0091**		0.0053		0.02		0.0031		0.003	U	0.115	U	**0.011**		0.11	U	**0.017**		**0.058**		0.032	0.017	0.058	0.012	0.032	0.26	0.05	0.9	0.3	0.6
Molybdenum	0.76		0.42		**1.7**		0.4		0.41	U	0.38		0.44	U	0.88	U	0.62		0.34		0.4	U	0.343	U	**0.27**		0.328	U	**0.54**		**1**		0.76	0.54	1.7	n.a.	n.a.	1.3	0.1	9.6	20	44
Nickel	7		**11**		**24**		9.7		**14**	J	9.9		**11**	J	7	J	11		**12**		9.3		12.2		12		13.9		**21**	J	**21**	J	13.9	21	24	18	37	57	9	509	41.5	85.4
Potassium	4700		3700		**53000**		3500		3400		3200		**3300**		**58000**		2600		**5400**		**17000**		2700		**3900**		3800		**4300**		**9400**		4700	5400	58000	n.a.	n.a.	17,300	2,100	30,000	n.a.	n.a.
Selenium	0.45		1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.2	U	4.4	U	0.45	UJ	1	U	2	U	1.03	U	1	U	0.982	U	2	U	2	U	0.45	--	--	3.2	3.8	0.058	0.015	0.43	11	25
Silver	1	U	0.4	U	0.83	U	0.21	U	0.83	U	0.21	U	0.87	U	1.8	U	0.19	U	0.4	U	0.8	U	0.343	U	0.41	U	0.328	U	0.81	U	0.81	U	--	--	--	0.061	0.23	0.8	0.1	8.3	2.1	6.1
Sodium	68		**150**		**3100**		66	J	64		51	J	**69**		**1000**		76	UJ	**180**		**1200**		65	UJ	**86**		53	J	**110**		**430**		68	180	3100	n.a.	n.a.	15,838	5,580	73,400	1,660	3,980
Thallium	0.34	UJ	**1.9**		1.7	U	0.33		**3.3**		0.36		**3.3**		3.5	U	0.3	UJ	**1.8**		1.6	U	0.29	UJ	**2.2**		0.2	UJ	**4.5**		**3.2**		0.36	4.5	3.2	0.44	0.34	0.56	0.17	1.1	25	173.5
Vanadium	19		**27**		**28**		44.5		27		21.7		**23**		8.4		26		**32**		**11**		38.4		37		34.6		30		**35**		44.5	37	35	80	71	112	39	288	88.3	126
Zinc	35	J	**53**		**150**		47.4		**51**		62.4		55		**64**		44		**67**		**57**		60.6		**61**		54.2		**64**		**190**		62.4	67	190	100	350	149	88	236	104	307
Zirconium	2.6		1.6		**4.1**		3.7	J	1.6	U	5.9	J	1.7		3.3	U	2.3	J	1.5	U	3	U	2.3	J	**2.4**		3.2	J	1.6		2.8		5.9	2.4	4.1	n.a.	n.a.	93	19	610	n.a.	n.a.

Notes

1. Pre-fire soil data is part of the approved soil background data set for metals samples collected at approved background sample locations in or around the SSFL.
   This data set was presented in the Soil Background Report (MWH 2005a), and is used for characterization and risk assessment evaluation of onsite investigational units for the SSFL RCRA program.
2. Post-fire soil and ash background samples were collected on October 13th and 14th, 2005 at previously sampled background sample locations to assess the impact of the Topanga Fire of September 2005 on ambient conditions at the SSFL.
3. All soil samples were collected between 0 to 6" below ground surface.
4. Sample BKND-1 is located outside of the Topanga Fire burn area footprint, and thick ash deposits not observed or sampled. Fine ash deposition at this location is likely given proximity to fire footprints.
5. No ash samples were collected near BKND-1 and BZSS06S01.
6. "Post-Fire Reference Soil and Ash Data Set" maximums includes soil and ash samples collected after the Topanga Fire. The reference data was collected from locations outsi the SSFL, and from onsite locations Upstream-001 and Upstream-002. Two of the reference samples were collected from locations in the Burbank "Harvard" Fire burn area in Burbank, CA. None of the reference data was collected from approved background locations. Their results are presented for comparison purposes only. See Attachment D-3 of this report for individual sample results and locations.

All metals values in milligrams per kilogram (mg/kg)
"--" indicates that there were no detected concentrations for this constituent
n.a. = no results available for this metal.
Bold indicates post-fire soil or ash concentration exceeded colocated pre-fire soil concentrations

Data Qualifiers
J = estimated value
U = non detect
UJ = estimated non detect
R = rejected value

Example:

Soil Pre Fire	
5.3	J

Sample Result
Data Qualifier
Matrix & Sequence of Sampling Relative to the Topanga Fire

TABLE D-2B
Comparison of Post Topanga Fire Dioxins Data to Colocated Pre-Topanga Fire Soil Background Data
Santa Susana Field Laboratory

Chemical	BCSS09S01						BKND-1				BKND-5						BZSS05S01						BZSS06S01						SGSS01S01						Post-Topanga Fire Soil and Ash Background Data Set Maximum Detected Concentration			Post-Fire Reference Soil and Ash Data Set Maximum Detected Concentrations	
Analyte	Soil Pre fire		Soil Post fire		Ash Post fire		Soil Pre fire		Soil Post fire		Soil Pre fire		Soil Post fire		Ash Post fire		Soil Pre fire		Soil Post fire		Ash Post fire		Soil Pre fire		Soil Post fire		Ash Post fire		Soil Pre fire		Soil Post fire		Ash Post fire		Pre Fire Soil	Post Fire Soil	Post Fire Ash	Max Soil	Max Ash
1,2,3,4,6,7,8-HPCDD	5	U	0.686	UJ	**3.27**		7.4		**3.4**		8.8	J	**20.4**		**100**		3.7	UJ	**2.47**		**2.55**	J	1.7	UJ	**2.53**				13		**23**		5.87		13	23	100	5.27	95.1
1,2,3,4,6,7,8-HPCDF	5	U	0.147	UJ	**0.32**	J	1.7	UJ	**0.561**	J	2.4	UJ	**3.16**		**3.45**	J	0.8	J	**0.804**	J	**3.06**		0.49		**0.738**	J			2.5		**3.73**		0.485	J	2.5	3.73	3.45	0.431	1.83
1,2,3,4,7,8,9-HPCDF	5	U	0.0864	U	0.152	U	0.19	UJ	0.0839	U	1.3	U	**0.331**	J	**0.491**	J	0.086	U	0.116	U	0.537	U	0.062	U	0.168	U			0.25	U	**0.308**	J	0.218	U	--	0.331	0.491	--	--
1,2,3,4,7,8-HXCDD	5	U	0.118	U	0.328	U	0.41	U	**0.192**	J	0.18	J	**0.449**	J	**0.916**	J	0.13	U	0.309	U	0.233	U	0.21	U	0.169	U			0.34	J	**0.607**	J	0.596	U	0.34	0.607	0.916	0.286	6.67
1,2,3,4,7,8-HXCDF	5	U	**0.154**	J	**0.167**	J	0.35	J	0.135	J	0.57	UJ	0.287	UJ	0.241	UJ	0.16	U	**0.234**	J	**1.4**	J	0.11	U	**0.177**	J			0.47		0.375	J	0.268	J	0.47	0.375	1.4	0.079	0.357
1,2,3,6,7,8-HXCDD	5	U	0.115	U	0.303	U	0.43	J	0.174	J	0.74	J	**0.95**	J	**5.57**		0.84	J	0.316	U	0.622	J	0.22	U	**0.275**	J			0.77	J	**1.29**	J	0.613	U	0.84	1.29	5.57	0.535	10.2
1,2,3,6,7,8-HXCDF	5	U	**0.133**	J	**0.148**	J	0.44	U	**0.0912**	J	0.71	U	**0.27**	J	0.195	UJ	0.16	U	**0.177**	J	**0.964**	J	0.11	U	**0.144**	J			0.3		**0.382**	J	0.184	J	0.3	0.382	0.964	0.102	0.379
1,2,3,7,8,9-HXCDD	5	U	0.117	U	**0.378**	J	0.48	J	0.0894	U	0.7	J	**0.888**	J	**3.35**	J	1	J	0.314	U	0.519	J	0.2	U	**0.284**	J			0.64	J	**1.2**	J	0.562	J	1	1.2	3.35	0.565	12.4
1,2,3,7,8,9-HXCDF	5	U	0.0905	U	0.0797	U	0.23	U	0.0588	U	0.1	J	0.13	UJ	0.0764	U	0.1	U	**0.216**	J	0.377	U	0.088	U	**0.175**	J			0.14	U	0.0918	U	0.148	U	0.1	0.216	0.0797	--	0.125
1,2,3,7,8-PECDD	5	U	0.0826	U	**0.289**	J	0.12	J	0.0646	U	0.46	U	**0.279**	J	**0.749**	J	0.4	U	**0.0958**	J	**0.424**	J	0.31	U	0.118	UJ			0.43	U	**0.334**	J	**0.288**	J	0.12	0.334	0.749	0.379	9.61
1,2,3,7,8-PECDF	5	U	0.291	UJ	**0.206**	J	0.21	J	0.0811	UJ	0.45	J	0.178	J	0.159	U	0.18	U	0.125	UJ	**1.07**	J	0.31	U	0.118	J			0.22	U	**0.275**	J	0.295	U	0.45	0.275	1.07	0	0.209
2,3,4,6,7,8-HXCDF	5	U	0.0588	U	**0.115**	J	5.1	U	0.0852	UJ	5.2	U	**0.337**	J	**0.281**	J	0.14	U	**0.2**	J	**0.835**	J	0.09	U	**0.201**	J			0.45		0.42	J	0.109	U	0.45	0.42	0.835	0.0752	0.433
2,3,4,7,8-PECDF	5	U	**0.197**	J	0.174	UJ	0.33	UJ	0.137	UJ	0.44	J	0.293	J	0.139	U	0.16	U	**0.249**	J	**1.08**	J	0.28	U	0.226	J			0.54		0.418	J	0.286	J	0.54	0.418	1.08	0.137	0.306
2,3,7,8-TCDD	0.99	U	0.109	U	**0.134**	J	0.57	U	0.0622	U	0.52	U	0.087	U	**0.363**	J	0.16	U	0.113	U	**0.23**	J	0.15	U	0.106	U			0.24	U	0.138	U	0.175	U	--	--	0.363	--	3.57
2,3,7,8-TCDF	0.99	U	**0.279**	J	**0.389**	J	0.72	J	0.163	J	1.4		0.301	UJ	0.114	U	0.15	U	**0.159**	J	**0.727**		0.18	U	0.0831	U			0.34	J	0.284	J	0.212	J	1.4	0.284	0.727	0.381	0.361
OCDD	9.9	U	**4.23**	J	**9.35**		74.6		48		110		**211**		**470**		25		19		10.2		15		**18.7**				140		**168**		23.8		140	211	470	20.6	232
OCDF	9.9	U	0.325	U	0.469	U	3.2	J	0.97	J	3.9	J	**9.83**		**17**		1.4	J	0.83	U	**1.67**	J	0.96		**1.16**	J			8.1		**8.37**		0.661	UJ	8.1	9.83	17	0.98	4.63
TEQ [(a)]	0		**0.16**		**0.59**		0.41		0.12		0.65		**0.98**		**3.2**		0.19		**0.35**		**1.8**		0.0065		**0.28**				0.77		**1.3**		**0.62**		0.77	1.3	3.2	0.57	17.4

(a) TEQ values were calculated using detected congener concentrations and WHO toxicity equivalency factors. For comparison, western United States dioxin TEQs typically range up to 2 pg/g or parts per trillion.

Notes

1. Pre-fire soil data is part of the approved soil background data set for dioxin/furan samples collected at approved background sample locations in or around the SSFL. This data set was presented in the Soil Background Report (MWH 2005a), and is used for characterization and risk assessment evaluation of onsite investigational units for the SSFL RCRA program.
2. Post-fire soil and ash background samples were collected on October 13th and 14th, 2005 at previously sampled background sample locations to assess the impact of the Topanga Fire of September 2005 on ambient conditions at the SSFL.
3. All soil samples were collected between 0 to 6" below ground surface.
4. Dioxin values do not include total dioxins or furans.
4. Sample BKND-1 is located outside of the Topanga Fire burn area footprint, and thick ash deposits not observed or sampled. Fine ash deposition at this location is likely given proximity to fire footprints.
6. No ash samples were collected near BKND-1 and BZSS06S01.
7. "Post-Fire Reference Soil and Ash Data Set" maximums includes soil and ash samples collected after the Topanga Fire. The reference data was collected from locations outside the SSFL, and from onsite locations Upstream-001 and Upstream-002. Two of the reference samples were collected from locations in the Burbank "Harvard" Fire burn area in Burbank, CA. None of the reference data was collected from approved background locations. Their results are presented for comparison purposes only. See Attachment D-3 of this report for individual sample results and locations.

All dioxin values in picograms per gram (pg/g)
"--" indicates that there were no detected concentrations for this constituent
Bold indicates post-fire soil or ash concentration exceeded colocated pre-fire soil concentration
TEQ = Toxicity Equivalent

Data Qualifiers
J = estimated value
U = non detect
UJ = estimated non detect

Example:

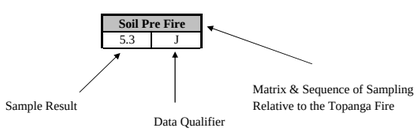


TABLE D-3A (1 of 1)
Comparison of Post-Topanga Fire Background Metals Data
With Approved Soil Background Metals Data Set
Santa Susana Field Laboratory

	Pre-Topanga Fire Soil Background Data Set			Post-Topanga Fire Soil Sample Results				Post-Topanga Fire Ash Sample Results				Detected Concentration Range (mg/kg)				
Chemical	**Percent Frequency of Detection**	**Number of Detects**	**Comparison Level**	**Percent Frequency of Detection**	**Number of Detects**	**Maximum Detected Value (mg/kg)**	**Post-to Pre-Topanga Fire Maximum Concentration Ratios [(a)]**	**Percent Frequency of Detection**	**Number of Detects**	**Maximum Detected Value (mg/kg)**	**Post-to Pre-Topanga Fire Maximum Concentration Ratios [(a)]**	**Pre-Topanga Fire Soil Background Data Set**	**Post-Topanga Fire Soil Samples**	**Post-Topanga Fire Ash Samples**	**Post-Fire Reference Soil Samples**	**Post-Fire Reference Ash Samples**
Aluminum	100	38	20,000	100	6	12000	0.6	100	4	13000	0.65	5600 - 20000	9800 - 12000	3400 - 13000	--	--
Antimony	35	13	8.7	0	0	--	--	50	2	3.5	0.40	2.5 - 8.7	--	--	0.03 - 0.19	0.064 - 0.69
Arsenic	87	33	15	100	6	11	0.73	50	2	3.9	0.26	1.7 - 16	2.7 - 11	2.6 - 3.9	0.89 - 13	2.3 - 10
Barium	100	38	140	100	6	110	0.79	100	4	**360**	2.57	36 - 140	59 - 110	130 - 360	42 - 230	180 - 630
Beryllium	95	36	1.1	100	6	0.62	0.56	25	1	0.41	0.37	0.28 - 1.1	0.45 - 0.62	0.41 - 0.41	0.2 - 0.8	0.41 - 1.1
Boron	32	12	9.7	83	5	6.6	0.68	100	4	**160**	16.49	2.3 - 9.7	3.2 - 6.6	48 - 160	1.8 - 14	58 - 330
Cadmium	24	9	1	100	6	0.62	0.62	25	1	**1.1**	1.10	0.22 - 1	0.47 - 0.62	1.1 - 1.1	0.033 - 0.52	0.079 - 1.5
Chromium	100	38	37	100	6	18	0.49	100	4	18	0.49	8.8 - 36.8	12 - 18	2.3 - 18	3.6 - 23	3.8 - 35
Cobalt	100	38	21	100	6	6.3	0.30	100	4	5.4	0.26	2.9 - 21	4.1 - 6.3	1.6 - 5.4	3.1 - 13	1.6 - 12
Copper	100	38	29	100	6	13	0.45	100	4	**64**	2.21	3.8 - 30	8 - 13	15 - 64	4.7 - 30	21 - 84
Iron	100	37	28,000	100	6	19000	0.68	100	4	17000	0.61	12000 - 28000	15000 - 19000	4200 - 17000	9300 - 32000	5700 - 33000
Lead	100	38	34	100	6	27	0.79	100	4	**64**	1.88	4.2 - 34	9.5 - 27	5.2 - 64	2.4 - 14	9.4 - 42
Lithium	100	37	37	100	6	28	0.76	100	4	16	0.43	12 - 37	17 - 28	7.6 - 16	--	--
Manganese	100	37	495	100	6	390	0.79	100	4	**610**	1.23	190 - 500	260 - 390	220 - 610	180 - 1700	270 - 1400
Mercury	59	22	0.09	83	5	0.017	0.19	75	3	0.058	0.64	0.019 - 0.25	0.0031 - 0.017	0.0038 - 0.058	0.012 - 0.012	0.0035 - 0.032
Molybdenum	65	24	5.3	67	4	0.54	0.10	50	2	1.7	0.32	0.35 - 5.4	0.27 - 0.54	1 - 1.7	--	--
Nickel	100	38	29	100	6	21	0.72	100	4	24	0.83	5.2 - 29	11 - 21	7 - 24	3.1 - 18	4.5 - 37
Potassium	100	37	6,400	100	6	5400	0.84	100	4	**58000**	9.06	1800 - 6400	3300 - 5400	9400 - 58000	--	--
Selenium	43	16	0.655	0	0	--	--	--	--	--	--	0.19 - 0.72	--	--	0.23 - 3.2	0.25 - 3.8
Silver	5	2	0.79	0	0	--	--	--	--	--	--	0.79 - 1.1	--	--	0.029 - 0.061	0.075 - 0.23
Sodium	95	35	110	100	6	**180**	1.64	100	4	**3100**	28.18	45 - 110	64 - 180	430 - 3100	--	--
Thallium	35	13	0.46	100	6	**4.5**	9.78	25	1	**3.2**	6.96	0.13 - 0.46	1.8 - 4.5	3.2 - 3.2	0.13 - 0.44	0.16 - 0.34
Vanadium	100	38	62	100	6	37	0.60	100	4	35	0.56	14.7 - 62	23 - 37	8.4 - 35	14 - 80	11 - 71
Zinc	100	38	110	100	6	67	0.61	100	4	**190**	1.73	32 - 110	51 - 67	57 - 190	30 - 100	47 - 350
Zirconium	81	30	8.6	67	4	2.4	0.28	50	2	4.1	0.48	1.6 - 8.6	1.6 - 2.4	2.8 - 4.1	--	--

(a) Ratio is a comparison of results from 6 post-Topanga Fire background sampling locations to the results from the 29 pre-Topanga Fire background sampling locations included in the approved soil background data set.

Notes

1. Pre-fire summaries are based on the approved soil background data set for metals and dioxin/furan samples that was developed for samples collected at approved background sample locations in or around the SSFL. This data set was presented in the Soil Background Report (MWH 2005a), and is used for characterization and risk assessment evaluation of onsite investigational units for the SSFL RCRA program. SSFL RCRA program.
2. Post-fire soil and ash background samples were collected on October 13th and 14th, 2005 at previously sampled background sample locations to assess the impact of the Topanga Fire of September 2005 on ambient conditions at the SSFL.
3. All soil samples were collected between 0 to 6" below ground surface.
4. Post-Fire reference data includes results from soil and ash samples collected after the Topanga Fire. The reference data was collected from locations outside the SSFL, and from onsite locations Upstream-001 and Upstream-002. Two of the reference samples were collected from locations in the Burbank "Harvard" Fire burn area in Burbank, CA. None of the reference data was collected from approved background locations. Their results are presented for comparison purposes only. See Attachment D-3 of this report for individual sample results and locations.

mg/kg = milligrams per kilogram
"--" indicates that there were no detected concentrations for this metal
Bold indicates post-Topanga Fire soil maximum concentration exceeded the soil background comparison value level

TABLE D-3B (1 of 1)
Comparison of Post-Topanga Fire Background Dioxins Data
With Approved Soil Background Dioxins Data Set
Santa Susana Field Laboratory

	Pre-Topanga Fire Soil Background Data Set			Post-Topanga Fire Soil Sample Results				Post-Topanga Fire Ash Sample Results				Detected Concentration Range (pg/g)				
Chemical	**Percent Frequency of Detection**	**Number of Detects**	**Comparison Level**	**Percent Frequency of Detection**	**Number of Detects**	**Maximum Detected Value (pg/g)**	**Post-to Pre-Topanga Fire Maximum Concentration Ratios [(a)]**	**Percent Frequency of Detection**	**Number of Detects**	**Maximum Detected Value (pg/g)**	**Post-to Pre-Topanga Fire Maximum Concentration Ratios [(a)]**	**Pre-Topanga Fire Soil Background Data Set**	**Post-Topanga Fire Soil Samples**	**Post-Topanga Fire Ash Samples**	**Post-Fire Reference Soil Samples**	**Post-Fire Reference Ash Samples**
1,2,3,4,6,7,8-HpCDD	50	8	13	83	5	**23**	1.77	100	4	**100**	7.69	7.4 - 13	2.47 - 23	2.55 - 100	0.355 - 5.27	0.581 - 95.1
1,2,3,4,6,7,8-HpCDF	31	5	2.5	83	5	**3.73**	1.49	100	4	**3.45**	1.38	0.49 - 2.5	0.561 - 3.73	0.32 - 3.45	0.324 - 0.431	0.365 - 1.83
1,2,3,4,7,8,9-HpCDF	6	1	0.19	33	2	**0.331**	1.74	25	1	**0.491**	2.58	0.19 - 0.19	0.308 - 0.331	0.491 - 0.491	--	--
1,2,3,4,7,8-HxCDD	25	4	0.34	50	3	**0.607**	1.79	25	1	**0.916**	2.69	0.18 - 0.34	0.192 - 0.607	0.916 - 0.916	0.286 - 0.286	0.129 - 6.67
1,2,3,4,7,8-HxCDF	38	6	0.73	83	5	0.375	0.51	75	3	**1.4**	1.92	0.28 - 0.73	0.135 - 0.375	0.167 - 1.4	0.079 - 0.079	0.11 - 0.357
1,2,3,6,7,8-HxCDD	44	7	0.95	67	4	**1.29**	1.36	50	2	**5.57**	5.86	0.43 - 0.95	0.174 - 1.29	0.622 - 5.57	0.145 - 0.535	0.264 - 10.2
1,2,3,6,7,8-HxCDF	6	1	0.3	100	6	**0.382**	1.27	75	3	**0.964**	3.21	0.3 - 0.3	0.0912 - 0.382	0.148 - 0.964	0.0668 - 0.102	0.243 - 0.379
1,2,3,7,8,9-HxCDD	56	9	1.1	50	3	**1.2**	1.09	100	4	**3.35**	3.05	0.48 - 1.1	0.284 - 1.2	0.378 - 3.35	0.148 - 0.565	0.262 - 12.4
1,2,3,7,8,9-HxCDF	13	2	0.43	33	2	0.216	0.50	--	--	--	--	0.1 - 0.43	0.175 - 0.216	--	--	0.125 - 0.125
1,2,3,7,8-PeCDD	13	2	0.18	50	3	**0.334**	1.86	100	4	**0.749**	4.16	0.12 - 0.18	0.0958 - 0.334	0.288 - 0.749	0.379 - 0.379	0.235 - 9.61
1,2,3,7,8-PeCDF	25	4	0.59	50	3	0.275	0.47	50	2	**1.07**	1.81	0.21 - 0.59	0.118 - 0.275	0.206 - 1.07	--	0.198 - 0.209
2,3,4,6,7,8-HxCDF	6	1	0.45	67	4	0.42	0.93	75	3	**0.835**	1.86	0.45 - 0.45	0.2 - 0.42	0.115 - 0.835	0.0752 - 0.0752	0.0883 - 0.433
2,3,4,7,8-PeCDF	38	6	0.64	83	5	0.418	0.65	50	2	**1.08**	1.69	0.17 - 0.64	0.197 - 0.418	0.286 - 1.08	0.0852 - 0.137	0.173 - 0.306
2,3,7,8-TCDD	0	0	0.5 [(b)]	0	0	--	--	75	3	0.363	0.73	--	--	0.134 - 0.363	--	0.303 - 3.57
2,3,7,8-TCDF	38	6	1.80	67	4	0.284	0.16	75	3	0.727	0.40	0.29 - 1.8	0.159 - 0.284	0.212 - 0.727	0.151 - 0.381	0.361 - 0.361
OCDD	81	13	140	100	6	**211**	1.51	100	4	**470**	3.36	13 - 140	4.23 - 211	9.35 - 470	2.4 - 20.6	2.33 - 232
OCDF	63	10	8.1	67	4	**9.83**	1.21	50	2	**17**	2.1	0.96 - 8.1	0.97 - 9.83	1.67 - 17	0.331 - 0.98	2.28 - 4.63

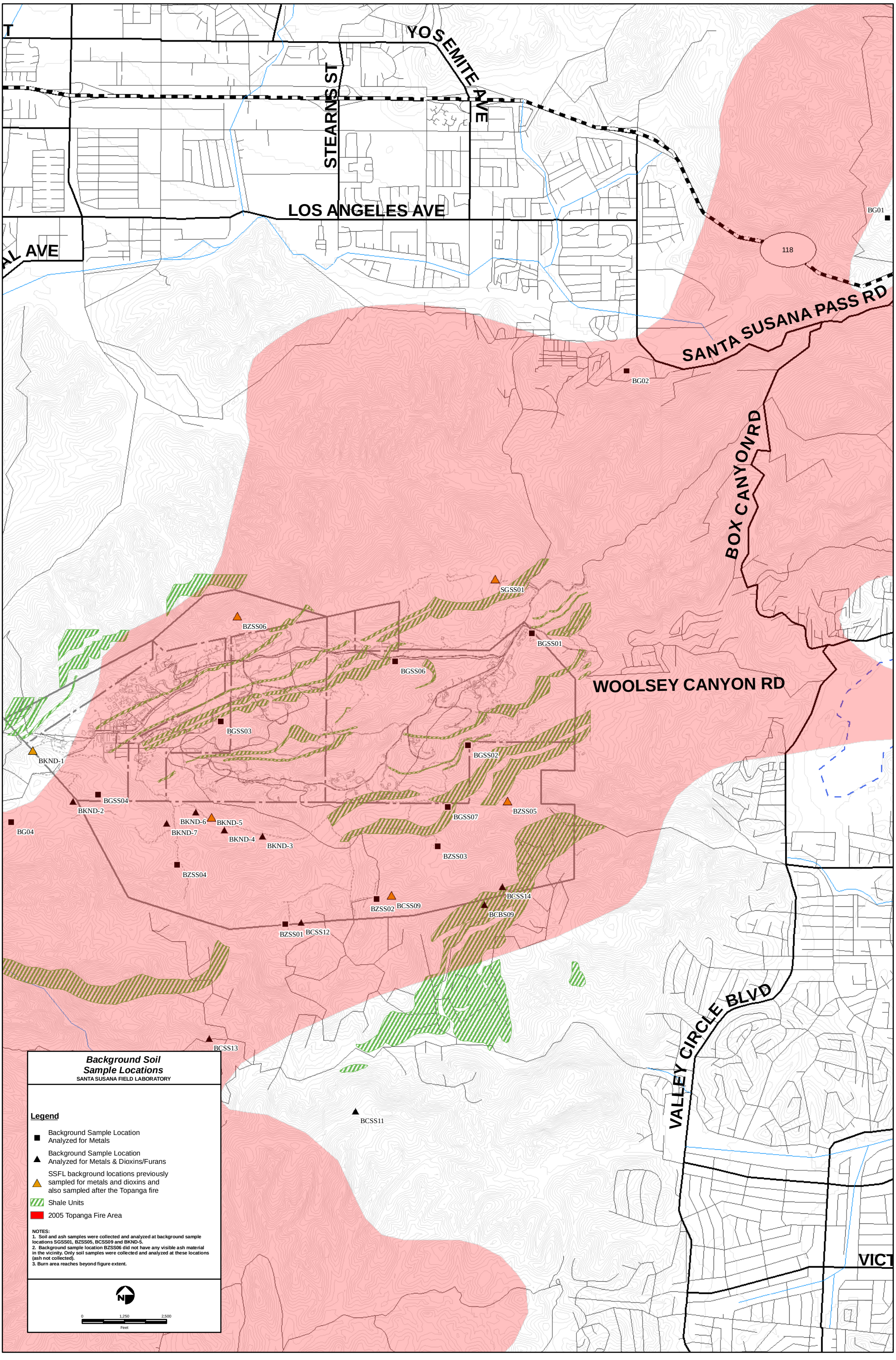
(a) Ratio is a comparison of results from 6 post-Topanga Fire background sampling locations to the results from the 29 pre-Topanga Fire background sampling locations included in the approved soil background data set.
(b) The detection limits reported here may vary from the original laboratory reports based on results from data validation.

Notes

1. Pre-fire summaries are based on the approved soil background data set for metals and dioxin/furan samples that was developed for samples collected at approved background sample locations in or around the SSFL. This data set was presented in the Soil Background Report (MWH 2005a), and is used for characterization and risk assessment evaluation of onsite investigational units for the SSFL RCRA program. SSFL RCRA program.
2. Post-fire soil and ash background samples were collected on October 13th and 14th, 2005 at previously sampled background sample locations to assess the impact of the Topanga Fire of September 2005 on ambient conditions at the SSFL.
3. All soil samples were collected between 0 to 6" below ground surface.
4. Dioxin values do not include total dioxins or furans.
5. Post-Fire reference data includes results from soil and ash samples collected after the Topanga Fire. The reference data was collected from locations outside the SSFL, and from onsite locations Upstream-001 and Upstream-002. Two of the reference samples were collected from locations in the Burbank "Harvard" Fire burn area in Burbank, CA. None of the reference data was collected from approved background locations. Their results are presented for comparison purposes only. See Attachment D-3 of this report for individual sample results and locations.

pg/g = picograms per gram
"--" indicates that there were no detected concentrations for this congener
Bold indicates post-Topanga Fire soil maximum concentration exceeded the soil background comparison value level

FIGURES



MWH

Post-Topanga Fire Background Sample Locations

FIGURE
D-1

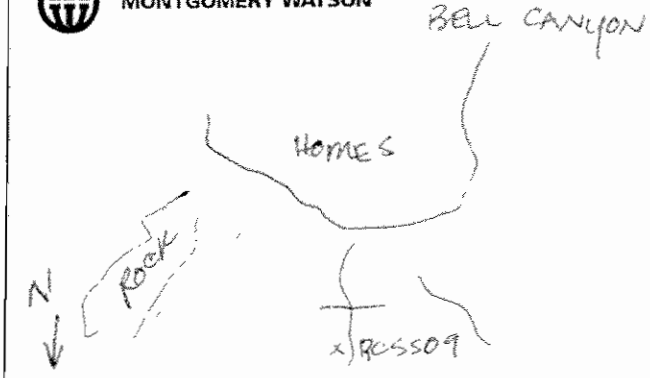
File r:/rock/plots/arcmap/soilbackgroundreport_addendum_2006/sram_background_addendum.mxd

Date: Feb 28, 2006

ATTACHMENT D-1

POST-FIRE BACKGROUND SAMPLE LOCATION DESCRIPTION

MONTGOMERY WATSON



Site Sketch Map

Boring #:	MW#: BCSS09 Sheet 1 of 1
Project:	BOEING - SSFL
Job #:	Site: BELL CANYON
Logged By:	BK Reviewed By: TB
Drilling Contractor:	—
Drill Rig Type/Method:	SURFACE SAMPLE
Drillers Name:	—
Borehole Diam./Drill Bit Type:	— Total Depth: 0.5' Ref. Elev.: —
Sampler Type:	TROWEL
Drill Start Time/Date:	10/14/05 958 Drill Finish Time/Date: —
Well Completion Time/Date:	—
Soil Boring Backfill Time/Date:	—

Depth to 1st Water (▽):	—	Time/Date:	—
Depth to Water After Drilling (▼):	—	Time/Date:	—
Depth to other Water Bearing Zones:	—		

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
								SW SM	0-0.5 Well graded Sand w/ silt, black veg., known. veg. abundant, v. dry little ash, bank - clayey crustal surface dk. to med brown, firm	TR		90		10
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

24/QC

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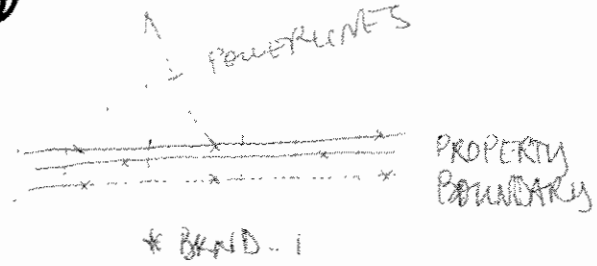
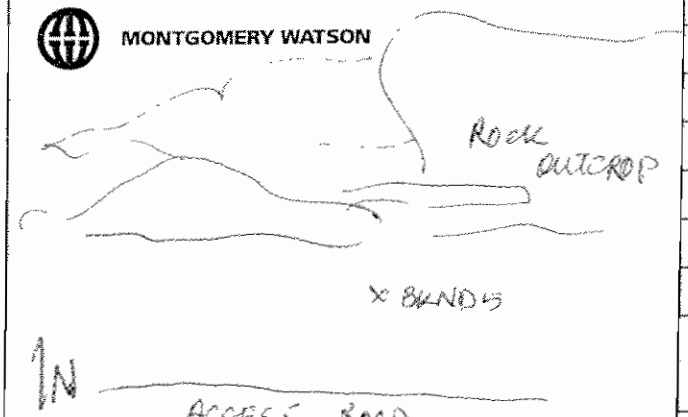


Site Sketch Map

Boring #:	MW#: BKND-1 Sheet 1 of
Project: BOEING-S8FL	
Job #:	Site: BACKGROUND
Logged By:	Reviewed By:
Drilling Contractor:	
Drill Rig Type/Method: SURFACE SAMPLE	
Drillers Name:	
Borehole Diam./Drill Bit Type:	Total Depth 0.5+
	Ref. Elev.
Sampler Type: TROWEL	
Depth to 1st Water (▽):	Time/Date:
Depth to Water After Drilling (▼):	Time/Date:
Depth to other Water Bearing Zones:	
Drill Start Time/Date:	Drill Finish Time/Date:
Well Completion Time/Date:	
Soil Boring Backfill Time/Date:	

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth ~~(Feet)~~ BGL	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
							1	ML	0-0.5" 10YR 4/4 Silty ~~loose~~ Soft Bkdly brown no burned material non-plastic fines, no clays				10	90
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON



Site Sketch Map

Boring #: MW#: BKND-5	Sheet 1 of 1
Project: BOEING SSFL -	
Job #: —	Site: BUFFER ZONE
Logged By: BK	Reviewed By: TB
Drilling Contractor: —	
Drill Rig Type/Method: Hand Surface Sample	
Drillers Name: —	
Borehole Diam./Drill Bit Type: —	Total Depth: 1/2"
	Ref. Elev.: —
Sampler Type: TROWEL	
Drill Start Time/Date: 10/13/05 1348	Drill Finish Time/Date:
Well Completion Time/Date: —	
Soil Boring Backfill Time/Date: —	

Depth to 1st Water (▽): — Time/Date: —	
Depth to Water After Drilling (▼): — Time/Date: —	
Depth to other Water Bearing Zones: —	

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
									0-0.5' ~~Sandy~~ Silt w/ Sand, brown, thin burnt veg. at top, ash below, then soil surface, dry loose	TR			15	85
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

3A/OC

MONTGOMERY WATSON

Boring #: MW#: B2SS05 Sheet 1 of 1

Project: BOEING-SSFL

Job #: Site: BUFFER ZONE

Logged By: BK Reviewed By: TB

Drilling Contractor: —

Drill Rig Type/Method: SURFACE SAMPLE

Drillers Name: —

Borehole Diam./Drill Bit Type: — Total Depth 0.5' Ref. Elev. —

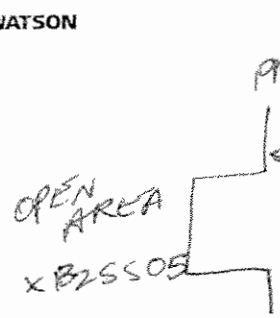
Sampler Type: TROWEL

Drill Start Time/Date: 10/14/05 1120 Drill Finish Time/Date:

Well Completion Time/Date:

Soil Boring Backfill Time/Date:

Site Sketch Map



Depth to 1st Water (▽): — Time/Date: —

Depth to Water After Drilling (▼): — Time/Date: —

Depth to other Water Bearing Zones: —

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
									0-0.5' Silt, low to med. plast., brown, veg. at surface				5-10	90
							1		thin layer of cementation @ surface					
							2		veg. black (grasses) no to little ash					
							3		Ash sample collected from base of tree ~ 70'					
							4		from soil sample location					
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON

Boring #: MW#: BZSS06	Sheet 1 of 1
Project:	
Job #:	Site: Undev. Land North
Logged By: T. Burton	Reviewed By:
Drilling Contractor:	
Drill Rig Type/Method:	
Drillers Name:	
Borehole Diam./Drill Bit Type:	Total Depth: Ø'
	Ref. Elev.:
Site Sketch Map	Sampler Type: trowel / jars
Depth to 1st Water (▽): Time/Date:	Drill Start Time/Date: 10/4/05 Drill Finish Time/Date: 1220
Depth to Water After Drilling (▼): Time/Date:	Well Completion Time/Date:
Depth to other Water Bearing Zones:	Soil Boring Backfill Time/Date:

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description: Sfc: steep slope; burrows; charred grass	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
									Silt w/sand (ML); brown (7.5 YR 4/4), dry, soft, sfc. hardened slightly from fire; vf + fine grains; non-plastic; some weathered sandstone fragments	—	—	tr	20	80
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON

Site Sketch Map

Boring #: MW#: SGSS01	Sheet 1 of 1
Project: BOEING - FIRE ASSESSMENT	
Job #:	Site: SAGE RANCH
Logged By: BK	Reviewed By: TB
Drilling Contractor: —	
Drill Rig Type/Method: SURFACE SAM	
Drillers Name:	
Borehole Diam./Drill Bit Type:	Total Depth: 4½"
	Ref. Elev.
Sampler Type: TROWEL	
Drill Start Time/Date: 10/13 1152	Drill Finish Time/Date: —
Well Completion Time/Date: —	
Soil Boring Backfill Time/Date: —	

Depth to 1st Water (▽): —	Time/Date: —		
Depth to Water After Drilling (▼): —	Time/Date: —		
Depth to other Water Bearing Zones: —			

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description 0-0.5"	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
								ML	~~Sand~~ Silt, brown, dry charred veg. black.				5	95
							1		crust at surface					
							2		soft below thin layer					
									of ash at soil surface					
							3		and burnt charred					
									veg					
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

JA/OK

ATTACHMENT D-2

POST-FIRE BACKGROUND DATA VALIDATION FINDINGS AND LABORATORY INFORMATION

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Alta
Reviewer E. Wessling
Analysis/Method Dioxins by 1613

Package ID T713DF4
Task Order 313150010
SDG No. IOJ1122
No. of Analyses 5
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
	-- estimated maximum possible concentration interferences
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Surface Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IOJ1122

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ1122
Project Manager:	A. Lenox
Matrix:	Solid
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 20, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National Functional Guidelines For Chlorinated Dioxin/Furan Data Review* (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample Identification

EPA ID	MWH ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
WL024	BCSS09S01	IOJ1122-01	26821-001	Ash	1613
WL025	BCSS09S01	IOJ1122-02	26821-002	Soil	1613
WL026	BZSS05S01	IOJ1122-03	26821-003	Soil	1613
WL027	BZSS06S01	IOJ1122-04	26821-004	Soil	1613
WL028	BZSS05S01	IOJ1122-05	26821-005	Ash	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received within temperature limits of 4°C ±2°C. No qualifications were required. According to the case narrative and laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 6/06/2005. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

One method blank (Blank 7352-0-MB001) was extracted and analyzed with the samples in this SDG. No target or total compounds were reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (7352-0-OPR001) was extracted and analyzed with the samples in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no identified field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No further qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." Confirmation for 2,3,7,8-TCDF detected in samples WL024 and WL028 was not performed; therefore, 2,3,7,8-TCDF was qualified as estimated, "J." No further qualifications were required.

ALTA

Sample ID: IOJ1122-01 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26821-001	Date Received:	19-Oct-05
Project:	IOJ1122	Sample Size:	10.53 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	14-Oct-05	%Solids:	95.4	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1015						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	0.134			J
1,2,3,7,8-PeCDD	0.289			J
1,2,3,4,7,8-HxCDD	ND	0.328		
1,2,3,6,7,8-HxCDD	ND	0.303		
1,2,3,7,8,9-HxCDD	0.378			J
1,2,3,4,6,7,8-HpCDD	3.27			
OCDD	9.35			
2,3,7,8-TCDF	0.389			J
1,2,3,7,8-PeCDF	0.206			J
2,3,4,7,8-PeCDF	ND		0.174	
1,2,3,4,7,8-HxCDF	0.167			J
1,2,3,6,7,8-HxCDF	0.148			J
2,3,4,6,7,8-HxCDF	0.115			J
1,2,3,7,8,9-HxCDF	ND	0.0797		
1,2,3,4,6,7,8-HpCDF	0.320			J
1,2,3,4,7,8,9-HpCDF	ND	0.152		
OCDF	ND	0.469		

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	83.8	25 - 164	
	13C-1,2,3,7,8-PeCDD	84.6	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	89.1	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	87.2	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	91.3	23 - 140	
	13C-OCDD	60.6	17 - 157	
	13C-2,3,7,8-TCDF	81.2	24 - 169	
	13C-1,2,3,7,8-PeCDF	83.2	24 - 185	
	13C-2,3,4,7,8-PeCDF	81.0	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	84.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	82.4	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	87.1	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	88.0	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	79.2	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	79.4	26 - 138	
	13C-OCDF	61.1	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	89.5	35 - 197	

Totals		
Total TCDD	2.72	3.27
Total PeCDD	4.15	4.33
Total HxCDD	5.54	
Total HpCDD	7.28	
Total TCDF	4.37	4.60
Total PeCDF	1.20	1.84
Total HxCDF	0.661	0.989
Total HpCDF	0.320	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.453

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 14:42

ALTA

Sample ID: IOJ1122-02

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26821-002	Date Received:	19-Oct-05
Project:	IOJ1122	Sample Size:	9.85 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	14-Oct-05	%Solids:	99.4	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	0958						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.109		
	1,2,3,7,8-PeCDD	ND	0.0826		
	1,2,3,4,7,8-HxCDD	ND	0.118		
	1,2,3,6,7,8-HxCDD	ND	0.115		
	1,2,3,7,8,9-HxCDD	ND	0.117		
UJ *10	1,2,3,4,6,7,8-HpCDD	ND		0.686	
J	OCDD	4.23			J
J	2,3,7,8-TCDF	0.279			J
UJ *10	1,2,3,7,8-PeCDF	ND		0.291	
J	2,3,4,7,8-PeCDF	0.197			J
	1,2,3,4,7,8-HxCDF	0.154			J
	1,2,3,6,7,8-HxCDF	0.133			J
U	2,3,4,6,7,8-HxCDF	ND	0.0588		
U	1,2,3,7,8,9-HxCDF	ND	0.0905		
UJ *10	1,2,3,4,6,7,8-HpCDF	ND		0.147	
U	1,2,3,4,7,8,9-HpCDF	ND	0.0864		
U	OCDF	ND	0.325		

Labeled Standard		%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	97.8	25 - 164	
	13C-1,2,3,7,8-PeCDD	97.1	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	96.9	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	92.5	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	96.6	23 - 140	
	13C-OCDD	74.8	17 - 157	
	13C-2,3,7,8-TCDF	95.6	24 - 169	
	13C-1,2,3,7,8-PeCDF	96.7	24 - 185	
	13C-2,3,4,7,8-PeCDF	93.8	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	89.8	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	85.9	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	94.4	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	95.5	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	84.2	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	88.7	26 - 138	
	13C-OCDF	75.9	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	87.8	35 - 197	

Totals			
U	Total TCDD	ND	0.109
U	Total PeCDD	ND	0.0826
	Total HxCDD	0.279	
	Total HpCDD	1.02	1.71
	Total TCDF	2.53	
	Total PeCDF	2.20	2.78
	Total HxCDF	0.689	
U	Total HpCDF	ND	0.147

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.159

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 14:42

331

ALTA

Sample ID: IOJ1122-03

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26821-003	Date Received:	19-Oct-05
Project:	IOJ1122	Sample Size:	10.16 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	14-Oct-05	%Solids:	100	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1020						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.113		
J	1,2,3,7,8-PeCDD	0.0958			J
U	1,2,3,4,7,8-HxCDD	ND	0.309		
	1,2,3,6,7,8-HxCDD	ND	0.316		
	1,2,3,7,8,9-HxCDD	ND	0.314		
	1,2,3,4,6,7,8-HpCDD	2.47			
	OCDD	19.0			
J	2,3,7,8-TCDF	0.159			J
U	* 10 1,2,3,7,8-PeCDF	ND		0.125	
J	2,3,4,7,8-PeCDF	0.249			J
	1,2,3,4,7,8-HxCDF	0.234			J
	1,2,3,6,7,8-HxCDF	0.177			J
	2,3,4,6,7,8-HxCDF	0.200			J
	1,2,3,7,8,9-HxCDF	0.216			J
	1,2,3,4,6,7,8-HpCDF	0.804			J
U	1,2,3,4,7,8,9-HpCDF	ND	0.116		
U	OCDF	ND	0.830		

Totals		
Total TCDD	0.232	0.418
Total PeCDD	0.751	1.15
Total HxCDD	1.35	
Total HpCDD	5.80	
Total TCDF	1.31	
Total PeCDF	2.57	2.78
Total HxCDF	2.12	2.27
Total HpCDF	1.47	

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	93.8	25 - 164	
	13C-1,2,3,7,8-PeCDD	94.7	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	92.1	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	92.5	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	94.2	23 - 140	
	13C-OCDD	64.4	17 - 157	
	13C-2,3,7,8-TCDF	90.8	24 - 169	
	13C-1,2,3,7,8-PeCDF	92.6	24 - 185	
	13C-2,3,4,7,8-PeCDF	90.3	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	87.3	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	87.7	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	92.1	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	98.6	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	84.6	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	96.6	26 - 138	
	13C-OCDF	76.9	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	94.5	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.322

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 14:42

ALTA

Sample ID: IOJ1122-04

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26821-004	Date Received:	19-Oct-05
Project:	IOJ1122	Sample Size:	10.17 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	14-Oct-05	%Solids:	98.7	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1215						

Rev Qual	Qual code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U		2,3,7,8-TCDD	ND	0.106		
UJ	*10	1,2,3,7,8-PeCDD	ND		0.118	
U		1,2,3,4,7,8-HxCDD	ND	0.169		
J		1,2,3,6,7,8-HxCDD	0.275			J
J		1,2,3,7,8,9-HxCDD	0.284			J
		1,2,3,4,6,7,8-HpCDD	2.53			
		OCDD	18.7			
U		2,3,7,8-TCDF	ND	0.0831		
J		1,2,3,7,8-PeCDF	0.118			J
		2,3,4,7,8-PeCDF	0.226			J
		1,2,3,4,7,8-HxCDF	0.177			J
		1,2,3,6,7,8-HxCDF	0.144			J
		2,3,4,6,7,8-HxCDF	0.201			J
		1,2,3,7,8,9-HxCDF	0.175			J
		1,2,3,4,6,7,8-HpCDF	0.738			J
U		1,2,3,4,7,8,9-HpCDF	ND	0.168		
J		OCDF	1.16			J
		Totals				
U		Total TCDD	ND	0.106		
		Total PeCDD	0.604		1.24	
		Total HxCDD	1.86		2.53	
		Total HpCDD	6.04			
		Total TCDF	1.18			
		Total PeCDF	2.40		2.58	
		Total HxCDF	2.01		2.11	
		Total HpCDF	1.35			

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	92.2	25 - 164	
	13C-1,2,3,7,8-PeCDD	95.4	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	94.8	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	90.5	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	93.8	23 - 140	
	13C-OCDD	76.0	17 - 157	
	13C-2,3,7,8-TCDF	89.6	24 - 169	
	13C-1,2,3,7,8-PeCDF	92.9	24 - 185	
	13C-2,3,4,7,8-PeCDF	91.7	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	88.9	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	86.0	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	93.7	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	95.7	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	83.8	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	91.8	26 - 138	
	13C-OCDF	77.9	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	85.7	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): **0.297**

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 14:42

ALTA

Sample ID: IOJ1122-05

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26821-005	Date Received:	19-Oct-05
Project:	IOJ1122	Sample Size:	9.68 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	14-Oct-05	%Solids:	99.5	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1125						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	0.230			J
1,2,3,7,8-PeCDD	0.424			J
1,2,3,4,7,8-HxCDD	ND	0.233		
1,2,3,6,7,8-HxCDD	0.622			J
1,2,3,7,8,9-HxCDD	0.519			J
1,2,3,4,6,7,8-HpCDD	2.55			J
OCDD	10.2			
2,3,7,8-TCDF	0.727			
1,2,3,7,8-PeCDF	1.07			J
2,3,4,7,8-PeCDF	1.08			J
1,2,3,4,7,8-HxCDF	1.40			J
1,2,3,6,7,8-HxCDF	0.964			J
2,3,4,6,7,8-HxCDF	0.835			J
1,2,3,7,8,9-HxCDF	ND	0.377		
1,2,3,4,6,7,8-HpCDF	3.06			
1,2,3,4,7,8,9-HpCDF	ND	0.537		
OCDF	1.67			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	87.2	25 - 164	
	13C-1,2,3,7,8-PeCDD	87.7	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	86.3	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	85.7	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	90.3	23 - 140	
	13C-OCDD	60.4	17 - 157	
	13C-2,3,7,8-TCDF	80.2	24 - 169	
	13C-1,2,3,7,8-PeCDF	86.3	24 - 185	
	13C-2,3,4,7,8-PeCDF	85.8	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	81.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	79.4	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	85.9	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	90.2	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	77.1	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	86.3	26 - 138	
	13C-OCDF	67.2	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	85.7	35 - 197	

Totals		
Total TCDD	47.6	47.9
Total PeCDD	12.7	13.0
Total HxCDD	7.18	
Total HpCDD	5.60	
Total TCDF	18.6	19.0
Total PeCDF	16.3	
Total HxCDF	10.0	
Total HpCDF	4.17	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 1.61

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 14:42

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar - Irvine
Reviewer E. Wessling
Analysis/Method General Minerals

Package ID 1713WC2
Task Order 313150010
SDG No. IOJ1122
No. of Analyses 5
Date: December 12, 2005
Reviewer's Signature

ACTION ITEMS*	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	- no sample weights for surfactants
GC/MS Tune/Inst. Performance	- estimated values between the MDL and RL
Calibration	~~- Closing CCV outlier for cyanide~~ SAW
Method blanks	- H.T. for MBAD
Surrogates	~~- [illegible] for MBAD~~ SAW
Matrix Spike/Dup LCS	- closing CCV for cyanide
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

amec

DATA VALIDATION REPORT

Topanga Fire

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: 1OJ1122

Prepared by

AMEC -Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Fire Support
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ1122
Project Manager:	P. Costa
Matrix:	Soil and Ash
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	5
Reviewer:	E. Wessling
Date of Review:	December 12, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.3, and 9014, Standard Methods for the Examination of Water and Wastewater Method SM5540-CMOD* and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
BCSS09S01	WL024	IOJ1122-01	Ash	General Minerals
BCSS09S01	WL025	IOJ1122-02	Soil	General Minerals
BZSS05S01	WL026	IOJ1122-03	Soil	General Minerals
BZSS06S01	WL027	IOJ1122-04	Ash	General Minerals
BZSS05S01	WL028	IOJ1122-05	Soil	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of 4°C ± 2°C. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel and accounted for the samples and all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analysis. The analytical holding times for all analyses except MBAS were met. MBAS results were qualified as estimated, "J," for detects and "UJ," for nondetects. No further qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995. Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110% with the exception of the closing CCV for the cyanide analysis and the MBAS analysis which were above the control limits. Detects for these compounds were qualified as estimated, "J." No further qualifications were required.

2.3 BLANKS

Target compounds were not detected in the associated method blanks, (5J18066-BLK1, 5J19111-BLK1, 5J19117-BLK1, 5J20143-BLK1 and 5J26001-BLK1). Raw data was reviewed to verify the blank data. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the laboratory-established control limits. Raw data was reviewed to verify the values reported for the LCS recoveries. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed on samples in association with this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. Actual sample weights were not recorded for the MBAS analysis. All MBAS data were qualified as estimated, "J," for detects and "UJ," for nondetects. No transcription errors or calculation errors were noted. Results reported by the laboratory between the MDL and reporting limit were qualified as "J." Samples collected for the soil background evaluation program were qualified following the RFI program criteria. No further qualifications were required.

2.11 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #5, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ1122

Sampled: 10/14/05
Received: 10/14/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rest. Qual	Qual Code
Sample ID: IOJ1122-01 (WL024 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**97**	1	10/19/05	10/19/05			
Sample ID: IOJ1122-02 (WL025 - Soil)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**99**	1	10/19/05	10/19/05			
Sample ID: IOJ1122-03 (WL026 - Soil)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**99**	1	10/19/05	10/19/05			
Sample ID: IOJ1122-04 (WL027 - Soil)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**98**	1	10/19/05	10/19/05			
Sample ID: IOJ1122-05 (WL028 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**99**	1	10/19/05	10/19/05			
Sample ID: IOJ1122-01 (WL024 - Solid)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.2	**13**	0.998	10/20/05	10/20/05			
Total Cyanide	EPA 9014	5J19117	0.44	0.52	**1.9**	1	10/19/05	10/20/05			
Sulfate	EPA 300.0	5J18066	93	100	**6800**	20	10/18/05	10/19/05			
Surfactants (MBAS)	SM5540-C MOD.	5J26001	0.91	2.1	**4.5**	2	10/24/05	10/26/05	J		R*10
Sample ID: IOJ1122-02 (WL025 - Soil)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.0	**27**	0.998	10/20/05	10/20/05			
Total Cyanide	EPA 9014	5J19117	0.43	0.50	**1.5**	0.995	10/19/05	10/20/05			
Sulfate	EPA 300.0	5J18066	4.5	5.1	**440**	1	10/18/05	10/19/05			
Surfactants (MBAS)	SM5540-C MOD.	5J26001	0.89	2.0	**3.0**	2	10/24/05	10/26/05	J		R*10
Sample ID: IOJ1122-03 (WL026 - Soil)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.0	**16**	0.996	10/20/05	10/20/05			
Total Cyanide	EPA 9014	5J19117	0.43	0.50	ND	0.99	10/19/05	10/20/05	U		
Sulfate	EPA 300.0	5J18066	9.1	10	**340**	2	10/18/05	10/19/05			
Surfactants (MBAS)	SM5540-C MOD.	5J26001	2.2	5.0	ND	4.99	10/24/05	10/26/05	U ~~RI-1~~		*10

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ1122

Sampled: 10/14/05
Received: 10/14/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1122-04 (WL027 - Soil)									
Reporting Units: mg/kg dry									
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.1	**5.1**	0.996	10/20/05	10/20/05	J
Total Cyanide	EPA 9014	5J19117	0.44	0.51	ND	1	10/19/05	10/20/05	U
Sulfate	EPA 300.0	5J18066	4.6	5.1	**37**	1	10/18/05	10/19/05	
Surfactants (MBAS)	SM5540-C MOD.	5J26001	2.2	5.1	ND	5	10/24/05	10/26/05	URLET
Sample ID: IOJ1122-05 (WL028 - Solid)									
Reporting Units: mg/kg dry									
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.0	**7.6**	0.998	10/20/05	10/20/05	
Total Cyanide	EPA 9014	5J19117	0.43	0.50	**5.6**	1	10/19/05	10/20/05	
Sulfate	EPA 300.0	5J18066	45	50	**4000**	10	10/18/05	10/19/05	
Surfactants (MBAS)	SM5540-C MOD.	5J26001	0.89	2.0	**6.6**	2	10/24/05	10/26/05	J

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Package ID T713PA3
Task Order 313150010
SDG No. IOJ0896
No. of Analyses 5

Laboratory Calscience Environmental Laboratories, Inc.
Reviewer K. Shadowlight
Analysis/Method PAHs by Method 8270/SIM

Date: December 8, 2005
Reviewer's Signature KShadowlight

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	--Continuing calibration %D outliers
GC/MS Tune/Inst. Performance	--Surrogate recovery outliers
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Sampling

ANALYSIS: SEMIVOLATILES (PAHs)

SAMPLE DELIVERY GROUP: IOJ0896

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Sampling
Contract Task Order #:	313150010
SDG#:	IOJ0896
Project Manager:	P. Costa
Matrix:	Soil/Solid
Analysis:	Semivolatiles (PAHs)
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	December 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2), SW-846 Method 8270C* , and the *National Functional Guidelines For Organic Data Review* (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Del Mar Lab No.	Matrix	Method
SGSS-1S01 (SOIL)	WL016	IOJ0896-01	soil	8270C/SIM
SGSS-1S01 (ASH)	WL017	IOJ0896-02	solid	8270C/SIM
BKND-5 (SOIL)	WL018	IOJ0896-03	soil	8270C/SIM
BKND-5 (ASH)	WL019	IOJ0896-04	solid	8270C/SIM
BKND-1 (SOIL)	WL021	IOJ0896-06	soil	8270C/SIM

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The polyaromatic hydrocarbon analysis by 8270/SIM was subcontracted to Calscience Environmental Laboratories, Inc. The samples were received at both laboratories within the temperature limits of 4°C ±2°C, intact, and in good condition. The analysis did not require preservation, and no preservation was noted in the field. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were signed and dated by the appropriate field and laboratory personnel. The COC and transfer COC accounted for the samples and analysis presented in this SDG. Custody seals were not present on the coolers or samples at either laboratory; however, as the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The soil/solid samples were extracted within 14 days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

Tune criteria is not required for Single Ion Monitoring (SIM) analysis. No qualifications were required.

2.3 CALIBRATION

There was one initial calibration associated with this SDG dated 10/18/05. The average RRFs were ≥0.05 and the %RSDs were ≤15% in the initial calibration. An ICV was analyzed immediately following the initial calibration and the RRFs were ≥0.05 and %Ds were ≤20% for all target compounds. There were two continuing calibrations associated with the samples in this SDG dated 10/18/05 and 10/19/05 (16:35). All RRFs were ≥0.05. The %D for benzo(g,h,i)perylene exceeded 20% in the continuing calibration dated 10/18/05. Results for benzo (g,h,i)perylene were qualified as estimated, "J," for detects and "UJ," for nondetects in samples WL016, WL017, and WL019. The %Ds for pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene exceeded 20% in the continuing calibration dated 10/19/05; therefore, the results for the aforementioned target compounds were qualified as estimated "J," for detects and "UJ," for nondetects in samples WL018 and WL021. The %Ds for the remaining target compounds were ≤20% in both calibrations.

A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

Two method blanks (051017L02-MB and 051019L09-MB) were extracted and analyzed with this SDG. There were no target compounds detected in either of the method blanks. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two laboratory control sample/laboratory control sample duplicate pairs (051017L02-LCS/LCSD and 051019L09-LCS/LCSD) were extracted and analyzed with this SDG. The recoveries and RPDs for spiked target compounds acenaphthene and pyrene were within the laboratory QC limits for both pairs. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The recoveries of two or more base-neutral surrogates exceeded QC limits in samples WL016, WL017, and WL019. The samples were reanalyzed with similar results; however, insufficient sample was available for reextraction. Detects were qualified as estimated, "J," in the aforementioned samples. The base-neutral surrogate recoveries were within the laboratory QC limits for the remaining samples in this SDG. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No further qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples identified for this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ±30 seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for 18 polyaromatic hydrocarbons target compounds by SW-846 Method 8270/SIM. Review of the sample chromatograms and retention times indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The results and reporting limits were appropriately adjusted for sample amount and percent moisture. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. The results were reported in ppm (mg/kg). No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not reported for SIM analysis. No qualifications were required.

2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical		Date Received:	10/14/05
17461 Derian Avenue, Suite 100		Work Order No:	05-10-0882
Irvine, CA 92614-5845		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: IOJ0896			Page 1 of 4

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0896-01	05-10-0882-1	10/13/05	Solid	10/17/05	10/19/05	051017L02

Comment(s): WL016 -Results are reported on a dry weight basis. Raw Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual	Raw Qual	Qual Code
Naphthalene	0.064	0.02	0.0037	1.01	J	Benzo (a) Anthracene	0.0093	0.02	0.0026	1.01	J	J	S BNQ
2-Methylnaphthalene	0.033	0.02	0.0024	1.01		Chrysene	0.017	0.02	0.0048	1.01	J	J	S BNQ
Acenaphthylene	0.0098	0.02	0.0024	1.01	J	Benzo (k) Fluoranthene	ND	0.020	0.0045	1.01	U		
Acenaphthene	0.012	0.02	0.0051	1.01	J	Benzo (b) Fluoranthene	ND	0.020	0.0014	1.01			
Fluorene	0.020	0.02	0.0031	1.01	J	Benzo (a) Pyrene	ND	0.020	0.0020	1.01			
Phenanthrene	0.038	0.02	0.0038	1.01		Benzo (g,h,i) Perylene	0.0090	0.02	0.0033	1.01	J	J	S, C, BNQ
Anthracene	ND	0.020	0.0063	1.01	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.01	U		
Fluoranthene	0.019	0.02	0.0020	1.01	J	Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	U		
Pyrene	0.023	0.02	0.0033	1.01	J	1-Methylnaphthalene	0.024	0.02	0.0043	1.01	J	J	S

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	331	28-139	2	2-Fluorobiphenyl	1111	33-144	2
p-Terphenyl-d14	148	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0896-02	05-10-0882-2	10/13/05	Solid	10/17/05	10/18/05	051017L02

Comment(s): WL017 -Results are reported on a dry weight basis. Raw Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual	Raw Qual	Qual Code
Naphthalene	0.30	0.02	0.0038	1.02	J	Benzo (a) Anthracene	ND	0.020	0.0027	1.02	U		
2-Methylnaphthalene	0.033	0.02	0.0024	1.02	J	Chrysene	0.011	0.02	0.0048	1.02	J	J	S, BNQ
Acenaphthylene	ND	0.020	0.0025	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	U		
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02			
Fluorene	ND	0.020	0.0031	1.02		Benzo (a) Pyrene	ND	0.020	0.0020	1.02			
Phenanthrene	0.054	0.02	0.0039	1.02	J	Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	U	J	C
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	U		
Fluoranthene	0.012	0.02	0.0020	1.02	J	Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	U		
Pyrene	0.011	0.02	0.0033	1.02	J	1-Methylnaphthalene	0.022	0.02	0.0044	1.02	J	J	S

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	146	28-139	2	2-Fluorobiphenyl	150	33-144	2
p-Terphenyl-d14	170	23-160	2				

Level IV

KS 12/4/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/14/05
Work Order No:	05-10-0882
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ0896

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	051019L09

WL018 Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.14	0.02	0.0040	1.09		Benzo (a) Anthracene	ND	0.022	0.0029	1.09	U
2-Methylnaphthalene	0.051	0.022	0.0026	1.09		Chrysene	0.0087	0.022	0.0052	1.09	J J DNQ
Acenaphthylene	ND	0.022	0.0026	1.09	U	Benzo (k) Fluoranthene	ND	0.022	0.0049	1.09	U
Acenaphthene	0.012	0.022	0.0055	1.09	J J DNQ	Benzo (b) Fluoranthene	ND	0.022	0.0015	1.09	↓
Fluorene	0.015	0.022	0.0033	1.09	J J DNQ	Benzo (a) Pyrene	ND	0.022	0.0022	1.09	↓
Phenanthrene	0.034	0.022	0.0041	1.09		Benzo (g,h,i) Perylene	ND	0.022	0.0036	1.09	U J C
Anthracene	ND	0.022	0.0068	1.09	U	Indeno (1,2,3-c,d) Pyrene	ND	0.022	0.0038	1.09	U
Fluoranthene	0.0098	0.022	0.0021	1.09	J J DNQ	Dibenz (a,h) Anthracene	ND	0.022	0.0029	1.09	U J C
Pyrene	0.014	0.022	0.0036	1.09	J J DNQ	1-Methylnaphthalene	0.042	0.022	0.0047	1.09	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	106	28-139		2-Fluorobiphenyl	92	33-144	
p-Terphenyl-d14	123	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	10/18/05	051017L02

WL019 Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.32	0.02	0.0041	1.1	J S	Benzo (a) Anthracene	ND	0.022	0.0029	1.1	U
2-Methylnaphthalene	0.057	0.022	0.0026	1.1	J S	Chrysene	0.0091	0.022	0.0052	1.1	J J S DNQ
Acenaphthylene	ND	0.022	0.0026	1.1	U	Benzo (k) Fluoranthene	ND	0.022	0.0050	1.1	U
Acenaphthene	ND	0.022	0.0055	1.1	↓	Benzo (b) Fluoranthene	ND	0.022	0.0015	1.1	↓
Fluorene	ND	0.022	0.0034	1.1	↓	Benzo (a) Pyrene	ND	0.022	0.0022	1.1	↓
Phenanthrene	0.060	0.022	0.0042	1.1	J S	Benzo (g,h,i) Perylene	ND	0.022	0.0036	1.1	U J C
Anthracene	ND	0.022	0.0068	1.1	U	Indeno (1,2,3-c,d) Pyrene	ND	0.022	0.0038	1.1	U
Fluoranthene	0.013	0.022	0.0021	1.1	J S J DNQ	Dibenz (a,h) Anthracene	ND	0.022	0.0030	1.1	U
Pyrene	0.014	0.022	0.0036	1.1	J S J DNQ	1-Methylnaphthalene	0.041	0.022	0.0047	1.1	J S

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	132	28-139		2-Fluorobiphenyl	169	33-144	2
p-Terphenyl-d14	183	23-160	2				

Level IV

KA 12/5/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/14/05
Work Order No:	05-10-0882
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ0896

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[illegible]	[illegible]	[illegible]	Soil	10/18/05	10/19/05	051019L09

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0038	1.02	U	Benzo (a) Anthracene	ND	0.020	0.0027	1.02	U
2-Methylnaphthalene	ND	0.020	0.0024	1.02		Chrysene	ND	0.020	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02		Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	ND	0.020	0.0031	1.02		Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	ND	0.020	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	UJ C
Anthracene	ND	0.020	0.0063	1.02		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	U
Fluoranthene	ND	0.020	0.0020	1.02		Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	UJ C
Pyrene	0.0094	0.02	0.0033	1.02	J	1-Methylnaphthalene	ND	0.020	0.0044	1.02	U

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	99	28-139		2-Fluorobiphenyl	97	33-144	
p-Terphenyl-d14	147	23-160					

Sample ID	Lab Sample ID	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
[illegible]	[illegible]	[illegible]	Solid	10/18/05	10/19/05	051019L09

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0037	1	*	Benzo (a) Anthracene	ND	0.020	0.0026	1	*
2-Methylnaphthalene	ND	0.020	0.0024	1		Chrysene	ND	0.020	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1		Benzo (k) Fluoranthene	ND	0.020	0.0045	1	
Acenaphthene	ND	0.020	0.0050	1		Benzo (b) Fluoranthene	ND	0.020	0.0014	1	
Fluorene	ND	0.020	0.0031	1		Benzo (a) Pyrene	ND	0.020	0.0020	1	
Phenanthrene	ND	0.020	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	
Anthracene	ND	0.020	0.0062	1		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	
Fluoranthene	ND	0.020	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	
Pyrene	ND	0.020	0.0033	1		1-Methylnaphthalene	ND	0.020	0.0043	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	88	28-139		2-Fluorobiphenyl	89	33-144	
p-Terphenyl-d14	133	23-160					

* not validated

KS 12/8/05

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Laboratory Calscience Environmental Laboratories, Inc.
Reviewer K. Shadowlight
Analysis/Method PAHs by Method 8270/SIM

Package ID T713PA2
Task Order 313150010
SDG No. IOJ1120, IOJ1122
No. of Analyses 7

Date: December 8, 2005

Reviewer's Signature K Shadowlight

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for continuing calibration %D outliers
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Sampling

ANALYSIS: SEMIVOLATILES (PAHs)

SAMPLE DELIVERY GROUPS: IOJ1120, IOJ1122

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Sampling
Contract Task Order #:	313150010
SDG#:	IOJ1120, IOJ1122
Project Manager:	P. Costa
Matrix:	Soil/Solid
Analysis:	Semivolatiles (PAHs)
QC Level:	Level IV
No. of Samples:	7
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	December 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2), SW-846 Method 8270C* , and the *National Functional Guidelines For Organic Data Review* (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
SSM-1-Soil	WL022	IOJ1120-01	soil	8270C/SIM
SSM-1-Ash	WL023	IOJ1120-02	solid	8270C/SIM
BCSS09S01	WL024	IOJ1122-01	solid	8270C/SIM
BCSS09S01	WL025	IOJ1122-02	soil	8270C/SIM
BZSS05S01	WL026	IOJ1122-03	soil	8270C/SIM
BZSS06S01	WL027	IOJ1122-04	soil	8270C/SIM
BZSS05S01	WL028	IOJ1122-05	solid	8270C/SIM

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at Del Mar Analytical above the temperature limits of 4°C ±2°C, at 15°C; however, as the samples were directly couriered from the field to the laboratory there was insufficient time for the samples to cool. The polyaromatic hydrocarbon analysis by 8270/SIM was subcontracted to Calscience Environmental Laboratories, Inc. The samples were received at Calscience within the temperature limits of 4°C ±2°C, intact, and in good condition. The analysis did not require preservation, and no preservation was noted in the field. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were signed and dated by the appropriate field and laboratory personnel. In a memo from Montgomery Watson dated 11/02/05, the prefix of the Client ID was changed from SMM to SSM for samples WL022 and WL023. Custody seals were not present on the coolers or samples at either laboratory; however, as the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The soil/solid samples were extracted within 14 days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

Tune criteria is not required for Single Ion Monitoring (SIM) analysis. No qualifications were required.

2.3 CALIBRATION

There was one initial calibration associated with these SDGs dated 10/18/05. The average RRFs were ≥0.05 and the %RSDs were ≤15% in the initial calibration. An ICV was analyzed immediately following the initial calibration and the RRFs were ≥0.05 and %Ds were ≤20% for all target compounds. There were two continuing calibrations associated with the samples in these SDGs dated 10/20/05 and 10/24/05. All RRFs were ≥0.05. The %Ds for benzo(b) fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene exceeded 20% in the continuing calibration dated 10/24/05; therefore, the results for the aforementioned target compounds were qualified as estimated "J," for detects and "UJ," for nondetects in sample WL028. The %Ds for the remaining target compounds were ≤20% in both calibrations.

A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

One method blank (051019L09-MB) was extracted and analyzed with these SDGs. There were no target compounds detected in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One laboratory control sample/laboratory control sample duplicate pair (051019L09-LCS/LCSD) were extracted and analyzed with these SDGs. The recoveries and RPDs for spiked target compounds acenaphthene and pyrene were within the laboratory QC limits for the pair. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The base-neutral surrogate recoveries were within the laboratory QC limits for the samples in these SDGs. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples identified for these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples identified for these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and

±30 seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for 18 polyaromatic hydrocarbons target compounds by SW-846 Method 8270/SIM. Review of the sample chromatograms and retention times indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The results and reporting limits were appropriately adjusted for sample amount and percent moisture. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. The results were reported in ppm (mg/kg). No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not reported for SIM analysis. No qualifications were required.

2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/19/05
Work Order No:	05-10-1066
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ1120

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1120-01	05-10-1066-1	10/13/05	Solid	10/19/05	10/20/05	051019L09

WLO22

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.10	0.02	0.0038	1.04		Benzo (a) Anthracene	ND	0.021	0.0027	1.04	U
2-Methylnaphthalene	0.031	0.021	0.0025	1.04		Chrysene	ND	0.021	0.0049	1.04	
Acenaphthylene	ND	0.021	0.0025	1.04	U	Benzo (k) Fluoranthene	ND	0.021	0.0047	1.04	
Acenaphthene	ND	0.021	0.0052	1.04	U	Benzo (b) Fluoranthene	ND	0.021	0.0015	1.04	
Fluorene	0.0090	0.021	0.0032	1.04	J	Benzo (a) Pyrene	ND	0.021	0.0020	1.04	
Phenanthrene	0.039	0.021	0.0039	1.04		Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.04	
Anthracene	ND	0.021	0.0064	1.04	U	Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.04	
Fluoranthene	0.013	0.021	0.0020	1.04	J	Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.04	
Pyrene	0.017	0.021	0.0034	1.04	J	1-Methylnaphthalene	0.024	0.021	0.0044	1.04	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	138	28-139		2-Fluorobiphenyl	110	33-144	
p-Terphenyl-d14	160	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1120-02	05-10-1066-2	10/13/05	Solid	10/19/05	10/20/05	051019L09

WLO23

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.58	0.02	0.0039	1.04		Benzo (a) Anthracene	ND	0.021	0.0027	1.04	U
2-Methylnaphthalene	0.030	0.021	0.0025	1.04		Chrysene	0.034	0.021	0.0049	1.04	
Acenaphthylene	ND	0.021	0.0025	1.04	U	Benzo (k) Fluoranthene	ND	0.021	0.0047	1.04	U
Acenaphthene	ND	0.021	0.0052	1.04		Benzo (b) Fluoranthene	ND	0.021	0.0015	1.04	
Fluorene	ND	0.021	0.0032	1.04		Benzo (a) Pyrene	ND	0.021	0.0021	1.04	
Phenanthrene	0.22	0.02	0.0040	1.04		Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.04	
Anthracene	ND	0.021	0.0064	1.04	U	Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.04	
Fluoranthene	0.032	0.021	0.0020	1.04		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.04	
Pyrene	0.014	0.021	0.0034	1.04	J	1-Methylnaphthalene	0.021	0.021	0.0045	1.04	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	119	28-139		2-Fluorobiphenyl	107	33-144	
p-Terphenyl-d14	154	23-160					

Level IV

LS 12/8/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/19/05
Work Order No:	05-10-1067
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ1122

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-01	05-10-1067-1	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL024

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.93	0.02	0.0038	1.03		Benzo (a) Anthracene	0.016	0.021	0.0027	1.03	J
2-Methylnaphthalene	0.14	0.02	0.0025	1.03		Chrysene	0.10	0.02	0.0049	1.03	
Acenaphthylene	0.013	0.021	0.0025	1.03	J	Benzo (k) Fluoranthene	ND	0.021	0.0046	1.03	U
Acenaphthene	ND	0.021	0.0052	1.03	U	Benzo (b) Fluoranthene	0.025	0.021	0.0014	1.03	
Fluorene	0.011	0.021	0.0031	1.03	J	Benzo (a) Pyrene	0.030	0.021	0.0020	1.03	
Phenanthrene	0.24	0.02	0.0039	1.03		Benzo (g,h,i) Perylene	0.012	0.021	0.0034	1.03	J
Anthracene	0.022	0.021	0.0064	1.03		Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.03	U
Fluoranthene	0.057	0.021	0.0020	1.03		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.03	U
Pyrene	0.053	0.021	0.0034	1.03		1-Methylnaphthalene	0.094	0.021	0.0044	1.03	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	132	28-139		2-Fluorobiphenyl	107	33-144	
p-Terphenyl-d14	136	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-02	05-10-1067-2	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL025

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.070	0.02	0.0038	1.02		Benzo (a) Anthracene	ND	0.020	0.0027	1.02	U
2-Methylnaphthalene	0.022	0.02	0.0024	1.02		Chrysene	ND	0.020	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	ND	0.020	0.0031	1.02		Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	0.021	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	
Fluoranthene	ND	0.020	0.0020	1.02		Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	
Pyrene	ND	0.020	0.0033	1.02		1-Methylnaphthalene	0.017	0.02	0.0044	1.02	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	138	28-139		2-Fluorobiphenyl	119	33-144	
p-Terphenyl-d14	136	23-160					

Level III

WS 12/8/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/19/05
Work Order No:	05-10-1067
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ1122

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-03	05-10-1067-3	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL026

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual Code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.031	0.02	0.0038	1.02		Benzo (a) Anthracene	ND	0.020	0.0027	1.02	U
2-Methylnaphthalene	0.015	0.02	0.0024	1.02	J	Chrysene	ND	0.020	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	
Acenaphthene	ND	0.020	0.0051	1.02	U	Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	0.0083	0.02	0.0031	1.02	J	Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	0.021	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	
Fluoranthene	0.0083	0.02	0.0020	1.02	J	Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	
Pyrene	0.010	0.02	0.0033	1.02	J	1-Methylnaphthalene	0.011	0.02	0.0044	1.02	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	132	28-139		2-Fluorobiphenyl	98	33-144	
p-Terphenyl-d14	125	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-04	05-10-1067-4	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL027

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual Code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.011	0.021	0.0039	1.04	J	Benzo (a) Anthracene	ND	0.021	0.0027	1.04	U
2-Methylnaphthalene	ND	0.021	0.0025	1.04	U	Chrysene	ND	0.021	0.0049	1.04	
Acenaphthylene	ND	0.021	0.0025	1.04		Benzo (k) Fluoranthene	ND	0.021	0.0047	1.04	
Acenaphthene	ND	0.021	0.0052	1.04		Benzo (b) Fluoranthene	ND	0.021	0.0015	1.04	
Fluorene	ND	0.021	0.0032	1.04		Benzo (a) Pyrene	ND	0.021	0.0021	1.04	
Phenanthrene	0.011	0.021	0.0040	1.04	J	Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.04	
Anthracene	ND	0.021	0.0064	1.04	U	Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.04	
Fluoranthene	ND	0.021	0.0020	1.04		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.04	
Pyrene	ND	0.021	0.0034	1.04		1-Methylnaphthalene	ND	0.021	0.0045	1.04	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	108	28-139		2-Fluorobiphenyl	103	33-144	
p-Terphenyl-d14	156	23-160					

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical		Date Received:	10/19/05
17461 Derian Avenue, Suite 100		Work Order No:	05-10-1067
Irvine, CA 92614-5845		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: IOJ1122			Page 3 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-05	05-10-1067-3	10/14/05	Solid	10/19/05	10/24/05	051019L09

WL028

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Rev Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.48	0.02	0.0038	1.02		Benzo (a) Anthracene	0.019	0.02	0.0027	1.02	J J
2-Methylnaphthalene	0.045	0.02	0.0024	1.02		Chrysene	0.18	0.02	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	UJ C
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	0.046	0.02	0.0014	1.02	J C
Fluorene	ND	0.020	0.0031	1.02		Benzo (a) Pyrene	0.070	0.02	0.0020	1.02	
Phenanthrene	0.15	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	0.025	0.02	0.0033	1.02	J C
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	U
Fluoranthene	0.059	0.02	0.0020	1.02		Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	UJ C
Pyrene	0.056	0.02	0.0033	1.02		1-Methylnaphthalene	0.031	0.02	0.0044	1.02	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	107	28-139		2-Fluorobiphenyl	87	33-144	
p-Terphenyl-d14	126	23-160					

Method Blank	099-06-010-[illegible]	N/A	Solid	10/19/05	10/19/05	051019L09

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0037	* 1		Benzo (a) Anthracene	ND	0.020	0.0026	* 1	
2-Methylnaphthalene	ND	0.020	0.0024	1		Chrysene	ND	0.020	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1		Benzo (k) Fluoranthene	ND	0.020	0.0045	1	
Acenaphthene	ND	0.020	0.0050	1		Benzo (b) Fluoranthene	ND	0.020	0.0014	1	
Fluorene	ND	0.020	0.0031	1		Benzo (a) Pyrene	ND	0.020	0.0020	1	
Phenanthrene	ND	0.020	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	
Anthracene	ND	0.020	0.0062	1		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	
Fluoranthene	ND	0.020	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	
Pyrene	ND	0.020	0.0033	1		1-Methylnaphthalene	ND	0.020	0.0043	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	88	28-139		2-Fluorobiphenyl	89	33-144	
p-Terphenyl-d14	133	23-160					

* analysis not validated

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar- Irvine
Reviewer E. Wessling
Analysis/Method Metals by 6010B/7471A

Package ID T713MT5
Task Order 313150010
SDG No. IOJ0896
No. of Analyses 5
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for the following:
Holding Times	--rejections for MS/MSD outliers
GC/MS Tune/Inst. Performance	-- estimations for MS/MSD outliers
Calibration	-- blank spike outliers
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Ash Samples

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IOJ0896

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
SDG#:	IOJ0896
Project Manager:	P. Costa
Matrix:	Solid
Analysis:	Metals
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 7, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP Metals* (DVP-5, Rev. 2), SW-846 *Methods 6010B for ICP-AES and 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the USEPA CLP *National Functional Guidelines for Inorganic Data Review* (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
SGSS01S01 Soil	WL016	IOJ0896-01	Soil	6010/7471
SGSS01S01 Ash	WL017	IOJ0896-02	Ash	6010/7471
BKND-5 (Soil)	WL018	IOJ0896-03	Soil	6010/7471
BKND-5 (Ash)	WL019	IOJ0896-04	Ash	6010/7471
BKND-1 (Soil)	WL021	IOJ0896-06	Soil	6010/7471

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No qualifications were required. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the samples and analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COC and the dates of analyses recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP metals and 28-days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

The ICP-MS analysis was not utilized for the samples in this SGD and therefore not applicable.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with this SDG and all recoveries were acceptable. No qualifications were required.

2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were significantly below the sample detects so as not to result in qualification of the data. No qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP analyses. The recoveries were within the control limits and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS samples and mercury LCS samples as reported on the LCS on the summary forms and in the raw data were within the laboratory-established control limits with the exception of aluminum. Aluminum was recovered below the control limits at 67.8%. Aluminum was qualified as an estimated detect, "J," in all site samples in this SDG. No further qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample WL016. All RPDs were within control limits. No qualification was required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on sample WL016. Antimony and nickel were recovered below the control limits. Antimony nondetects were rejected, "R," antimony and nickel detects were qualified as estimated, "J," and nickel nondetects were qualified as estimated, "UJ." No further qualifications were required.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS analysis was not utilized for the samples in this SGD and therefore not applicable.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No sample weights were recorded for the mercury analysis; therefore, all mercury results were qualified as estimated, "J" for detects and "UJ" for nondetects. Some target analytes were reported from dilution analyses due to matrix interference. Reporting limits and MDLs were adjusted accordingly. Samples collected to support the fire and surface water monitoring programs were qualified as estimated data between the RL and MDL in keeping with the requirements of the NPDES monitoring program. Samples collected for the soil background evaluation program were qualified following the RFI program criteria. No further qualifications were required.

2.13 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

2.13.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

There were no field duplicate analyses performed in association with the site samples.

Del Mar Analytical

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ0896

Sampled: 10/13/05
Received: 10/13/05

METALS

Sample ID: IOJ0896-01 (WL016 - Soil)
Reporting Units: mg/kg dry

Analyte	Rev Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Aluminum	J	L	EPA 6010B	5J17082	10	20	**11000**	2	10/17/05	10/19/05	M-HA
Antimony	R	Q	EPA 6010B	5J17082	1.6	20	ND	2	10/17/05	10/19/05	M2, RL-1
Arsenic	J		EPA 6010B	5J17082	1.2	4.0	**2.7**	2	10/17/05	10/19/05	J
Barium			EPA 6010B	5J17082	1.6	2.0	**110**	2	10/17/05	10/19/05	M1
Beryllium	J		EPA 6010B	5J17082	0.40	1.0	**0.45**	2	10/17/05	10/19/05	RL-1, J
Boron	J		EPA 6010B	5J17082	2.0	10	**6.4**	2	10/17/05	10/19/05	B, RL-1, J
Cadmium	J		EPA 6010B	5J17082	0.40	1.0	**0.59**	2	10/17/05	10/19/05	RL-1, J
Chromium			EPA 6010B	5J17082	0.61	2.0	**17**	2	10/17/05	10/20/05	
Cobalt			EPA 6010B	5J17082	0.61	2.0	**4.9**	2	10/17/05	10/19/05	
Copper			EPA 6010B	5J17082	0.40	4.0	**11**	2	10/17/05	10/19/05	
Iron			EPA 6010B	5J17082	3.0	10	**17000**	2	10/17/05	10/20/05	M-HA
Lead			EPA 6010B	5J17082	0.81	4.0	**24**	2	10/17/05	10/19/05	
Lithium			EPA 6010B	5J17082	1.8	13	**20**	2	10/17/05	10/19/05	
Manganese			EPA 6010B	5J17082	1.6	2.0	**310**	2	10/17/05	10/20/05	M-HA
Mercury	J		EPA 7471A	5J20062	0.0030	0.020	**0.017**	1	10/20/05	10/20/05	J
Molybdenum	J		EPA 6010B	5J17082	0.40	4.0	**0.54**	2	10/17/05	10/19/05	RL-1, J
Nickel	J	Q	EPA 6010B	5J17082	0.40	4.0	**21**	2	10/17/05	10/19/05	M2
Potassium			EPA 6010B	5J17082	81	100	**4300**	2	10/17/05	10/20/05	M-HA
Selenium	U		EPA 6010B	5J17082	2.0	4.0	ND	2	10/17/05	10/19/05	RL-1
Silver	U		EPA 6010B	5J17082	0.81	2.0	ND	2	10/17/05	10/19/05	RL-1
Sodium			EPA 6010B	5J17082	30	100	**110**	2	10/17/05	10/20/05	M2
Thallium	J		EPA 6010B	5J17082	1.6	20	**4.5**	2	10/17/05	10/19/05	RL-1, J
Vanadium			EPA 6010B	5J17082	0.61	2.0	**30**	2	10/17/05	10/19/05	
Zinc			EPA 6010B	5J17082	3.0	10	**64**	2	10/17/05	10/19/05	B-1, M1
Zirconium	J		EPA 6010B	5J18069	1.5	25	**1.6**	1	10/18/05	10/22/05	J

PM Rev 1
1/23/06

Del Mar Analytical, Irvine
Michele Harper
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

Del Mar Analytical

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ0896

Sampled: 10/13/05
Received: 10/13/05

METALS

Sample ID: IOJ0896-02 (WL017 - Solid)
Reporting Units: mg/kg dry

Analyte	Rev Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Aluminum	J	L	EPA 6010B	5J17082	10	20	**12000**	2	10/17/05	10/19/05	
Antimony	R	Q	EPA 6010B	5J17082	1.6	20	ND	2	10/17/05	10/19/05	RL-1
Arsenic	J		EPA 6010B	5J17082	1.2	4.1	**2.6**	2	10/17/05	10/19/05	RL-1, J
Barium			EPA 6010B	5J17082	1.6	2.0	**240**	2	10/17/05	10/19/05	
Beryllium	J	J	EPA 6010B	5J17082	0.41	1.0	**0.41**	2	10/17/05	10/19/05	RL-1, J
Boron			EPA 6010B	5J17082	2.0	10	**57**	2	10/17/05	10/19/05	B-1
Cadmium			EPA 6010B	5J17082	0.41	1.0	**1.1**	2	10/17/05	10/19/05	
Chromium			EPA 6010B	5J17082	0.61	2.0	**18**	2	10/17/05	10/20/05	
Cobalt			EPA 6010B	5J17082	0.61	2.0	**5.4**	2	10/17/05	10/19/05	
Copper			EPA 6010B	5J17082	0.41	4.1	**30**	2	10/17/05	10/19/05	
Iron			EPA 6010B	5J17082	3.0	10	**17000**	2	10/17/05	10/20/05	
Lead			EPA 6010B	5J17082	0.81	4.1	**64**	2	10/17/05	10/19/05	
Lithium			EPA 6010B	5J17082	1.8	13	**16**	2	10/17/05	10/19/05	
Manganese			EPA 6010B	5J17082	1.6	2.0	**540**	2	10/17/05	10/20/05	
Mercury			EPA 7471A	5J20062	0.0030	0.020	**0.058**	1	10/20/05	10/20/05	
Molybdenum	J	J	EPA 6010B	5J17082	0.41	4.1	**1.0**	2	10/17/05	10/19/05	RL-1, J
Nickel	J	Q	EPA 6010B	5J17082	0.41	4.1	**21**	2	10/17/05	10/19/05	
Potassium			EPA 6010B	5J17082	81	100	**9400**	2	10/17/05	10/20/05	
Selenium	U		EPA 6010B	5J17082	2.0	4.1	ND	2	10/17/05	10/19/05	RL-1
Silver	U		EPA 6010B	5J17082	0.81	2.0	ND	2	10/17/05	10/19/05	RL-1
Sodium			EPA 6010B	5J17082	30	100	**430**	2	10/17/05	10/20/05	
Thallium	J	J	EPA 6010B	5J17082	1.6	20	**3.2**	2	10/17/05	10/19/05	RL-1, J
Vanadium			EPA 6010B	5J17082	0.61	2.0	**35**	2	10/17/05	10/19/05	
Zinc			EPA 6010B	5J17082	3.0	10	**190**	2	10/17/05	10/19/05	B-1
Zirconium	J	J	EPA 6010B	5J18069	1.5	25	**2.8**	1	10/18/05	10/22/05	J

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1/25/06
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2/22/06

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ0896

Sampled: 10/13/05
Received: 10/13/05

METALS

Sample ID: IOJ0896-03 (WL018 - Soil)
Reporting Units: mg/kg dry

Analyte	Red Quad	Quad code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Aluminum	J	L	EPA 6010B	5J17082	11	22	9800	2	10/17/05	10/19/05	
Antimony	R	Q	EPA 6010B	5J17082	1.7	22	ND	2	10/17/05	10/19/05	RL-1
Arsenic	J		EPA 6010B	5J17082	1.3	4.4	3.9	2	10/17/05	10/19/05	RL-1, J
Barium			EPA 6010B	5J17082	1.7	2.2	76	2	10/17/05	10/19/05	
Beryllium	J		EPA 6010B	5J17082	0.44	1.1	0.47	2	10/17/05	10/19/05	RL-1, J
Boron	J		EPA 6010B	5J17082	2.2	11	6.0	2	10/17/05	10/19/05	B, RL-1, J
Cadmium	J		EPA 6010B	5J17082	0.44	1.1	0.48	2	10/17/05	10/19/05	RL-1, J
Chromium			EPA 6010B	5J17082	0.65	2.2	12	2	10/17/05	10/20/05	
Cobalt			EPA 6010B	5J17082	0.65	2.2	4.1	2	10/17/05	10/19/05	
Copper			EPA 6010B	5J17082	0.44	4.4	8.0	2	10/17/05	10/19/05	
Iron			EPA 6010B	5J17082	3.3	11	15000	2	10/17/05	10/20/05	
Lead			EPA 6010B	5J17082	0.87	4.4	27	2	10/17/05	10/19/05	
Lithium			EPA 6010B	5J17082	2.0	14	19	2	10/17/05	10/19/05	
Manganese			EPA 6010B	5J17082	1.7	2.2	270	2	10/17/05	10/20/05	
Mercury	J		EPA 7471A	5J20062	0.0033	0.022	0.0091	1	10/20/05	10/20/05	J
Molybdenum	U		EPA 6010B	5J17082	0.44	4.4	ND	2	10/17/05	10/19/05	RL-1
Nickel	J	Q	EPA 6010B	5J17082	0.44	4.4	11	2	10/17/05	10/19/05	
Potassium			EPA 6010B	5J17082	87	110	3300	2	10/17/05	10/20/05	
Selenium	U		EPA 6010B	5J17082	2.2	4.4	ND	2	10/17/05	10/19/05	RL-1
Silver	U		EPA 6010B	5J17082	0.87	2.2	ND	2	10/17/05	10/19/05	RL-1
Sodium	J		EPA 6010B	5J17082	33	110	69	2	10/17/05	10/20/05	RL-1, J
Thallium	J		EPA 6010B	5J17082	1.7	22	3.3	2	10/17/05	10/19/05	RL-1, J
Vanadium			EPA 6010B	5J17082	0.65	2.2	23	2	10/17/05	10/19/05	
Zinc			EPA 6010B	5J17082	3.3	11	55	2	10/17/05	10/19/05	B-1
Zirconium	J		EPA 6010B	5J18069	1.6	27	1.7	1	10/18/05	10/22/05	J

PM 1/25/06
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Michele Harper
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ0896

Sampled: 10/13/05
Received: 10/13/05

METALS

Sample ID: IOJ0896-04 (WL019 - Solid)
Reporting Units: mg/kg dry

Analyte	Rev Qual	Qual Code	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Aluminum	J	L	EPA 6010B	5J17082	22	44	**3400**	4	10/17/05	10/20/05	
Antimony	R	Q	EPA 6010B	5J17082	3.5	44	ND	4	10/17/05	10/20/05	RL-1
Arsenic	U		EPA 6010B	5J17082	2.7	8.8	ND	4	10/17/05	10/20/05	RL-1
Barium			EPA 6010B	5J17082	3.5	4.4	**360**	4	10/17/05	10/20/05	
Beryllium	U		EPA 6010B	5J17082	0.88	2.2	ND	4	10/17/05	10/20/05	RL-1
Boron			EPA 6010B	5J17082	4.4	22	**85**	4	10/17/05	10/20/05	B-1
Cadmium	U		EPA 6010B	5J17082	0.88	2.2	ND	4	10/17/05	10/20/05	RL-1
Chromium	J	J	EPA 6010B	5J17082	1.3	4.4	**2.3**	4	10/17/05	10/20/05	RL-1, J
Cobalt	J	J	EPA 6010B	5J17082	1.3	4.4	**1.6**	4	10/17/05	10/20/05	RL-1, J
Copper			EPA 6010B	5J17082	0.88	8.8	**25**	4	10/17/05	10/20/05	
Iron			EPA 6010B	5J17082	6.6	22	**4200**	4	10/17/05	10/20/05	
Lead	J	J	EPA 6010B	5J17082	1.8	8.8	**5.2**	4	10/17/05	10/20/05	RL-1, J
Lithium	J	J	EPA 6010B	5J17082	4.0	28	**9.4**	4	10/17/05	10/20/05	RL-1, J
Manganese			EPA 6010B	5J17082	3.5	4.4	**610**	4	10/17/05	10/20/05	
Mercury	J	J	EPA 7471A	5J20062	0.0033	0.022	**0.0053**	1	10/20/05	10/20/05	J
Molybdenum	U		EPA 6010B	5J17082	0.88	8.8	ND	4	10/17/05	10/20/05	RL-1
Nickel	J	J Q	EPA 6010B	5J17082	0.88	8.8	**7.0**	4	10/17/05	10/20/05	RL-1, J
Potassium			EPA 6010B	5J17082	180	220	**58000**	4	10/17/05	10/20/05	
Selenium	U		EPA 6010B	5J17082	4.4	8.8	ND	4	10/17/05	10/20/05	RL-1
Silver	U		EPA 6010B	5J17082	1.8	4.4	ND	4	10/17/05	10/20/05	RL-1
Sodium			EPA 6010B	5J17082	66	220	**1000**	4	10/17/05	10/20/05	
Thallium	U		EPA 6010B	5J17082	3.5	44	ND	4	10/17/05	10/20/05	RL-1
Vanadium			EPA 6010B	5J17082	1.3	4.4	**8.4**	4	10/17/05	10/20/05	
Zinc			EPA 6010B	5J17082	6.6	22	**64**	4	10/17/05	10/20/05	B-1
Zirconium	U		EPA 6010B	5J18069	3.3	55	ND	2	10/18/05	10/22/05	RL-1

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Michele Harper
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ0896

Sampled: 10/13/05
Received: 10/13/05

METALS

Analyte	Rev Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0896-06 (WL021 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	J	L	EPA 6010B	5J17082	10	21	**12000**	2	10/17/05	10/19/05	
Antimony	R	Q	EPA 6010B	5J17082	1.7	21	ND	2	10/17/05	10/19/05	RL-1
Arsenic	J		EPA 6010B	5J17082	1.2	4.1	**3.4**	2	10/17/05	10/19/05	RL-1, J
Barium			EPA 6010B	5J17082	1.7	2.1	**59**	2	10/17/05	10/19/05	
Beryllium	J		EPA 6010B	5J17082	0.41	1.0	**0.54**	2	10/17/05	10/19/05	RL-1, J
Boron	J		EPA 6010B	5J17082	2.1	10	**6.6**	2	10/17/05	10/19/05	B, RL-1, J
Cadmium	J		EPA 6010B	5J17082	0.41	1.0	**0.57**	2	10/17/05	10/19/05	RL-1, J
Chromium			EPA 6010B	5J17082	0.62	2.1	**16**	2	10/17/05	10/20/05	
Cobalt			EPA 6010B	5J17082	0.62	2.1	**6.3**	2	10/17/05	10/19/05	
Copper			EPA 6010B	5J17082	0.41	4.1	**12**	2	10/17/05	10/19/05	
Iron			EPA 6010B	5J17082	3.1	10	**19000**	2	10/17/05	10/20/05	
Lead			EPA 6010B	5J17082	0.83	4.1	**9.5**	2	10/17/05	10/19/05	
Lithium			EPA 6010B	5J17082	1.9	13	**18**	2	10/17/05	10/19/05	
Manganese			EPA 6010B	5J17082	1.7	2.1	**390**	2	10/17/05	10/20/05	
Mercury	J		EPA 7471A	5J20084	0.0031	0.021	**0.011**	1	10/20/05	10/20/05	J
Molybdenum	U		EPA 6010B	5J17082	0.41	4.1	ND	2	10/17/05	10/19/05	RL-1
Nickel	J	Q	EPA 6010B	5J17082	0.41	4.1	**14**	2	10/17/05	10/19/05	
Potassium			EPA 6010B	5J17082	83	100	**3400**	2	10/17/05	10/20/05	
Selenium	U		EPA 6010B	5J17082	2.1	4.1	ND	2	10/17/05	10/19/05	RL-1
Silver	U		EPA 6010B	5J17082	0.83	2.1	ND	2	10/17/05	10/19/05	RL-1
Sodium	J		EPA 6010B	5J17082	31	100	**64**	2	10/17/05	10/20/05	RL-1, J
Thallium	J		EPA 6010B	5J17082	1.7	21	**3.3**	2	10/17/05	10/19/05	RL-1, J
Vanadium			EPA 6010B	5J17082	0.62	2.1	**27**	2	10/17/05	10/19/05	
Zinc			EPA 6010B	5J17082	3.1	10	**51**	2	10/17/05	10/19/05	B-1
Zirconium	U		EPA 6010B	5J18069	1.6	26	ND	1	10/18/05	10/22/05	

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Rev 1

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Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar- Irvine
Reviewer E. Wessling
Analysis/Method Metals by 6010B/7471A

Package ID T713MT3
Task Order 313150010
SDG No. IOJ01122
No. of Analyses 5
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	-- blank contamination
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Ash Samples

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IOJ1122

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
SDG#:	IOJ1122
Project Manager:	P. Costa
Matrix:	Solid
Analysis:	Metals
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 7, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP Metals* (DVP-5, Rev. 2), SW-846 *Methods 6010B for ICP-AES and 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the USEPA CLP *National Functional Guidelines for Inorganic Data Review* (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
BCSS09S01	WL024	IOJ1122-01	Ash	6010/7471
BCSS09S01	WL025	IOJ1122-02	Soil	6010/7471
BZSS05S01	WL026	IOJ1122-03	Soil	6010/7471
BZSS06S01	WL027	IOJ1122-04	Soil	6010/7471
BZSS05S01	WL028	IOJ1122-05	Ash	6010/7471

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples in this SDG was received at the laboratory above the temperature limits of 4°C ±2°C, at 15°C; however, as the samples were not volatile in nature, no qualifications were required. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the samples and analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COC and the dates of analyses recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP metals and 28-days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

The ICP-MS analysis was not utilized for the samples in this SGD and therefore not applicable.

2.3 CALIBRATION

The ICV results showed acceptable recoveries, 90-110% for ICP metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with this SDG and all recoveries were acceptable. No qualifications were required.

2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were significantly below the sample detects so as not to result in qualification of the data with the exception of the CCB associated with the analysis of nickel in sample WL025. Nickel in sample WL025 was qualified as an estimated nondetect, "UJ," No further qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP analyses. The recoveries were within the control limits and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS samples, ICP/MS LCS samples and mercury LCS samples as reported on the LCS on the summary forms and in the raw data were within the laboratory-established control limits. No qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on samples not associated with these sites. No evaluation was made for the samples in these SDGs.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on samples not associated with these sites. No evaluation was made for the samples in these SDGs.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

The ICP-MS analysis was not utilized for the samples in this SGD and therefore not applicable.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Some target analytes were reported from dilution analyses due to matrix interference. Reporting limits and MDLs were adjusted accordingly. Samples were qualified following the RFI program criteria. No further qualifications were required.

2.13 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

2.13.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

There were no field duplicate analyses performed in association with the site samples.

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ1122

Sampled: 10/14/05
Received: 10/14/05

METALS

Sample ID: IOJ1122-01 (WL024 - Solid)
Reporting Units: mg/kg dry

Analyte	Qual	Qual Code	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Aluminum			EPA 6010B	5J18102	10	21	13000	2	10/18/05	10/25/05	
Antimony	U		EPA 6010B	5J18102	1.7	21	ND	2	10/18/05	10/25/05	RL-1
Arsenic	J		EPA 6010B	5J18102	1.2	4.1	3.9	2	10/18/05	10/25/05	RL-1, J
Barium			EPA 6010B	5J18102	1.7	2.1	300	2	10/18/05	10/25/05	
Beryllium	U		EPA 6010B	5J18102	0.41	1.0	ND	2	10/18/05	10/25/05	RL-1
Boron			EPA 6010B	5J18102	2.1	10	160	2	10/18/05	10/25/05	
Cadmium	U		EPA 6010B	5J18102	0.41	1.0	ND	2	10/18/05	10/25/05	RL-1
Chromium			EPA 6010B	5J18102	0.62	2.1	15	2	10/18/05	10/25/05	
Cobalt			EPA 6010B	5J18102	0.62	2.1	4.5	2	10/18/05	10/25/05	
Copper			EPA 6010B	5J18102	0.41	4.1	64	2	10/18/05	10/25/05	
Iron			EPA 6010B	5J18102	3.1	10	12000	2	10/18/05	10/25/05	
Lead			EPA 6010B	5J18102	0.83	4.1	9.7	2	10/18/05	10/25/05	
Lithium			EPA 6010B	5J18102	1.9	13	14	2	10/19/05	10/25/05	
Manganese			EPA 6010B	5J18102	1.7	2.1	520	2	10/19/05	10/25/05	
Mercury	J		EPA 7471A	5J20115	0.0031	0.021	0.0038	1	10/20/05	10/21/05	J
Molybdenum	J		EPA 6010B	5J18102	0.41	4.1	1.7	2	10/18/05	10/25/05	RL-1, J
Nickel			EPA 6010B	5J18102	0.41	4.1	24	2	10/18/05	10/25/05	
Potassium			EPA 6010B	5J18102	83	100	53000	2	10/19/05	10/25/05	
Selenium	U		EPA 6010B	5J18102	2.1	4.1	ND	2	10/18/05	10/25/05	RL-1
Silver	U		EPA 6010B	5J18102	0.83	2.1	ND	2	10/18/05	10/25/05	RL-1
Sodium			EPA 6010B	5J18102	31	100	3100	2	10/19/05	10/25/05	
Thallium	U		EPA 6010B	5J18102	1.7	21	ND	2	10/18/05	10/25/05	RL-1
Vanadium			EPA 6010B	5J18102	0.62	2.1	28	2	10/18/05	10/25/05	
Zinc			EPA 6010B	5J18102	3.1	10	150	2	10/18/05	10/25/05	
Zirconium	J		EPA 6010B	5J18102	3.1	52	4.1	2	10/18/05	10/31/05	RL-1, J

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ1122

Sampled: 10/14/05
Received: 10/14/05

METALS

Sample ID: IOJ1122-02 (WL025 - Soil)
Reporting Units: mg/kg dry

Analyte	Rev Qual	Qual code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Aluminum			EPA 6010B	5J18102	5.1	10	9900	1	10/18/05	10/24/05	
Antimony	U		EPA 6010B	5J18102	0.81	10	ND	1	10/18/05	10/24/05	
Arsenic			EPA 6010B	5J18102	0.61	2.0	11	1	10/18/05	10/24/05	
Barium			EPA 6010B	5J18102	0.81	1.0	69	1	10/18/05	10/24/05	
Beryllium			EPA 6010B	5J18102	0.20	0.51	0.54	1	10/18/05	10/24/05	
Boron	J		EPA 6010B	5J18102	1.0	5.1	3.5	1	10/18/05	10/24/05	J
Cadmium	J		EPA 6010B	5J18102	0.20	0.51	0.47	1	10/18/05	10/24/05	J
Chromium			EPA 6010B	5J18102	0.30	1.0	15	1	10/18/05	10/24/05	
Cobalt			EPA 6010B	5J18102	0.30	1.0	4.5	1	10/18/05	10/24/05	
Copper			EPA 6010B	5J18102	0.20	2.0	9.2	1	10/19/05	10/24/05	
Iron			EPA 6010B	5J18102	1.5	5.1	16000	1	10/19/05	10/24/05	
Lead			EPA 6010B	5J18102	0.40	2.0	10	1	10/18/05	10/24/05	
Lithium			EPA 6010B	5J18102	0.91	6.4	17	1	10/19/05	10/24/05	
Manganese			EPA 6010B	5J18102	0.81	1.0	260	1	10/19/05	10/24/05	
Mercury	UJ	B	EPA 7471A	5J20062	0.0030	0.020	ND	1	10/20/05	10/20/05	
Molybdenum	J		EPA 6010B	5J18102	0.20	2.0	0.42	1	10/18/05	10/24/05	J
Nickel			EPA 6010B	5J18102	0.20	2.0	11	1	10/18/05	10/24/05	
Potassium			EPA 6010B	5J18102	40	51	3700	1	10/19/05	10/24/05	
Selenium	U		EPA 6010B	5J18102	1.0	2.0	ND	1	10/18/05	10/24/05	
Silver	U		EPA 6010B	5J18102	0.40	1.0	ND	1	10/18/05	10/24/05	
Sodium			EPA 6010B	5J18102	15	51	150	1	10/19/05	10/24/05	
Thallium	J		EPA 6010B	5J18102	0.81	10	1.9	1	10/18/05	10/24/05	J
Vanadium			EPA 6010B	5J18102	0.30	1.0	27	1	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	1.5	5.1	53	1	10/18/05	10/24/05	
Zirconium	J		EPA 6010B	5J18102	1.5	25	1.6	1	10/18/05	10/31/05	J

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Michele Harper
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ1122

Sampled: 10/14/05
Received: 10/14/05

METALS

Sample ID: IOJ1122-03 (WL026 - Soil)
Reporting Units: mg/kg dry

Analyte	Rev Qual	Qual Code	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Aluminum			EPA 6010B	5J18102	5.0	10	**11000**	1	10/18/05	10/24/05	
Antimony	U		EPA 6010B	5J18102	0.81	10	ND	1	10/18/05	10/24/05	
Arsenic			EPA 6010B	5J18102	0.60	2.0	**4.9**	1	10/18/05	10/24/05	
Barium			EPA 6010B	5J18102	0.81	1.0	**100**	1	10/18/05	10/24/05	
Beryllium			EPA 6010B	5J18102	0.20	0.50	**0.62**	1	10/18/05	10/24/05	
Boron	X		EPA 6010B	5J18102	1.0	5.0	**3.2**	1	10/18/05	10/24/05	J
Cadmium			EPA 6010B	5J18102	0.20	0.50	**0.62**	1	10/18/05	10/24/05	
Chromium			EPA 6010B	5J18102	0.30	1.0	**17**	1	10/18/05	10/24/05	
Cobalt			EPA 6010B	5J18102	0.30	1.0	**5.3**	1	10/18/05	10/24/05	
Copper			EPA 6010B	5J18102	0.20	2.0	**13**	1	10/19/05	10/24/05	
Iron			EPA 6010B	5J18102	1.5	5.0	**17000**	1	10/19/05	10/24/05	
Lead			EPA 6010B	5J18102	0.40	2.0	**17**	1	10/18/05	10/24/05	
Lithium			EPA 6010B	5J18102	0.91	6.3	**20**	1	10/19/05	10/24/05	
Manganese			EPA 6010B	5J18102	0.81	1.0	**340**	1	10/19/05	10/24/05	
Mercury	X		EPA 7471A	5J20115	0.0030	0.020	**0.0031**	1	10/20/05	10/21/05	J
Molybdenum	X		EPA 6010B	5J18102	0.20	2.0	**0.34**	1	10/18/05	10/24/05	J
Nickel			EPA 6010B	5J18102	0.20	2.0	**12**	1	10/18/05	10/24/05	
Potassium			EPA 6010B	5J18102	40	50	**5400**	1	10/19/05	10/24/05	
Selenium	U		EPA 6010B	5J18102	1.0	2.0	ND	1	10/18/05	10/24/05	
Silver	U		EPA 6010B	5J18102	0.40	1.0	ND	1	10/18/05	10/24/05	
Sodium			EPA 6010B	5J18102	15	50	**180**	1	10/19/05	10/24/05	
Thallium	X		EPA 6010B	5J18102	0.81	10	**1.8**	1	10/18/05	10/24/05	J
Vanadium			EPA 6010B	5J18102	0.30	1.0	**32**	1	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	1.5	5.0	**67**	1	10/18/05	10/24/05	
Zirconium	U		EPA 6010B	5J18102	1.5	25	ND	1	10/18/05	10/31/05	

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ1122

Sampled: 10/14/05
Received: 10/14/05

METALS

Analyte	Rev Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1122-04 (WL027 - Soil)											
Reporting Units: mg/kg dry											
Aluminum			EPA 6010B	5J18102	5.1	10	**12000**	1	10/18/05	10/24/05	
Antimony	U		EPA 6010B	5J18102	0.81	10	ND	1	10/18/05	10/24/05	
Arsenic			EPA 6010B	5J18102	0.61	2.0	**3.6**	1	10/18/05	10/24/05	
Barium			EPA 6010B	5J18102	0.81	1.0	**82**	1	10/18/05	10/24/05	
Beryllium	J		EPA 6010B	5J18102	0.20	0.51	**0.45**	1	10/18/05	10/24/05	J
Boron	U		EPA 6010B	5J18102	1.0	5.1	ND	1	10/18/05	10/24/05	
Cadmium			EPA 6010B	5J18102	0.20	0.51	**0.54**	1	10/18/05	10/24/05	
Chromium			EPA 6010B	5J18102	0.30	1.0	**18**	1	10/18/05	10/24/05	
Cobalt			EPA 6010B	5J18102	0.30	1.0	**5.4**	1	10/18/05	10/24/05	
Copper			EPA 6010B	5J18102	0.20	2.0	**8.9**	1	10/19/05	10/24/05	
Iron			EPA 6010B	5J18102	1.5	5.1	**19000**	1	10/19/05	10/24/05	
Lead			EPA 6010B	5J18102	0.41	2.0	**12**	1	10/18/05	10/24/05	
Lithium			EPA 6010B	5J18102	0.91	6.4	**28**	1	10/19/05	10/24/05	
Manganese			EPA 6010B	5J18102	0.81	1.0	**350**	1	10/19/05	10/24/05	
Mercury	J		EPA 7471A	5J20115	0.0030	0.020	**0.011**	1	10/20/05	10/21/05	J
Molybdenum	J		EPA 6010B	5J18102	0.20	2.0	**0.27**	1	10/18/05	10/24/05	J
Nickel			EPA 6010B	5J18102	0.20	2.0	**12**	1	10/18/05	10/24/05	
Potassium			EPA 6010B	5J18102	41	51	**3900**	1	10/19/05	10/24/05	
Selenium	U		EPA 6010B	5J18102	1.0	2.0	ND	1	10/18/05	10/24/05	
Silver	U		EPA 6010B	5J18102	0.41	1.0	ND	1	10/18/05	10/24/05	
Sodium			EPA 6010B	5J18102	15	51	**86**	1	10/19/05	10/24/05	
Thallium	J		EPA 6010B	5J18102	0.81	10	**2.2**	1	10/18/05	10/24/05	J
Vanadium			EPA 6010B	5J18102	0.30	1.0	**37**	1	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	1.5	5.1	**61**	1	10/18/05	10/24/05	
Zirconium	J		EPA 6010B	5J18102	1.5	25	**2.4**	1	10/18/05	10/31/05	J

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ1122

Sampled: 10/14/05
Received: 10/14/05

METALS

Analyte	Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1122-05 (WL028 - Solid)											
Reporting Units: mg/kg dry											
Aluminum			EPA 6010B	5J18102	10	20	**4400**	2	10/18/05	10/24/05	
Antimony	U		EPA 6010B	5J18102	1.6	20	ND	2	10/18/05	10/24/05	RL-1
Arsenic	U		EPA 6010B	5J18102	1.2	4.0	ND	2	10/18/05	10/24/05	RL-1
Barium			EPA 6010B	5J18102	1.6	2.0	**130**	2	10/18/05	10/24/05	
Beryllium	U		EPA 6010B	5J18102	0.40	1.0	ND	2	10/18/05	10/24/05	RL-1
Boron			EPA 6010B	5J18102	2.0	10	**48**	2	10/18/05	10/24/05	
Cadmium	U		EPA 6010B	5J18102	0.40	1.0	ND	2	10/18/05	10/24/05	RL-1
Chromium			EPA 6010B	5J18102	0.60	2.0	**6.1**	2	10/18/05	10/24/05	
Cobalt	~~J~~	~~J~~	EPA 6010B	5J18102	0.60	2.0	**1.6**	2	10/18/05	10/24/05	RL-1, J
Copper			EPA 6010B	5J18102	0.40	4.0	**15**	2	10/19/05	10/24/05	
Iron			EPA 6010B	5J18102	3.0	10	**5300**	2	10/19/05	10/24/05	
Lead			EPA 6010B	5J18102	0.80	4.0	**33**	2	10/18/05	10/24/05	
Lithium	~~J~~	~~J~~	EPA 6010B	5J18102	1.8	13	**7.6**	2	10/19/05	10/24/05	RL-1, J
Manganese			EPA 6010B	5J18102	1.6	2.0	**220**	2	10/19/05	10/24/05	
Mercury	U		EPA 7471A	5J20115	0.0030	0.020	ND	1	10/20/05	10/21/05	
Molybdenum	U		EPA 6010B	5J18102	0.40	4.0	ND	2	10/18/05	10/24/05	RL-1
Nickel			EPA 6010B	5J18102	0.40	4.0	**9.3**	2	10/18/05	10/24/05	
Potassium			EPA 6010B	5J18102	80	100	**17000**	2	10/19/05	10/24/05	
Selenium	U		EPA 6010B	5J18102	2.0	4.0	ND	2	10/18/05	10/24/05	RL-1
Silver	U		EPA 6010B	5J18102	0.80	2.0	ND	2	10/18/05	10/24/05	RL-1
Sodium			EPA 6010B	5J18102	30	100	**1200**	2	10/19/05	10/24/05	
Thallium	U		EPA 6010B	5J18102	1.6	20	ND	2	10/18/05	10/24/05	RL-1
Vanadium			EPA 6010B	5J18102	0.60	2.0	**11**	2	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	3.0	10	**57**	2	10/18/05	10/24/05	
Zirconium	U		EPA 6010B	5J18102	3.0	50	ND	2	10/18/05	10/31/05	RL-1

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Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Alta
Reviewer E. Wessling
Analysis/Method Dioxins by 1613

Package ID T713DF6
Task Order 313150010
SDG No. IOJ0896
No. of Analyses 5
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	-- estimated maximum possible concentration interferences
GC/MS Tune/Inst. Performance	-- lack of confirmation analysis of 2,3,7,8-TCDF
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.

[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Surface Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IOJ0896

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ0896
Project Manager:	A. Lenox
Matrix:	Solid
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 20, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National Functional Guidelines For Chlorinated Dioxin/Furan Data Review* (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample Identification

EPA ID	MWH ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
WL016	SGSS01S01 Soil	IOJ0896-01	26809-001	Soil	1613
WL017	SGSS01S01 Ash	IOJ0896-02	26809-002	Ash	1613
WL018	BKND-5 (Soil)	IOJ0896-03	26809-003	Soil	1613
WL019	BKND-5 (Ash)	IOJ0896-04	26809-004	Ash	1613
WL021	BKND-1 (Soil)	IOJ0896-06	26809-005	Soil	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received within temperature limits of 4°C ±2°C. No qualifications were required. According to the case narrative and laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 6/06/2005. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

One method blank (Blank 7348-0-MB001) was extracted and analyzed with the samples in this SDG. No target or total compounds were reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (7348-0-OPR001) was extracted and analyzed with the samples in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no identified field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No further qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." Confirmation for 2,3,7,8-TCDF detected in samples WL016, WL017 and WL021 was not performed; therefore, 2,3,7,8-TCDF was qualified as estimated, "J." No further qualifications were required.

ALTA

Sample ID: IOJ0896-01 — **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-001	Date Received:	17-Oct-05
Project:	IOJ0896	Sample Size:	10.43 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	13-Oct-05	%Solids:	98.7	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1152						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.138		
J	1,2,3,7,8-PeCDD	0.334			J
	1,2,3,4,7,8-HxCDD	0.607			J
	1,2,3,6,7,8-HxCDD	1.29			J
	1,2,3,7,8,9-HxCDD	1.20			J
	1,2,3,4,6,7,8-HpCDD	23.0			
	OCDD	168			
J	2,3,7,8-TCDF	0.284			J
	1,2,3,7,8-PeCDF	0.275			J
	2,3,4,7,8-PeCDF	0.418			J
	1,2,3,4,7,8-HxCDF	0.375			J
	1,2,3,6,7,8-HxCDF	0.382			J
J	2,3,4,6,7,8-HxCDF	0.420			J
U	1,2,3,7,8,9-HxCDF	ND	0.0918		
	1,2,3,4,6,7,8-HpCDF	3.73			
J	1,2,3,4,7,8,9-HpCDF	0.308			J
	OCDF	8.37			

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	75.1	25 - 164	
	13C-1,2,3,7,8-PeCDD	72.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	89.7	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	83.5	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	84.3	23 - 140	
	13C-OCDD	64.8	17 - 157	
	13C-2,3,7,8-TCDF	71.9	24 - 169	
	13C-1,2,3,7,8-PeCDF	70.7	24 - 185	
	13C-2,3,4,7,8-PeCDF	69.2	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	82.2	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	78.7	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	84.4	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	86.5	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	78.6	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	83.8	26 - 138	
	13C-OCDF	70.3	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	73.5	35 - 197	

Totals		
Total TCDD	1.19	
Total PeCDD	3.21	4.12
Total HxCDD	12.7	
Total HpCDD	46.5	
Total TCDF	5.23	5.46
Total PeCDF	5.08	5.51
Total HxCDF	6.19	
Total HpCDF	9.09	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 1.29

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 14:36

ALTA

Sample ID: IOJ0896-02 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-002	Date Received:	17-Oct-05
Project:	IOJ0896	Sample Size:	5.23 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	13-Oct-05	%Solids:	98.4	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1200						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.175		
J	1,2,3,7,8-PeCDD	0.288			J
U	1,2,3,4,7,8-HxCDD	ND	0.596		
U	1,2,3,6,7,8-HxCDD	ND	0.613		
J	1,2,3,7,8,9-HxCDD	0.562			J
	1,2,3,4,6,7,8-HpCDD	5.87			
	OCDD	23.8			
J	2,3,7,8-TCDF	0.212			J
U	1,2,3,7,8-PeCDF	ND	0.295		
J	2,3,4,7,8-PeCDF	0.286			J
J	1,2,3,4,7,8-HxCDF	0.268			J
J	1,2,3,6,7,8-HxCDF	0.184			J
U	2,3,4,6,7,8-HxCDF	ND	0.109		
U	1,2,3,7,8,9-HxCDF	ND	0.148		
J	1,2,3,4,6,7,8-HpCDF	0.485			J
U	1,2,3,4,7,8,9-HpCDF	ND	0.218		
U1	OCDF	ND		0.661	
	Totals				
U	Total TCDD	ND		0.220	
	Total PeCDD	3.55		4.41	
	Total HxCDD	7.42			
	Total HpCDD	16.0			
	Total TCDF	2.16		2.40	
	Total PeCDF	1.46		1.85	
	Total HxCDF	1.36			
	Total HpCDF	1.03			

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	80.8	25 - 164	
	13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	91.6	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	92.0	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	91.9	23 - 140	
	13C-OCDD	67.5	17 - 157	
	13C-2,3,7,8-TCDF	81.0	24 - 169	
	13C-1,2,3,7,8-PeCDF	76.4	24 - 185	
	13C-2,3,4,7,8-PeCDF	74.7	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	83.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	82.3	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	87.5	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	90.2	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	81.5	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	86.8	26 - 138	
	13C-OCDF	72.5	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	77.7	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.497

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 14:36

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ALTA

Sample ID: IOJ0896-03 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-003	Date Received:	17-Oct-05
Project:	IOJ0896	Sample Size:	11.82 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	13-Oct-05	%Solids:	86.5	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1348						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.0870		
J	1,2,3,7,8-PeCDD	0.279			J
	1,2,3,4,7,8-HxCDD	0.449			J
	1,2,3,6,7,8-HxCDD	0.950			J
	1,2,3,7,8,9-HxCDD	0.888			J
	1,2,3,4,6,7,8-HpCDD	20.4			
	OCDD	211			
UD * 10	2,3,7,8-TCDF	ND		0.301	
J	1,2,3,7,8-PeCDF	0.178			J
J	2,3,4,7,8-PeCDF	0.293			J
UJ * 10	1,2,3,4,7,8-HxCDF	ND		0.287	
J	1,2,3,6,7,8-HxCDF	0.270			J
J	2,3,4,6,7,8-HxCDF	0.337			J
UJ * 10	1,2,3,7,8,9-HxCDF	ND		0.130	
	1,2,3,4,6,7,8-HpCDF	3.16			
J	1,2,3,4,7,8,9-HpCDF	0.331			J
	OCDF	9.83			

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	87.9	25 - 164	
	13C-1,2,3,7,8-PeCDD	83.2	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	96.2	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	92.3	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	90.5	23 - 140	
	13C-OCDD	64.3	17 - 157	
	13C-2,3,7,8-TCDF	82.4	24 - 169	
	13C-1,2,3,7,8-PeCDF	81.8	24 - 185	
	13C-2,3,4,7,8-PeCDF	79.3	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	89.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	86.3	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	91.3	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	95.0	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	82.9	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	90.0	26 - 138	
	13C-OCDF	70.0	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	88.3	35 - 197	

Totals		
Total TCDD	0.774	0.890
Total PeCDD	2.48	2.83
Total HxCDD	9.75	
Total HpCDD	42.8	
Total TCDF	3.13	3.96
Total PeCDF	3.83	4.09
Total HxCDF	4.17	4.58
Total HpCDF	8.59	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 1.04

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 14:36

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ALTA

Sample ID: IOJ0896-04 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-004	Date Received:	17-Oct-05
Project:	IOJ0896	Sample Size:	5.42 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	13-Oct-05	%Solids:	94.4	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1356						

		Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
J		2,3,7,8-TCDD	0.363			J
J		1,2,3,7,8-PeCDD	0.749			J
J		1,2,3,4,7,8-HxCDD	0.916			J
		1,2,3,6,7,8-HxCDD	5.57			
J		1,2,3,7,8,9-HxCDD	3.35			J
		1,2,3,4,6,7,8-HpCDD	100			
		OCDD	470			
U		2,3,7,8-TCDF	ND	0.114		
U		1,2,3,7,8-PeCDF	ND	0.159		
U		2,3,4,7,8-PeCDF	ND	0.139		
UJ	*10	1,2,3,4,7,8-HxCDF	ND		0.241	
UJ	*10	1,2,3,6,7,8-HxCDF	ND		0.195	
J		2,3,4,6,7,8-HxCDF	0.281			J
U		1,2,3,7,8,9-HxCDF	ND	0.0764		
J		1,2,3,4,6,7,8-HpCDF	3.45			J
J		1,2,3,4,7,8,9-HpCDF	0.491			J
		OCDF	17.0			

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	78.4	25 - 164	
	13C-1,2,3,7,8-PeCDD	79.7	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	89.8	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	85.3	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	87.9	23 - 140	
	13C-OCDD	60.6	17 - 157	
	13C-2,3,7,8-TCDF	74.8	24 - 169	
	13C-1,2,3,7,8-PeCDF	74.8	24 - 185	
	13C-2,3,4,7,8-PeCDF	72.8	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	80.9	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	79.4	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	84.8	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	89.2	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	79.3	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	89.8	26 - 138	
	13C-OCDF	68.0	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	75.7	35 - 197	

Totals		
Total TCDD	7.10	8.46
Total PeCDD	12.5	13.8
Total HxCDD	42.7	
Total HpCDD	171	
Total TCDF	0.481	0.683
Total PeCDF	0.986	
Total HxCDF	2.76	3.55
Total HpCDF	12.1	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 3.28

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 14:36

ALTA

Sample ID: IOJ0896-06

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-005	Date Received:	17-Oct-05
Project:	IOJ0896	Sample Size:	9.99 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	13-Oct-05	%Solids:	97.8	Date Analyzed DB-5:	27-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1420						

Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	ND	0.0622		
1,2,3,7,8-PeCDD	ND	0.0646		
1,2,3,4,7,8-HxCDD	0.192			J
1,2,3,6,7,8-HxCDD	0.174			J
1,2,3,7,8,9-HxCDD	ND	0.0894		
1,2,3,4,6,7,8-HpCDD	3.40			
OCDD	48.0			
2,3,7,8-TCDF	0.163			J
1,2,3,7,8-PeCDF	ND		0.0811	
2,3,4,7,8-PeCDF	ND		0.137	
1,2,3,4,7,8-HxCDF	0.135			J
1,2,3,6,7,8-HxCDF	0.0912			J
2,3,4,6,7,8-HxCDF	ND		0.0852	
1,2,3,7,8,9-HxCDF	ND	0.0588		
1,2,3,4,6,7,8-HpCDF	0.561			J
1,2,3,4,7,8,9-HpCDF	ND	0.0839		
OCDF	0.970			J
Totals				
Total TCDD	ND	0.0622		
Total PeCDD	0.149		0.287	
Total HxCDD	1.30			
Total HpCDD	9.59			
Total TCDF	0.163		0.981	
Total PeCDF	1.02		1.24	
Total HxCDF	1.03		1.30	
Total HpCDF	1.27			

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	75.8	25 - 164	
	13C-1,2,3,7,8-PeCDD	73.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	83.0	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	84.0	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	85.4	23 - 140	
	13C-OCDD	54.2	17 - 157	
	13C-2,3,7,8-TCDF	73.2	24 - 169	
	13C-1,2,3,7,8-PeCDF	73.1	24 - 185	
	13C-2,3,4,7,8-PeCDF	70.5	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	78.4	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	76.1	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	81.1	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	85.1	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	73.3	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	83.5	26 - 138	
	13C-OCDF	63.6	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	75.9	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.164

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 14:36

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T713WC14
Task Order 313150010
SDG No. IQJ0896
No. of Analyses 5

Laboratory Del Mar - Irvine
Reviewer E. Wessling
Analysis/Method General Minerals

Date: December 12, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	- no sample weights for surfactants
GC/MS Tune/Inst. Performance	- HT for MBAS
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOJ0896

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Support
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ0896
Project Manager:	P. Costa
Matrix:	Soil and Ash
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	5
Reviewer:	E. Wessling
Date of Review:	December 12, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.3, and 9014, Standard Methods for the Examination of Water and Wastewater Method SM5540-CMOD*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
SGSS01S01 Soil	WL016	IOJ0896-01	Soil	General Minerals
SGSS01S01 Ash	WL017	IOJ0896-02	Solid	General Minerals
BKND-5 (Soil)	WL018	IOJ0896-03	Soil	General Minerals
BKND-5 (Ash)	WL019	IOJ0896-04	Solid	General Minerals
BKND-1 (Soil)	WL0021	IOJ0896-06	Soil	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of 4°C + 2°C. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel and accounted for the samples and all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analysis. The analytical holding times for all analyses except MBAS were met. MBAS results were qualified as estimated, "J," for detects and "UJ," for nondetects. No further qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were > 0.995. Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

Target compounds were not detected in the associated method blanks, (5J17057-BLK1, 5J19111-BLK1, 5J19114-BLK1, 5J19117-BLK1 and 5J22002-BLK1). Raw data was reviewed to verify the blank data. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the laboratory-established control limits. Raw data was reviewed to verify the values reported for the LCS recoveries. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. Actual sample weights were not recorded for the MBAS analysis. All MBAS data were qualified as estimated, "J," for detects and "UJ," for nondetects. No transcription errors or calculation errors were noted. Results reported by the laboratory between the MDL and reporting limit were qualified as "J." Samples collected for the soil background evaluation program were qualified following the RFI program criteria. No further qualifications were required.

2.11 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ0896

Sampled: 10/13/05
Received: 10/13/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0896-01 (WL016 - Soil)									
Reporting Units: %									
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**99**	1	10/19/05	10/19/05	
Sample ID: IOJ0896-02 (WL017 - Solid)									
Reporting Units: %									
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**98**	1	10/19/05	10/19/05	
Sample ID: IOJ0896-03 (WL018 - Soil)									
Reporting Units: %									
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**92**	1	10/19/05	10/19/05	
Sample ID: IOJ0896-04 (WL019 - Solid)									
Reporting Units: %									
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**90**	1	10/19/05	10/19/05	
Sample ID: IOJ0896-06 (WL021 - Soil)									
Reporting Units: %									
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	**97**	1	10/19/05	10/19/05	
Sample ID: IOJ0896-01 (WL016 - Soil)									
Reporting Units: mg/kg dry									
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	**17**	0.996	10/19/05	10/19/05	
Total Cyanide	EPA 9014	5J19117	0.43	0.51	**1.3**	1	10/19/05	10/20/05	
Sulfate	EPA 300.0	5J17057	23	25	**130**	5	10/17/05	10/17/05	
Surfactants (MBAS)	SM5540-C MOD.	5J22002	0.44	1.0	ND	1	10/21/05	10/21/05	
Sample ID: IOJ0896-02 (WL017 - Solid)									
Reporting Units: mg/kg dry									
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.1	**14**	0.996	10/19/05	10/19/05	
Total Cyanide	EPA 9014	5J19117	0.43	0.51	**4.9**	0.995	10/19/05	10/20/05	
Sulfate	EPA 300.0	5J17057	91	100	**5800**	20	10/17/05	10/17/05	
Surfactants (MBAS)	SM5540-C MOD.	5J22002	0.45	1.0	**1.8**	1	10/21/05	10/21/05	
Sample ID: IOJ0896-03 (WL018 - Soil)									
Reporting Units: mg/kg dry									
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.5	6.5	**32**	0.996	10/19/05	10/19/05	
Total Cyanide	EPA 9014	5J19117	0.46	0.54	**1.7**	0.99	10/19/05	10/20/05	
Sulfate	EPA 300.0	5J17057	9.8	11	**180**	2	10/17/05	10/17/05	
Surfactants (MBAS)	SM5540-C MOD.	5J22002	2.4	5.4	ND	5	10/21/05	10/21/05	RL-1

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-San Diego
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Attention: Lisa J. Tucker

Project ID: Ash samples - RFI
Boeing SSFL
Report Number: IOJ0896

Sampled: 10/13/05
Received: 10/13/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0896-04 (WL019 - Solid)									
Reporting Units: mg/kg dry									
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.5	6.6	**8.6**	0.996	10/19/05	10/19/05	
Total Cyanide	EPA 9014	5J19117	2.4	2.7	**8.6**	4.95	10/19/05	10/20/05	
Sulfate	EPA 300.0	5J17057	99	110	**4000**	19.9	10/17/05	10/17/05	
Surfactants (MBAS)	SM5540-C MOD.	5J22002	0.49	1.1	**2.2**	1	10/21/05	10/21/05	J
Sample ID: IOJ0896-06 (WL021 - Soil)									
Reporting Units: mg/kg dry									
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.2	ND	0.996	10/19/05	10/19/05	
Total Cyanide	EPA 9014	5J19117	0.44	0.51	ND	0.99	10/19/05	10/20/05	
Sulfate	EPA 300.0	5J17057	4.6	5.1	**12**	0.993	10/17/05	10/17/05	
Surfactants (MBAS)	SM5540-C MOD.	5J22002	2.3	5.2	ND	5	10/21/05	10/21/05	RL-1

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ATTACHMENT D-3

DESCRIPTION OF POST-FIRE REFERENCE SOIL AND ASH SAMPLE INFORMATION

Post-Fire Reference Soil and Ash Sample Locations

Figure D3-1

Table D3-1
Post-Fire Reference Soil and Ash Data Set
Santa Susana Field Laboratory

	Sample Identification	**RP-1**	**CRP-1**	**CF-1**	**CF-1**	**PCC-1**	**PCC-1**	**SC-1**	**SC-1**	**WC-1**	**WC-1**	**SSM-1**	**SSM-1**	**Upstream-001**	**Upstream-001**	**Upstream-002**	**Upstream-002**
	Sample Type	**Soil**	**Soil**	**Soil**	**Ash**	**Soil**	**Ash**	**Soil**	**Ash**	**Ash**	**Soil**	**Soil**	**Ash**	**Soil**	**Ash**	**Soil**	**Ash**
	Sampling Date	**10/06/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/10/2005**	**10/10/2005**	**10/10/2005**	**10/10/2005**	**10/13/2005**	**10/13/2005**	**10/06/2005**	**10/06/2005**	**10/06/2005**	**10/06/2005**
	Location	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Onsite**	**Onsite**	**Onsite**	**Onsite**
	EPA Identification	**WL006**	**WL007**	**WL008**	**WL009**	**WL010**	**WL011**	**WL012**	**WL013**	**WL014**	**WL015**	**WL022**	**WL023**	**WL002**	**WL001**	**WL004**	**WL005**
Group	**Constituent**																
DIOXIN	1,2,3,4,6,7,8-HpCDD	0.694 J	3.41	1.06 J	0.581 J	0.355 J	0.833 J	0.957 J	2.88	95.1	5.27	1.4 J	1.97 J	2.71	2.33 J	2.46 J	48.5
DIOXIN	1,2,3,4,6,7,8-HpCDF	< 0.182 UJ	< 0.36 UJ	< 0.0986 U	< 0.107 U	< 0.112 U	< 0.15 U	< 0.234 UJ	< 0.412 UJ	1.83 J	< 0.0661 U	< 0.244 UJ	< 0.0913 U	0.431 J	0.365 J	0.324 J	1.65 J
DIOXIN	1,2,3,4,7,8,9-HpCDF	< 0.0614 U	< 0.0951 U	< 0.075 U	< 0.153 U	< 0.138 U	< 0.174 U	< 0.0859 U	< 0.0675 U	< 0.22 U	< 0.0708 U	< 0.139 U	< 0.109 U	< 0.123 U	< 0.118 U	< 0.0838 U	< 0.167 UJ
DIOXIN	1,2,3,4,7,8-HxCDD	< 0.0826 U	< 0.164 U	< 0.106 U	< 0.419 U	< 0.253 U	< 0.404 U	< 0.204 U	< 0.174 U	6.67	0.286 J	< 0.286 U	< 0.242 U	< 0.138 U	0.129 J	< 0.158 U	0.846 J
DIOXIN	1,2,3,4,7,8-HxCDF	< 0.0492 U	< 0.119 U	< 0.0589 U	0.11 J	< 0.0561 U	< 0.088 U	< 0.0555 U	< 0.115 U	0.357 J	< 0.0598 U	0.079 J	< 0.0687 U	< 0.126 U	< 0.101 UJ	< 0.0823 UJ	0.286 J
DIOXIN	1,2,3,6,7,8-HxCDD	0.221 J	0.331 J	0.178 J	< 0.421 U	< 0.259 U	< 0.397 U	< 0.201 U	< 0.367 U	10.2	0.535 J	0.145 J	< 0.263 U	0.159 J	0.264 J	0.207 J	2.11 J
DIOXIN	1,2,3,6,7,8-HxCDF	0.0668 J	< 0.11 U	0.102 J	< 0.0717 U	< 0.051 U	< 0.0836 U	< 0.0517 U	< 0.107 U	0.379 J	< 0.056 U	< 0.0674 U	< 0.0654 U	< 0.0945 U	< 0.0777 UJ	< 0.0719 UJ	0.243 J
DIOXIN	1,2,3,7,8,9-HxCDD	0.232 J	< 0.155 U	0.148 J	< 0.422 U	< 0.257 U	< 0.402 U	< 0.191 U	< 0.266 UJ	12.4	0.565 J	< 0.274 U	< 0.254 U	< 0.133 UJ	0.262 J	0.245 J	1.6 J
DIOXIN	1,2,3,7,8,9-HxCDF	< 0.0433 U	< 0.198 U	< 0.082 U	< 0.112 U	< 0.0875 U	< 0.13 U	< 0.0893 U	< 0.195 U	< 0.307 U	< 0.0895 U	< 0.101 U	< 0.101 U	< 0.0694 U	< 0.0707 U	< 0.079 U	0.125 J
DIOXIN	1,2,3,7,8-PeCDD	< 0.0869 U	< 0.277 U	< 0.0699 U	< 0.154 U	< 0.106 U	< 0.207 U	< 0.108 U	< 0.227 U	9.61	0.379 J	< 0.0887 U	< 0.11 U	< 0.149 U	0.235 J	< 0.0947 UJ	1.02 J
DIOXIN	1,2,3,7,8-PeCDF	< 0.0942 U	< 0.231 U	< 0.157 UJ	< 0.231 U	< 0.142 U	< 0.225 U	< 0.149 U	< 0.277 U	0.198 J	< 0.0934 U	< 0.145 U	< 0.159 U	< 0.0886 U	< 0.0948 UJ	< 0.0709 U	0.209 J
DIOXIN	2,3,4,6,7,8-HxCDF	< 0.0516 U	< 0.128 U	< 0.0616 U	< 0.0764 U	< 0.0596 U	< 0.104 U	< 0.0564 U	< 0.126 U	0.433 J	< 0.063 U	< 0.063 UJ	< 0.0698 U	< 0.126 U	0.0883 J	0.0752 J	< 0.265 UJ
DIOXIN	2,3,4,7,8-PeCDF	< 0.083 U	< 0.215 U	0.137 J	< 0.212 U	< 0.131 U	< 0.191 U	< 0.141 U	< 0.248 U	0.306 J	< 0.0863 U	< 0.125 U	< 0.139 U	< 0.0805 U	0.173 J	0.0852 J	< 0.231 UJ
DIOXIN	2,3,7,8-TCDD	< 0.0609 U	< 0.185 U	< 0.0676 U	< 0.187 U	< 0.106 U	< 0.249 U	< 0.129 U	< 0.208 U	3.57 J	< 0.179 UJ	< 0.107 U	< 0.141 U	< 0.133 U	< 0.155 U	< 0.151 U	0.303 J
DIOXIN	2,3,7,8-TCDF	< 0.0791 U	0.213 J	0.381 J	< 0.189 U	0.151 J	< 0.199 U	< 0.13 UJ	< 0.162 U	< 0.173 UJ	< 0.0895 U	< 0.109 U	< 0.112 U	< 0.112 U	0.361 J	< 0.109 U	< 0.165 UJ
DIOXIN	OCDD	4.81 J	14.8	5.59	3.64 J	2.4 J	2.33 J	5.91	13.6	232	20.6	8.65	9.52	18.9	10.4	18.3	230
DIOXIN	OCDF	< 0.595 U	< 0.425 UJ	0.331 J	< 0.441 U	< 0.358 U	< 0.504 U	< 0.545 U	< 0.709 UJ	2.28 J	< 0.413 U	< 0.527 U	< 0.47 U	0.98 J	< 0.499 UJ	0.59 J	4.63 J
DIOXIN	TEQ [(a)]	0.059	0.08998	0.16	0.017	0.019	0.0086	0.01	0.03016	17.4	0.57	0.037	0.021	0.049	0.46	0.13	2.4
DIOXIN	Total HpCDD	1.5	7.32	2.16	0.581	0.76	1.85	2.31	6.38	253	13.4	3.01	3.72	8.14	5.73	6.59	98.2
DIOXIN	Total HpCDF	< 0.182 U	0.36	0.174	< 0.127 U	< 0.124 U	< 0.16 U	< 0.553 U	0.84	4.93	< 0.068 U	< 0.491 U	< 0.0994 U	1.34	0.629	0.727	4.25
DIOXIN	Total HxCDD	0.602	3.07	1.23	< 0.421 U	< 0.257 U	0.319	0.25	2.47	196	8.62	0.942	0.966	2.67	4.84	3.55	33.7
DIOXIN	Total HxCDF	0.176 J	0.39	0.301	0.11	0.123	< 0.0999 U	0.551	0.23	6.27	< 0.0659 U	0.251	< 0.0755 U	0.651	0.281	0.566	3.13 J
DIOXIN	Total PeCDD	< 0.0869 U	< 0.277 U	< 0.257 U	< 0.154 U	< 0.106 U	< 0.207 U	< 0.108 U	0.607	117	3.66	< 0.133 U	< 0.121 U	1	2.72	1.45	18.1
DIOXIN	Total PeCDF	0.0916	< 0.664 U	0.867	< 0.221 U	< 0.136 U	< 0.207 U	< 0.493 U	0.3	4.52	0.124	0.119	< 0.148 U	0.188	0.727	0.462	3.4
DIOXIN	Total TCDD	< 0.0609 U	0.519	0.464	< 0.187 U	< 0.106 U	< 0.249 U	< 0.129 U	0.408	74.5	2.52	< 0.107 U	0.179	< 0.123 U	1.04	0.107	10.7
DIOXIN	Total TCDF	< 0.0791 U	1.65	3.57	< 0.189 U	0.387	< 0.199 U	< 0.13 U	1.14	8.97	< 0.276 U	0.287	< 0.112 U	0.211	1.69	0.375	3.99
METALS	Antimony	0.037	0.18 J	0.19 J	0.69 J	0.15 J	0.36 J	0.056 J	0.5 J	0.48 J	0.087 J	0.053 J	0.12 J	0.03	0.064	< 0.061 U	0.085
METALS	Arsenic	4	5.9	8.4	5.4	13	10	5.5	< 2.4 U	< 0.61 U	0.89	5.1	3.1	3.3	< 1.2 U	7.8	2.3
METALS	Barium	58	97	99	630	96	310	230	370	320	150	48	180	42	220	84	240
METALS	Beryllium	0.39	0.65	0.66	< 0.8 U	0.8	1.1	< 0.81 U	< 0.81 U	< 0.2 U	0.2	0.34	0.41	0.27	< 0.4 U	0.64	0.51
METALS	Boron	< 1 U	11	14	330	12	240	< 4 U	120	76	5.5	< 1 U	77	1.8	58	6	87
METALS	Cadmium	0.063 J	0.25	0.19	0.31	0.52	1.5	0.046	0.12	0.079	0.033	0.072	0.65	0.066 J	0.25 J	0.12	0.15 J
METALS	Chromium	17	18	19	19	20	35	14	13	3.8	3.6	9.7	13	7	5.3	23	14
METALS	Cobalt	4.8	5.1	8.6	7.7	13	12	12	7	3.5	4	3.3	3.3	3.1	1.6	11	4
METALS	Copper	7.3	15	16	78	14	84	24	38	39	30	5.6	27	4.7	21	13	34
METALS	Iron	14000	18000	23000	19000	27000	33000	32000	19000	8700	11000	11000	11000	9300	5700	28000	12000
METALS	Lead	6	14	13	13	14	14	6.4	42	9.4	2.4	5.3	16	5.1	18	12	15
METALS	Manganese	220	290	550	1400	1700	1000	500	670	270	210	190	270	180	310	490	440
METALS	Mercury	< 0.0063 UJ	< 0.003 U	< 0.0034 U	< 0.003 U	< 0.003 U	0.0035	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.0031 U	< 0.0063 UJ	0.032 J	0.012 J	0.025 J
METALS	Nickel	11	13	16	37	18	34	9.7	11	4.5	3.1	7.8	15	< 5.4 UJ	8.6	15	13
METALS	Selenium	0.26	0.43 J	0.87 J	0.82 J	3.2 J	3.8 J	< 0.2 UJ	0.25 J	0.34 J	0.37 J	< 0.29 UJ	< 0.63 UJ	0.23	0.4	0.54	0.77
METALS	Silver	< 0.02 U	0.061 J	0.055	0.22	0.045	0.14	0.043 J	0.23 J	0.14	0.041	0.029 J	0.11 J	< 0.02 U	0.075	0.041	0.075
METALS	Thallium	0.21	0.21	0.39	0.17	0.3	0.34	0.42	0.18	0.16	0.14	0.18	0.22	0.13	0.17	0.44	0.18
METALS	Vanadium	28	29	31	42	40	71	80	49	21	25	18	23	14	11	44	28
METALS	Zinc	44	72	90	350	100	250	87	120	77	35	33	110	30	47	74	140
PAH	1-Methylnaphthalene	16 J	25	55	12 J	19 J	19 J	< 20 U	23	75	40	24	21	8.1 J	24	18 J	110
PAH	2-Methylnaphthalene	18 J	33	64	17 J	25	26	9.6 J	31	110	54	31	30	12 J	37	24	130
PAH	Acenaphthene	< 20 U	< 20 U	< 23 U	110	< 20 U	< 20 U	< 20 U	< 20 U	22	< 20 U	< 21 U	< 21 U	< 20 U	< 20 U	< 20 U	< 100 U
PAH	Acenaphthylene	< 20 U	< 20 U	< 23 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	10 J	< 20 U	< 21 U	< 21 U	< 20 U	< 20 U	13 J	< 100 U
PAH	Anthracene	< 20 U	< 20 U	< 23 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	22	< 20 U	< 21 U	< 21 U	< 20 U	14 J	< 20 U	< 100 U
PAH	Benzo(a)anthracene	< 20 U	< 20 U	< 23 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 21 U	< 21 U	15 J	17 J	< 20 U	< 100 U
PAH	Benzo(a)pyrene	< 20 U	< 20 U	< 23 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 21 U	< 21 U	< 20 U	13 J	< 20 U	< 100 U
PAH	Benzo(b)fluoranthene	< 20 U	< 20 U	< 23 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 21 U	< 21 U	8.6 J	14 J	< 20 U	< 100 U
PAH	Benzo(g,h,i)perylene	< 20 U	< 20 U	< 23 UJ	< 20 UJ	< 20 UJ	< 20 UJ	< 20 U	< 20 U	< 20 U	< 20 U	< 21 U	< 21 U	< 20 U	< 20 U	< 20 U	< 100 U
PAH	Benzo(k)fluoranthene	< 20 U	< 20 U	< 23 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 21 U	< 21 U	< 20 U	< 20 U	< 20 U	< 100 U

Table D3-1
Post-Fire Reference Soil and Ash Data Set
Santa Susana Field Laboratory

	Sample Identification	**RP-1**	**CRP-1**	**CF-1**	**CF-1**	**PCC-1**	**PCC-1**	**SC-1**	**SC-1**	**WC-1**	**WC-1**	**SSM-1**	**SSM-1**	**Upstream-001**	**Upstream-001**	**Upstream-002**	**Upstream-002**
	Sample Type	**Soil**	**Soil**	**Soil**	**Ash**	**Soil**	**Ash**	**Soil**	**Ash**	**Ash**	**Soil**	**Soil**	**Ash**	**Soil**	**Ash**	**Soil**	**Ash**
	Sampling Date	**10/06/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/10/2005**	**10/10/2005**	**10/10/2005**	**10/10/2005**	**10/13/2005**	**10/13/2005**	**10/06/2005**	**10/06/2005**	**10/06/2005**	**10/06/2005**
	Location	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Onsite**	**Onsite**	**Onsite**	**Onsite**
	EPA Identification	**WL006**	**WL007**	**WL008**	**WL009**	**WL010**	**WL011**	**WL012**	**WL013**	**WL014**	**WL015**	**WL022**	**WL023**	**WL002**	**WL001**	**WL004**	**WL005**
Group	**Constituent**																
PAH	Chrysene	< 20 U	< 20 U	< 23 U	22	< 20 U	8.2 J	< 20 U	< 20 U	10 J	< 20 U	< 21 U	34	21	88	< 20 U	< 100 U
PAH	Dibenzo(a,h)anthracene	< 20 U	< 20 U	< 23 UJ	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 21 U	< 21 U	< 20 UJ	< 20 UJ	< 20 UJ	< 100 U
PAH	Fluoranthene	11 J	10 J	< 23 U	22	< 20 U	< 20 U	8.2 J	12 J	72	17 J	13 J	32	36	76	14 J	< 100 U
PAH	Fluorene	< 20 U	< 20 U	9.2 J	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	16 J	9.7 J	9 J	< 21 U	< 20 U	< 20 U	13 J	< 100 U
PAH	Indeno(1,2,3-cd)pyrene	< 20 U	< 20 U	< 23 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 21 U	< 21 U	< 20 UJ	< 20 UJ	< 20 UJ	< 100 U
PAH	Naphthalene	41	270	280	130	71	260	34	250	390	170	100	580	23	270	57	2300
PAH	Phenanthrene	19 J	50	32	110	26	33	21	57	240	56	39	220	38	240	41	160
PAH	Pyrene	8.5 J	9.6 J	12 J	19 J	< 20 U	< 20 U	< 20 U	9.9 J	39	15 J	17 J	14 J	35	40	14 J	< 100 UJ
SVOC	1,2,4-Trichlorobenzene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	1,2-Dichlorobenzene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	1,2-Diphenylhydrazine/Azobenzene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	1,3-Dichlorobenzene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	1,4-Dichlorobenzene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	2,4,5-Trichlorophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	2,4,6-Trichlorophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	2,4-Dichlorophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	2,4-Dimethylphenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	2,4-Dinitrophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 660 UJ	(b)	< 670 UJ	(b)
SVOC	2,4-Dinitrotoluene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	2,6-Dinitrotoluene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	2-Chloronaphthalene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	2-Chlorophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	2-Methylnaphthalene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	2-Methylphenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	2-Nitroaniline	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	2-Nitrophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	3,3-Dichlorobenzidine	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 830 U	< 2500 U	< 840 U	< 2500 U
SVOC	3-Nitroaniline	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	4,6-Dinitro-2-methylphenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 420 UJ	(b)	< 430 UJ	(b)
SVOC	4-Bromophenyl phenyl ether	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	4-Chloro-3-methylphenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	< 340 U	(b)
SVOC	4-Chloroaniline	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	4-Chlorophenyl phenyl ether	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	4-Methylphenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	(b)	290 J	(b)
SVOC	4-Nitroaniline	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 830 U	< 2500 U	< 840 U	< 2500 U
SVOC	4-Nitrophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 830 U	(b)	< 840 U	(b)
SVOC	Acenaphthene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Acenaphthylene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Aniline	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 420 U	< 1200 U	< 430 U	< 1300 U
SVOC	Anthracene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Benzidine	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 660 U	< 2000 U	< 670 U	< 2000 U
SVOC	Benzo(a)anthracene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Benzo(a)pyrene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Benzo(b)fluoranthene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Benzo(g,h,i)perylene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 UJ	< 980 UJ	< 340 UJ	< 990 UJ
SVOC	Benzo(k)fluoranthene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Benzoic acid	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 830 U	(b)	< 840 U	(b)
SVOC	Benzyl alcohol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	120 J	< 990 U
SVOC	Bis(2-chloroethoxy)methane	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Bis(2-chloroethyl)ether	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 170 U	< 510 U	< 170 U	< 510 U
SVOC	Bis(2-chloroisopropyl)ether	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Bis(2-ethylhexyl)phthalate	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Butyl benzyl phthalate	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Chrysene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Dibenz(a,h)anthracene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 420 UJ	< 1200 UJ	< 430 UJ	< 1300 UJ

Table D3-1
Post-Fire Reference Soil and Ash Data Set
Santa Susana Field Laboratory

	Sample Identification	**RP-1**	**CRP-1**	**CF-1**	**CF-1**	**PCC-1**	**PCC-1**	**SC-1**	**SC-1**	**WC-1**	**WC-1**	**SSM-1**	**SSM-1**	**Upstream-001**	**Upstream-001**	**Upstream-002**	**Upstream-002**
	Sample Type	**Soil**	**Soil**	**Soil**	**Ash**	**Soil**	**Ash**	**Soil**	**Ash**	**Ash**	**Soil**	**Soil**	**Ash**	**Soil**	**Ash**	**Soil**	**Ash**
	Sampling Date	**10/06/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/07/2005**	**10/10/2005**	**10/10/2005**	**10/10/2005**	**10/10/2005**	**10/13/2005**	**10/13/2005**	**10/06/2005**	**10/06/2005**	**10/06/2005**	**10/06/2005**
	Location	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Offsite**	**Onsite**	**Onsite**	**Onsite**	**Onsite**
	EPA Identification	**WL006**	**WL007**	**WL008**	**WL009**	**WL010**	**WL011**	**WL012**	**WL013**	**WL014**	**WL015**	**WL022**	**WL023**	**WL002**	**WL001**	**WL004**	**WL005**
Group	**Constituent**																
SVOC	Dibenzofuran	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Diethyl phthalate	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	270 J
SVOC	Dimethyl phthalate	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Di-n-butyl phthalate	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Di-n-octyl phthalate	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Fluoranthene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Fluorene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Hexachlorobenzene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Hexachlorobutadiene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Hexachlorocyclopentadiene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 830 U	< 2500 U	< 840 U	< 2500 U
SVOC	Hexachloroethane	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Indeno(1,2,3-cd)pyrene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Isophorone	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Naphthalene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Nitrobenzene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	N-Nitrosodimethylamine	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	N-Nitroso-di-n-propylamine	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 250 U	< 740 U	< 250 U	< 750 U
SVOC	N-Nitrosodiphenylamine	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Pentachlorophenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 830 UJ	(b)	< 840 UJ	(b)
SVOC	Phenanthrene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
SVOC	Phenol	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	170 J	(b)	930	580 J
SVOC	Pyrene	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	< 330 U	< 980 U	< 340 U	< 990 U
WETCHEM	Ammonia-NH3	2.1	30	< 6.8 U	< 6 U	10	8.7	8.7	14	3.3	4.9	3.5	23	5.1	12	6.8	8.2
WETCHEM	Sulfate	150	1300	4800	1100	17000	6200	170	3700	3800	480	140	2400	190	4400	690	7600
WETCHEM	Surfactants (MBAS)	< 5 UJ	0.48 J	3.6 J	1400 J	3.1 J	1.7 J	4.8 J	30 J	1.3 J	1.4 J	< 5.1 UJ	3.2 J	< 1 UJ	1.4 J	0.69 J	2 J
WETCHEM	Total Cyanide	0.64	6.6	6.7	2.8	1.4	3.9	< 0.5 U	2.9	5.2	0.58	0.73	2.4	0.6	3.3	1.1	5.7

Validation Report Number																	
DIOXIN	T713DF3	T713DF7	T713DF7	T713DF7	T713DF7	T713DF7	T713DF7	T713DF7	T713DF7	T713DF7	T713DF5	T713DF5	T713DF3	T713DF3	T713DF3	T713DF3
METALS	T713MT2	T713MT6	T713MT6	T713MT6	T713MT6	T713MT6	T713MT6	T713MT6	T713MT6	T713MT6	T713MT4	T713MT4	T713MT2	T713MT2	T713MT2	T713MT2
PAH	T713PA1	T713PA4	T713PA4	T713PA4	T713PA4	T713PA4	T713PA4	T713PA4	T713PA4	T713PA4	T713PA2	T713PA2	T713PA1	T713PA1	T713PA1	T713PA1
SVOC	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	T713SV2	T713SV2	T713SV2	T713SV2
WETCHEM	T713WC1	T713WC5	T713WC5	T713WC5	T713WC5	T713WC5	T713WC5	T713WC5	T713WC5	T713WC5	T713WC3	T713WC3	T713WC1	T713WC1	T713WC1	T713WC1

(a) TEQ values were calculated using detected congener concentrations and WHO toxicity equivalency factors. For comparison, western United States dioxin TEQs typically range up to 2 pg/g or parts per trillion.
(b) Rejected data was not included in the post-fire reference soil and ash data set.

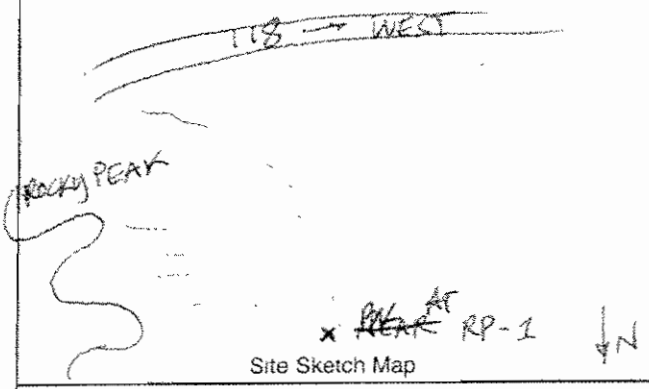
Notes
1. All soil samples were collected from the upper 2 to 3 inches of soil.
2. No ash samples were collected at sample locations CRP-1 and RP-1.
3. Samples locations SC-1 and WC-1are located within the burn area of the Burbank "Harvard" Fire, in Burbank, California, approximately 20 miles east of the Santa Susana Field Laboratory. All other results in this table are for samples collected within the Topanga Fire footprint.
4. The results presented in this table are for comparison purposes only.
my

Data Qualifiers
U = Not detected
J = Estimated value
B = Blank contamination

Units of measure by analyte/matrix

DIOXIN	Soil or Ash =	ng/kg (naograms per kilogram)
METALS	Soil or Ash =	mg/kg (milligrams per kilogram)
PAH	Soil or Ash =	µg/kg (micrograms per kilogram)
SVOC	Soil or Ash =	µg/kg (micrograms
WETCHEM	Soil or Ash =	mg/kg (milligrams per kilogram)

MONTGOMERY WATSON

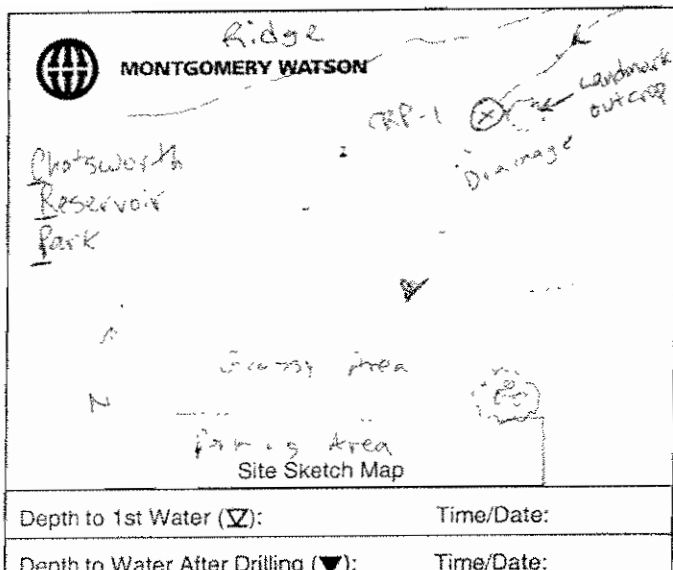


Site Sketch Map

Boring #: RP-1 MW#:	Sheet 1 of 1
Project: BOEING SSFL	
Job #:	Site: ROCKY PEAK
Logged By: BK	Reviewed By:
Drilling Contractor: —	
Drill Rig Type/Method: SURFACE SAMPLE	
Drillers Name:	
Borehole Diam./Drill Bit Type: —	Total Depth 1"
	Ref. Elev.
Sampler Type: — TRAIL	
Depth to 1st Water (▽): — Time/Date: —	Drill Start Time/Date: — Drill Finish Time/Date: —
Depth to Water After Drilling (▼): — Time/Date: —	Well Completion Time/Date: —
Depth to other Water Bearing Zones: —	Soil Boring Backfill Time/Date: —

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
									0-1" Sand, very loose dry, brown, rounded gravels = sandstone material, organic material in drainge black, v. little to no ash, little vegitation surrounding drainage harden surface in bank soft & loose in drainge	20-30	TR	35	10-20	25
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON



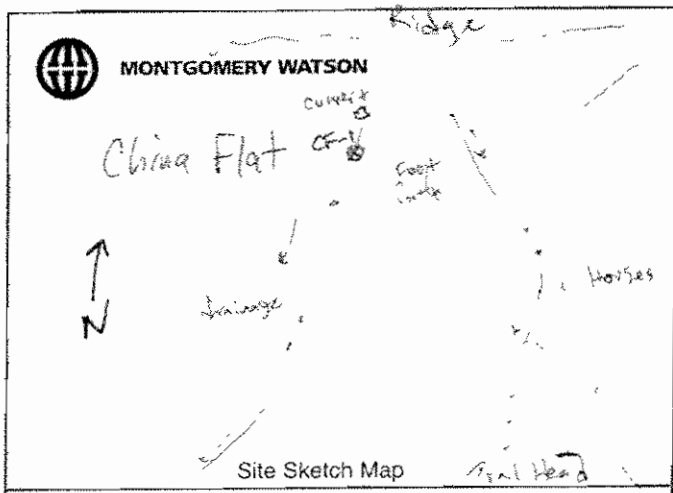
Site Sketch Map

Boring #: CRP-1 MW#:	Sheet 1 of 1
Project: SSLF- Chatsworth Oaks Park	
Job #:	Site:
Logged By: T Burton	Reviewed By:
Drilling Contractor:	
Drill Rig Type/Method:	
Drillers Name:	
Borehole Diam./Drill Bit Type:	Total Depth / Ref. Elev.
Sampler Type: trowel	
Depth to 1st Water (▽): Time/Date:	Drill Start Time/Date: 10/7/05 Drill Finish Time/Date:
Depth to Water After Drilling (▼): Time/Date:	Well Completion Time/Date:
Depth to other Water Bearing Zones:	Soil Boring Backfill Time/Date:

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
	X								Surface: Drainage (dry) w/charred plant material					
							1		0-3": slightly crusted sfc.					
							2		above charred or ashy plant					
									material; sediment beneath					
							3		is sandy silt (ML), v. dk.					
									grayish brown (10YR 4/2), dry,					
							4		v. soft, vf fine sand, weathered					
									CF sandstone/shale; blocky					
							5		texture in bank soils (ML)					
									Sample CRP-1 @ 12'5					
							6							
									Note: Insufficient ash in surrounding					
							7		area to collect ash sample					
							8							
							9							
							10							
							11							
							12							

APOL

MONTGOMERY WATSON

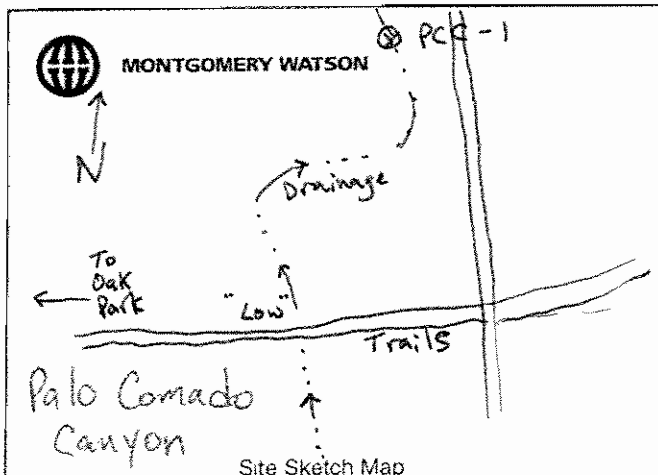


Site Sketch Map

Boring #: CF-1 MW#.	Sheet 1 of 1
Project:	
Job #:	Site:
Logged By: T. Burton	Reviewed By:
Drilling Contractor:	
Drill Rig Type/Method:	
Drillers Name:	
Borehole Diam./Drill Bit Type:	Total Depth / Ref. Elev.
Sampler Type:	
Depth to 1st Water (▽): Time/Date:	Drill Start Time/Date: 10/7/05 Drill Finish Time/Date:
Depth to Water After Drilling (▼): Time/Date:	Well Completion Time/Date:
Depth to other Water Bearing Zones:	Soil Boring Backfill Time/Date: 1330

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
	X							SP-SM	Surface sediment covered in charred leaves & twigs 1-2" + minimal ash layer 1/8"; Poorly graded sand w/silt (SP-SM), dk. grayish brn (10yR4/2), dry, v. loose	tr	5	15	70	10
							1							
							2							
							3							
							4		Note: bank soils are crusted over from fires; ashy pockets close to drainage where former small trees stood					
							5							
							6		Soil Sample #L008 @ 1330 CF-1 Ash Sample #L009 @ 1335 CF-1					
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON

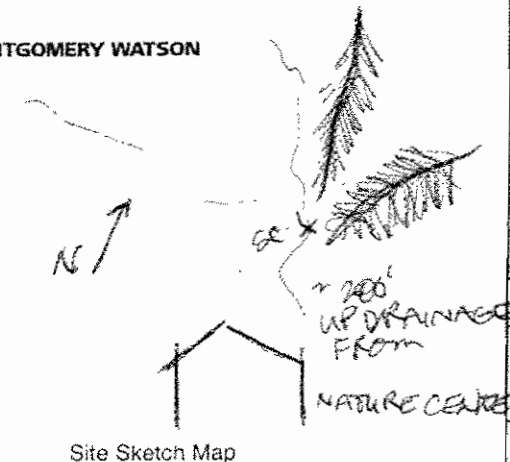


Site Sketch Map

Boring #: PCG-1 MW#:	Sheet 1 of
Project:	
Job #:	Site:
Logged By: T. Burton	Reviewed By:
Drilling Contractor:	
Drill Rig Type/Method:	
Drillers Name:	
Borehole Diam./Drill Bit Type:	Total Depth / Ref. Elev.
Sampler Type:	
Depth to 1st Water (▽): Time/Date:	Drill Start Time/Date: 10/7/05 Drill Finish Time/Date:
Depth to Water After Drilling (▼): Time/Date:	Well Completion Time/Date:
Depth to other Water Bearing Zones:	Soil Boring Backfill Time/Date: 1515

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description (Drainage sediment)	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/Clay
	X	X							Surface sediment covered with charred leaves + twigs; seds are poorly graded sand (SP), dry, v. loose, dk gray	–	–	10	85	5
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON

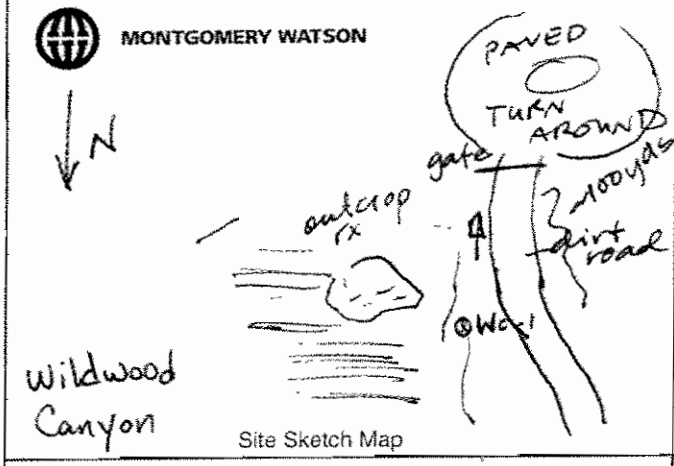


Site Sketch Map

Boring #: SC-1 ~~MW#~~ EPA: WL012 & WL013	Sheet 1 of 1
Project: BOEING	
Job #:	Site: 2005 Topanga Fire Post Fire Assessment
Logged By: BK	Reviewed By:
Drilling Contractor: —	
Drill Rig Type/Method: SURFACE SAMPLE	
Drillers Name:	
Borehole Diam./Drill Bit Type: —	Total Depth: 1' / Ref. Elev.: —
Sampler Type: trowel	
Depth to 1st Water (▽): — Time/Date: —	Drill Start Time/Date: 10/10/05 10:40 Drill Finish Time/Date: —
Depth to Water After Drilling (▼): — Time/Date: —	Well Completion Time/Date: —
Depth to other Water Bearing Zones: —	Soil Boring Backfill Time/Date: —

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
								SW	0-1" Sand, Gravelly, subrounded dry loose in drainage well graded, micaceous brown, ash and char made deposits in bank ~ 1 to 2" thick Gravels - schist frag.	35	10	10	30	15
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON

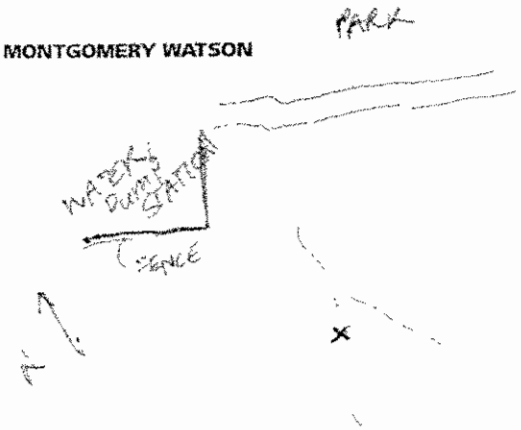


Site Sketch Map

Boring #: WC-1 MW#:	Sheet 1 of 1
Project: BOEING - 2005 POST FIRE ASST	
Job #:	Site:
Logged By: TB	Reviewed By:
Drilling Contractor: —	
Drill Rig Type/Method: SURFACE	
Drillers Name:	
Borehole Diam./Drill Bit Type:	Total Depth 1' / Ref. Elev.
Sampler Type:	
Drill Start Time/Date: 10/10/05 1145	Drill Finish Time/Date:
Well Completion Time/Date:	
Soil Boring Backfill Time/Date:	
Depth to 1st Water (▽): — Time/Date: —	
Depth to Water After Drilling (▼): — Time/Date: —	
Depth to other Water Bearing Zones: —	

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description (Sediment)	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
								SP-SM	Well graded sand w/silt, very fine to coarse grained, dry, v. loose; 1" of charred leaves + twigs over sediment; grayish brown seds (10YR 5/2); sample from upper inch of seds. banks = crusted surface seds. of dk brown charred mat'l and ash	tr	15	15	60	10
							1							
							2							
							3							
							4							
							5		collected 60' upstream from bank ash					
							6		1-3" thick on surface					
							7							
							8							
							9							
							10							
							11							
							12							

MONTGOMERY WATSON



Site Sketch Map

Boring #: SSM-1 MW#: ~~SMW-1~~ TB	Sheet 1 of 1
Project: BOEING SSFL	
Job #:	Site: OFF SITE
Logged By: BIC	Reviewed By: TB
Drilling Contractor: —	
Drill Rig Type/Method: SURFACE SOIL	
Drillers Name: T. BURTON	
Borehole Diam./Drill Bit Type: —	Total Depth: 0.5" / Ref. Elev.: —
Sampler Type: TROWEL	
Depth to 1st Water (▽): — Time/Date: —	Drill Start Time/Date: 10/13/05 1634 Drill Finish Time/Date: —
Depth to Water After Drilling (▼): — Time/Date: —	Well Completion Time/Date: —
Depth to other Water Bearing Zones: —	Soil Boring Backfill Time/Date: —

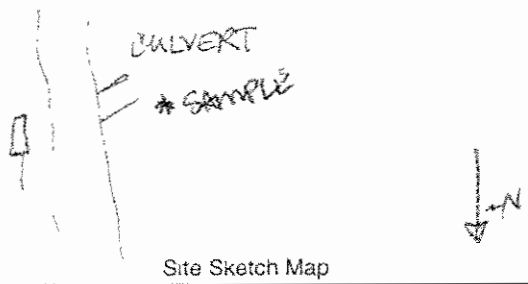
PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/Clay
								SP-SM	0-0.5" Sand w/ Silt Poorly graded lt brown v. loose dry Bank - silt and sandy silt, burnt crusted over v. fine sand (inc in sample), reg. black w/ little ash			TR	90	10
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

Upstream-001

Surface Sample

MONTGOMERY WATSON

Boring #:	MW#:
Sheet 1 of 1	
Project: BOEING SSFL	
Job #:	Site: SSFL
Logged By: BK	Reviewed By: TB
Drilling Contractor: —	
Drill Rig Type/Method: —	
Drillers Name: —	
Borehole Diam./Drill Bit Type: —	Total Depth / Ref. Elev.
Sampler Type: —	
Drill Start Time/Date: 1115	Drill Finish Time/Date:
Well Completion Time/Date: —	
Soil Boring Backfill Time/Date: —	



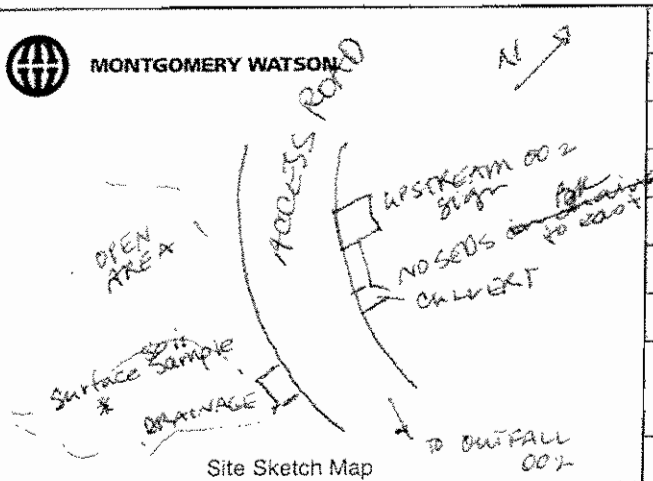
Site Sketch Map

Depth to 1st Water (▽): — Time/Date: —	
Depth to Water After Drilling (▼): — Time/Date: —	
Depth to other Water Bearing Zones: —	

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
									Surface Soil (bank)			TR	90	10
							1	SP SM	0-1", vitrified crunchy loose, dry, silty sand					
							2		poorly graded, brown			TR	90	10 BK
									subrounded, ash					
							3		and charred material in drainage → plant					
							4		sandstone gravels 1"±1"					
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

Upstream-002

MONTGOMERY WATSON



Site Sketch Map

Boring #:	MW#:	Sheet 1 of 1	
Project: BOEING SSFL			
Job #:	Site: SSFL Buffer		
Logged By: BK	Reviewed By: TB		
Drilling Contractor: —			
Drill Rig Type/Method: surface sample			
Drillers Name: —			
Borehole Diam./Drill Bit Type: Surface Sample	Total Depth 1"	Ref. Elev. —	
Sampler Type: —			
Depth to 1st Water (▽): —	Time/Date: —	Drill Start Time/Date: 12/17	Drill Finish Time/Date: —
Depth to Water After Drilling (▼): —	Time/Date: —	Well Completion Time/Date: —	
Depth to other Water Bearing Zones: —		Soil Boring Backfill Time/Date: —	

PID/OVA	Sample Interval	Recovered (in.)	Blow Counts / 6 in.	Retained for Analysis	Casing Type & Size	Annulus Filler	Depth (Feet)	USCS Soil Type	Soil Description 0-1"	Estimated % Of: Gravel	Sand: Coarse	Sand: Medium	Sand: Fine	Silt/clay
								SW SM	Sand, well graded with silt, brown, rounded black charred material at surface, bone frags dry, CSE sand of sandstone mat'l ash upstream on bank gen. 1" thick to 2" in thickness in places		20	50	20	10
							1							
							2							
							3							
							4							
							5							
							6							
							7							
							8							
							9							
							10							
							11							
							12							

JAGS

ATTACHMENT D-3, Part 4
Electronic Copy of Soil Background Report Addendum Laboratory Information and Validation Reports
Readme File

This Readme file contains information and instructions regarding use of Attachment 3, Part 2 of the *Soil Background Report Addendum, Santa Susana Field Laboratory, Ventura County California* (MWH August 2006) and is also provided electronically on the CD provided in this appendix.

This appendix provides a read-only compact disc (CD-ROM) that contains electronic copies of validation reports associated with the results of the post-Topanga Fire reference soil and ash data set included in Table DA.3-1 of the Soil Background Report Addendum.

Electronic files are scanned images of hard copy documents presented in Portable Document Format (PDF) files, which can be viewed using Adobe Acrobat software.

Hard copy printouts of all documents on this CD will be included in copies of the *Soil Background Report Addendum* sent to Repositories, all other copies will include electronic files only.

Validation reports include laboratory results and a data assessment form completed by AMEC Earth and Environmental, Inc. (AMEC) data validators. The validation report summaries identify the laboratory method and target compounds for each sample. In addition, the report indicates whether each compound was detected, the concentration (or detection limit if not detected), and applicable laboratory and data validation qualifiers. With the exception of field QC samples (field blanks, equipment rinsates), all analytical data generated from background field samples were validated by AMEC.

These files are organized by validation report number, which are listed in Table DA.3-1 of the Soil Background Report Addendum. Table D3-1 is arranged by analysis group and constituent. Each sample and analysis group combination in this table is associated with a distinct validation report number located at the bottom of the table, under the section ‘Validation Report Number’. To locate documents for samples associated with a particular result in Table DA.3-1, locate the column heading with the sample name of interest and note the validation report number associated with the analysis group of interest under the same column heading in the section titled ‘Validation Report Number’. Finally, in this folder, find the PDF file with the corresponding validation report number from Table D-1 of this report.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T713DF2
Task Order 313150010
SDG No. Multiple
No. of Analyses 4

Laboratory Pace - Minniapolis
Reviewer E. Wessling
Analysis/Method Dioxins/Furans by Method 1613B

Date: November 21, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	--EMPCs qualified as estimated nondetects
GC/MS Tune/Inst. Performance	--reanalysis rejected over original analysis for IOJ1337-01
Calibration	-- method blank contamination
Method blanks	--Laboratory control sample %R exceedance
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Surface Water Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOJ1337, IOJ1234, IOJ1235, IOJ1236

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
Sample Delivery Group #:	Multiple
Project Manager:	P. Costa
Matrix:	Water
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	4
No. of Reanalyses/Dilutions:	1
Reviewer:	E. Wessling
Date of Review:	November 21, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National Functional Guidelines For Chlorinated Dioxin/Furan Data Review* (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Pace)	Matrix	COC Method
WC-1	IOJ1337-01	1021959001	water	1613
WC-1	IOJ1337-01	1021959001-R	water	1613
PCC-1	IOJ1234-01	1021907001	water	1613
CF-1	IOJ1235-01	1021911001	water	1613
SSM-1	IOJ1236-01	1021912001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical within the temperature limits of 4°C ±2°C, with the exception of WC-1 that was received at 17°C. As the samples were couriered directly from the site to the laboratory, this sampled did not have sufficient time to cool. The samples were shipped to Pace for dioxin/furan analysis and were received within the temperature limits of 4°C ±2°C. According to the case narrative and laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The cooler received by Pace had no custody seals present for samples IOJ1234-01, IOJ1232-01, IOJ1231-01, IOJ1235-01, IOJ1236-01, and IOJ1337-01. All other samples had custody seals present and intact. The EPA IDs were added to the sample result summaries by the reviewer. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 10/22/05 for instrument F and on 11/04/05 for instrument U. The calibrations consisted of five concentration level standards (CS1 through CS5) analyzed to verify instrument linearity. The initial calibrations were acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

Two method blanks (Blank 8208 and Blank 8223) were extracted and analyzed with the samples in this SDG. Seven target compounds, five interferences with target compounds, and four total isomers were reported in the method blank 8208. Target compounds 1,2,3,4,6,7,8-HpCdd and OCDF were reported in method blank 8223 at concentrations of 0.0000041 and 0.0000068 ug/L, respectively. An interference with OCDD was also reported in method blank 8223. Any detects for these target compounds ≤ five times the concentration reported in the method blank were qualified as estimated, "UJ," in the site samples of this SDG. Detects for total dioxin and furan isomers at concentrations ≤ five times the concentration reported in the method blank were qualified as estimated, "UJ," in the associated samples. In instances where the total concentration included peaks not present in the method blank as well as the method blank contamination, the total concentration was considered estimated, "J," as a portion of the total concentration was considered blank contamination. There were no other target compound detects reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two blank spike/blank spike duplicate pairs (LCS/LCSD 8209/8210 and LCS/LCSD 8224/8225) were extracted and analyzed with the samples in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613, with the exception of OCDD in 8209 and 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,6,7,8-HpCDD, and OCDD in 8210. Detects for these compounds were qualified as estimated, "J" in the associated site sample WC-1. No further qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no identified field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. However, the laboratory was experiencing sporadic cross-contamination problems which they attributed to incomplete glassware cleaning procedures. One sample, WC-1, exhibited target compound detects in the reanalysis. These detects were similar to the contamination that was detected in the original analysis LCS/LCSD pair. The reanalysis was rejected in favor of the original analysis by the reviewer. No further qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." No further qualifications were required.

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Method 1613B Analysis Results

Client - Del Mar Analytical

Client's Sample ID	IOJ1234-01 PCC-1			
Lab Sample ID	1021907001			
Filename	F51109C_15			
Injected By	BAL			
Total Amount Extracted	951 mL	Matrix	Water	
% Moisture	NA	Dilution	NA	
Dry Weight Extracted	NA	Collected	10/18/2005	
ICAL Date	10/22/2005	Received	10/20/2005	
CCal Filename(s)	F51109C_02	Extracted	11/08/2005	
Method Blank ID	BLANK-8223	Analyzed	11/10/2005 10:19	

Rev Qual	Qual Code	Native Isomers	Conc ug/L	EMPC ug/L	LOD ug/L		Internal Standards	ng's Added	Percent Recovery
U		2,3,7,8-TCDF	ND	----	0.0000024		2,3,7,8-TCDF-13C	2.00	72
U		Total TCDF	ND	----	0.0000024		2,3,7,8-TCDD-13C	2.00	82
							1,2,3,7,8-PeCDF-13C	2.00	74
U		2,3,7,8-TCDD	ND	----	0.0000020		2,3,4,7,8-PeCDF-13C	2.00	81
U		Total TCDD	ND	----	0.0000020		1,2,3,7,8-PeCDD-13C	2.00	98
							1,2,3,4,7,8-HxCDF-13C	2.00	81
U		1,2,3,7,8-PeCDF	ND	----	0.0000035		1,2,3,6,7,8-HxCDF-13C	2.00	78
J	DNQ	2,3,4,7,8-PeCDF	0.0000025	----	0.0000018	J	2,3,4,6,7,8-HxCDF-13C	2.00	79
J	DNQ	Total PeCDF	0.0000160	----	0.0000027	J	1,2,3,7,8,9-HxCDF-13C	2.00	78
							1,2,3,4,7,8-HxCDD-13C	2.00	78
U		1,2,3,7,8-PeCDD	ND	----	0.0000026		1,2,3,6,7,8-HxCDD-13C	2.00	87
U		Total PeCDD	ND	----	0.0000026		1,2,3,4,6,7,8-HpCDF-13C	2.00	71
							1,2,3,4,7,8,9-HpCDF-13C	2.00	60
J	DNQ	1,2,3,4,7,8-HxCDF	0.0000050	----	0.0000022	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	73
UJ	* 10	~~1,2,3,6,7,8-HxCDF~~	~~0.0000027~~		0.0000019	I	OCDD-13C	4.00	53
U		2,3,4,6,7,8-HxCDF	ND	----	0.0000023				
J	DNQ	1,2,3,7,8,9-HxCDF	0.0000028	----	0.0000028	J	1,2,3,4-TCDD-13C	2.00	NA
J	DNQ	Total HxCDF	0.0000310	----	0.0000023	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
U		1,2,3,4,7,8-HxCDD	ND	----	0.0000032		2,3,7,8-TCDD-37Cl4	0.20	90
UJ	* 10	~~1,2,3,6,7,8-HxCDD~~	~~0.0000170~~		0.0000032	I			
U		1,2,3,7,8,9-HxCDD	ND	----	0.0000027				
J	DNQ	Total HxCDD	0.0000061	----	0.0000031	J			
J	DNQ	1,2,3,4,6,7,8-HpCDF	0.0000320	----	0.0000028	J			
U		1,2,3,4,7,8,9-HpCDF	ND	----	0.0000026				
J	DNQ	Total HpCDF	0.0000320	----	0.0000027	J			
		1,2,3,4,6,7,8-HpCDD	0.0003000	----	0.0000064				
		Total HpCDD	0.0004500	----	0.0000064				
J	DNQ	OCDF	0.0000660	----	0.0000047	BJ			
		OCDD	0.0020000	----	0.0000083				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection. Totals are averages of individual isomer LODs.
D = Result obtained from analysis of diluted sample
B = Less than 10 times higher than method blank level
P = Recovery outside of method 1613 control limits
J = Concentration detected is below the calibration range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Method 1613B Analysis Results

Client - Del Mar Analytical

Client's Sample ID	IOJ1235-01 CF-1		
Lab Sample ID	1021911001		
Filename	F51110A_04		
Injected By	SMT		
Total Amount Extracted	1020 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	10/18/2005
ICAL Date	10/22/2005	Received	10/20/2005
CCal Filename(s)	F51109C_18	Extracted	11/08/2005
Method Blank ID	BLANK-8223	Analyzed	11/10/2005 15:26

Per Qual	Qual Code	Native Isomers	Conc ug/L	EMPC ug/L	LOD ug/L	Internal Standards	ng's Added	Percent Recovery
4		2,3,7,8-TCDF	ND	----0.00000120		2,3,7,8-TCDF-13C	2.00	67
		Total TCDF	ND	----0.00000120		2,3,7,8-TCDD-13C	2.00	75
						1,2,3,7,8-PeCDF-13C	2.00	68
		2,3,7,8-TCDD	ND	----0.00000130		2,3,4,7,8-PeCDF-13C	2.00	74
		Total TCDD	ND	----0.00000130		1,2,3,7,8-PeCDD-13C	2.00	90
						1,2,3,4,7,8-HxCDF-13C	2.00	75
		1,2,3,7,8-PeCDF	ND	----0.00000180		1,2,3,6,7,8-HxCDF-13C	2.00	77
		2,3,4,7,8-PeCDF	ND	----0.00000092		2,3,4,6,7,8-HxCDF-13C	2.00	74
		Total PeCDF	ND	----0.00000140		1,2,3,7,8,9-HxCDF-13C	2.00	74
						1,2,3,4,7,8-HxCDD-13C	2.00	74
		1,2,3,7,8-PeCDD	ND	----0.00000160		1,2,3,6,7,8-HxCDD-13C	2.00	79
		Total PeCDD	ND	----0.00000160		1,2,3,4,6,7,8-HpCDF-13C	2.00	72
						1,2,3,4,7,8,9-HpCDF-13C	2.00	61
		1,2,3,4,7,8-HxCDF	ND	----0.00000098		1,2,3,4,6,7,8-HpCDD-13C	2.00	78
		1,2,3,6,7,8-HxCDF	ND	----0.00000099		OCDD-13C	4.00	62
		2,3,4,6,7,8-HxCDF	ND	----0.00000110				
		1,2,3,7,8,9-HxCDF	ND	----0.00000130		1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	ND	----0.00000110		1,2,3,7,8,9-HxCDD-13C	2.00	NA
		1,2,3,4,7,8-HxCDD	ND	----0.00000130		2,3,7,8-TCDD-37Cl4	0.20	83
		1,2,3,6,7,8-HxCDD	ND	----0.00000130				
		1,2,3,7,8,9-HxCDD	ND	----0.00000130				
		Total HxCDD	ND	----0.00000130				
		1,2,3,4,6,7,8-HpCDF	ND	----0.00000140				
		1,2,3,4,7,8,9-HpCDF	ND	----0.00000170				
		Total HpCDF	ND	----0.00000150				
		1,2,3,4,6,7,8-HpCDD	ND	----0.00000150				
		Total HpCDD	ND	----0.00000150				
UJ	*LO	OCDF	----0.0000069	0.00000160	I			
J	DNQ	OCDD	0.000015	----0.00000390	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection. Totals are averages of individual isomer LODs.
D = Result obtained from analysis of diluted sample
B = Less than 10 times higher than method blank level
P = Recovery outside of method 1613 control limits
J = Concentration detected is below the calibration range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Method 1613B Analysis Results

Client - Del Mar Analytical

Client's Sample ID	IOJ1236-01 SSm-1		
Lab Sample ID	1021912001		
Filename	F51110A_05		
Injected By	SMT		
Total Amount Extracted	893 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	10/18/2005
ICAL Date	10/22/2005	Received	10/20/2005
CCal Filename(s)	F51109C_18	Extracted	11/08/2005
Method Blank ID	BLANK-8223	Analyzed	11/10/2005 16:15

Rev Qual	Qual Code	Native Isomers	Conc ug/L	EMPC ug/L	LOD ug/L		Internal Standards	ng's Added	Percent Recovery
U		2,3,7,8-TCDF	ND		0.0000015		2,3,7,8-TCDF-13C	2.00	63
		Total TCDF	ND		0.0000015		2,3,7,8-TCDD-13C	2.00	72
							1,2,3,7,8-PeCDF-13C	2.00	65
		2,3,7,8-TCDD	ND		0.0000017		2,3,4,7,8-PeCDF-13C	2.00	69
		Total TCDD	ND		0.0000017		1,2,3,7,8-PeCDD-13C	2.00	84
							1,2,3,4,7,8-HxCDF-13C	2.00	69
		1,2,3,7,8-PeCDF	ND		0.0000019		1,2,3,6,7,8-HxCDF-13C	2.00	74
		2,3,4,7,8-PeCDF	ND		0.0000014		2,3,4,6,7,8-HxCDF-13C	2.00	70
		Total PeCDF	ND		0.0000016		1,2,3,7,8,9-HxCDF-13C	2.00	69
							1,2,3,4,7,8-HxCDD-13C	2.00	69
		1,2,3,7,8-PeCDD	ND		0.0000024		1,2,3,6,7,8-HxCDD-13C	2.00	74
		Total PeCDD	ND		0.0000024		1,2,3,4,6,7,8-HpCDF-13C	2.00	66
							1,2,3,4,7,8,9-HpCDF-13C	2.00	55
UJ	*10	1,2,3,4,7,8-HxCDF		0.0000016	0.0000016	I	1,2,3,4,6,7,8-HpCDD-13C	2.00	69
U		1,2,3,6,7,8-HxCDF	ND		0.0000014		OCDD-13C	4.00	47
U		2,3,4,6,7,8-HxCDF	ND		0.0000018				
U		1,2,3,7,8,9-HxCDF	ND		0.0000023		1,2,3,4-TCDD-13C	2.00	NA
J	DNQ	Total HxCDF	0.0000027		0.0000018	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
U		1,2,3,4,7,8-HxCDD	ND		0.0000014		2,3,7,8-TCDD-37Cl4	0.20	79
J	DNQ	1,2,3,6,7,8-HxCDD	0.0000023		0.0000012	J			
U		1,2,3,7,8,9-HxCDD	ND		0.0000018				
J	DNQ	Total HxCDD	0.0000023		0.0000015	J			
J	DNQ	1,2,3,4,6,7,8-HpCDF	0.0000050		0.0000014	J			
U		1,2,3,4,7,8,9-HpCDF	ND		0.0000022				
J	DNQ	Total HpCDF	0.0000110		0.0000018	J			
J	DNQ	1,2,3,4,6,7,8-HpCDD	0.0000350		0.0000027	BJ			
J	BDNQ	Total HpCDD	0.0000490		0.0000027	J			
UJ	*10	OCDF		0.0000140	0.0000028	I			
		OCDD	0.0001900		0.0000056				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection. Totals are averages of individual isomer LODs.
D = Result obtained from analysis of diluted sample
B = Less than 10 times higher than method blank level
P = Recovery outside of method 1613 control limits
J = Concentration detected is below the calibration range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Method 1613B Analysis Results

Client - Del Mar Analytical

Client's Sample ID	IOJ1337-01 WC-1		
Lab Sample ID	1021959001		
Filename	U51105B_14		
Injected By	BAL		
Total Amount Extracted	854 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	10/18/2005
ICAL Date	11/04/2005	Received	10/21/2005
CCal Filename(s)	U51105B_01	Extracted	11/03/2005
Method Blank ID	BLANK-8208	Analyzed	11/06/2005 05:21

ev Lvl	Qual code	Native Isomers	Conc ug/L	EMPC ug/L	LOD ug/L		Internal Standards	ng's Added	Percent Recovery
U		2,3,7,8-TCDF	ND	----0.00000096			2,3,7,8-TCDF-13C	2.00	82
U		Total TCDF	ND	----0.00000096			2,3,7,8-TCDD-13C	2.00	87
							1,2,3,7,8-PeCDF-13C	2.00	91
U		2,3,7,8-TCDD	ND	----0.00000200			2,3,4,7,8-PeCDF-13C	2.00	98
U		Total TCDD	ND	----0.00000200			1,2,3,7,8-PeCDD-13C	2.00	108
							1,2,3,4,7,8-HxCDF-13C	2.00	92
U		1,2,3,7,8-PeCDF	ND	----0.00000190			1,2,3,6,7,8-HxCDF-13C	2.00	90
UJ	*10	2,3,4,7,8-PeCDF	----0.00000170	0.00000110	I		2,3,4,6,7,8-HxCDF-13C	2.00	93
U		Total PeCDF	ND	----0.00000150			1,2,3,7,8,9-HxCDF-13C	2.00	91
							1,2,3,4,7,8-HxCDD-13C	2.00	88
U		1,2,3,7,8-PeCDD	ND	----0.00000210			1,2,3,6,7,8-HxCDD-13C	2.00	84
U		Total PeCDD	ND	----0.00000210			1,2,3,4,6,7,8-HpCDF-13C	2.00	78
							1,2,3,4,7,8,9-HpCDF-13C	2.00	70
UJ	B	1,2,3,4,7,8-HxCDF	0.0000021	----0.00000120	BJ		1,2,3,4,6,7,8-HpCDD-13C	2.00	87
UJ	B	1,2,3,6,7,8-HxCDF	0.0000024	----0.00000097	BJ		OCDD-13C	4.00	78
UJ	*10	2,3,4,6,7,8-HxCDF	----0.00000160	0.00000081	I				
U		1,2,3,7,8,9-HxCDF	ND	----0.00000100			1,2,3,4-TCDD-13C	2.00	NA
J	B,DNQ	Total HxCDF	0.0000091	----0.00000100	BJ		1,2,3,7,8,9-HxCDD-13C	2.00	NA
UJ	B	1,2,3,4,7,8-HxCDD	0.0000017	----0.00000160	BJ		2,3,7,8-TCDD-37Cl4	0.20	76
J	L,DNQ	1,2,3,6,7,8-HxCDD	0.0000059	----0.00000110	J				
UJ	*10	1,2,3,7,8,9-HxCDD	----0.00000170	0.00000100	I				
J	B,DNQ	Total HxCDD	0.0000180	----0.00000120	BJ				
UJ	*10	1,2,3,4,6,7,8-HpCDF	----0.00000210	0.00000190	E				
U		1,2,3,4,7,8,9-HpCDF	ND	----0.00000230					
U		Total HpCDF	ND	----0.00000210					
		1,2,3,4,6,7,8-HpCDD	0.0000640	----0.00000170					
		Total HpCDD	0.0001100	----0.00000170					
J	DNQ	OCDF	0.0000240	----0.00000320	J				
J	L	OCDD	0.0004400	----0.00000360					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection. Totals are averages of individual isomer LODs.
D = Result obtained from analysis of diluted sample
B = Less than 10 times higher than method blank level
P = Recovery outside of method 1613 control limits
J = Concentration detected is below the calibration range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Method 1613B Analysis Results

Client - Del Mar Analytical

Client's Sample ID	IOJ1337-01		
Lab Sample ID	1021959001-R WC-1		
Filename	F51110A_08		
Injected By	SMT		
Total Amount Extracted	1030 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	10/18/2005
ICAL Date	10/22/2005	Received	10/21/2005
CCal Filename(s)	F51109C_18	Extracted	11/08/2005
Method Blank ID	BLANK-8223	Analyzed	11/10/2005 18:42

Qual Code	Native Isomers	Conc ug/L	EMPC ug/L	LOD ug/L		Internal Standards	ng's Added	Percent Recovery
R	2,3,7,8-TCDF	ND	-----	0.0000027		2,3,7,8-TCDF-13C	2.00	71
D	Total TCDF	0.000015	-----	0.0000027		2,3,7,8-TCDD-13C	2.00	78
						1,2,3,7,8-PeCDF-13C	2.00	76
	2,3,7,8-TCDD	ND	-----	0.0000016		2,3,4,7,8-PeCDF-13C	2.00	78
	Total TCDD	ND	-----	0.0000016		1,2,3,7,8-PeCDD-13C	2.00	95
						1,2,3,4,7,8-HxCDF-13C	2.00	77
	1,2,3,7,8-PeCDF	ND	-----	0.0000018		1,2,3,6,7,8-HxCDF-13C	2.00	81
	2,3,4,7,8-PeCDF	0.000016	-----	0.0000028	J	2,3,4,6,7,8-HxCDF-13C	2.00	77
	Total PeCDF	0.000120	-----	0.0000023		1,2,3,7,8,9-HxCDF-13C	2.00	75
						1,2,3,4,7,8-HxCDD-13C	2.00	72
	1,2,3,7,8-PeCDD	0.000016	-----	0.0000023	J	1,2,3,6,7,8-HxCDD-13C	2.00	86
	Total PeCDD	0.000019	-----	0.0000023	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	73
						1,2,3,4,7,8,9-HpCDF-13C	2.00	67
	1,2,3,4,7,8-HxCDF	0.000028	-----	0.0000029	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	87
	1,2,3,6,7,8-HxCDF	0.000022	-----	0.0000034	J	OCDD-13C	4.00	77
	2,3,4,6,7,8-HxCDF	0.000063	-----	0.0000029				
	1,2,3,7,8,9-HxCDF	0.000020	-----	0.0000021	J	1,2,3,4-TCDD-13C	2.00	NA
	Total HxCDF	0.000480	-----	0.0000028		1,2,3,7,8,9-HxCDD-13C	2.00	NA
	1,2,3,4,7,8-HxCDD	0.000034	-----	0.0000027	J	2,3,7,8-TCDD-37Cl4	0.20	79
	1,2,3,6,7,8-HxCDD	0.000800	-----	0.0000045				
	1,2,3,7,8,9-HxCDD	0.000140	-----	0.0000051				
	Total HxCDD	0.002000	-----	0.0000041				
	1,2,3,4,6,7,8-HpCDF	0.000330	-----	0.0000025				
	1,2,3,4,7,8,9-HpCDF	0.000012	-----	0.0000037	J			
	Total HpCDF	0.000350	-----	0.0000031				
	1,2,3,4,6,7,8-HpCDD	0.010000	-----	0.0000036				
	Total HpCDD	0.016000	-----	0.0000036				
	OCDF	0.000210	-----	0.0000020				
	OCDD	0.053000	-----	0.0000017				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection. Totals are averages of individual isomer LODs.
D = Result obtained from analysis of diluted sample
B = Less than 10 times higher than method blank level
P = Recovery outside of method 1613 control limits
J = Concentration detected is below the calibration range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....1021959

Level IV Validated

REPORT OF LABORATORY ANALYSIS

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar - Irvine
Reviewer E. Wessling
Analysis/Method General Minerals

Package ID T713WCE 5
Task Order 313150010
SDG No. IOJ0739
No. of Analyses 9
Date: December 12, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	- no sample weights for surfactants
GC/MS Tune/Inst. Performance	~~- estimated values between the MDL and RL~~ Rev 1 MC 02.10.06
Calibration	- HT for mBAS
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

amec

DATA VALIDATION REPORT

Topanga Fire

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOJ0739

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Support
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ0739
Project Manager:	P. Costa
Matrix:	Soil and Ash
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	9
Reviewer:	E. Wessling
Date of Review:	December 12, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.3, and 9014, Standard Methods for the Examination of Water and Wastewater Method SM5540-CMOD*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
CF-1-Soil	WL008	IOJ0739-01	Soil	General Minerals
CF-1-Ash	WL009	IOJ0739-02	Ash	General Minerals
PCC-1-Soil	WL010	IOJ0739-03	Soil	General Minerals
PCC-1-Ash	WL011	IOJ0739-04	Ash	General Minerals
WC-1-Ash	WL014	IOJ0739-05	Ash	General Minerals
WC-1-Soil	WL015	IOJ0739-06	Soil	General Minerals
CRP-1-Soil	WL007	IOJ0739-07	Soil	General Minerals
SC-1-Soil	WL012	IOJ0739-08	Soil	General Minerals
SC-1-Ash	WL013	IOJ0739-09	Ash	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of 4°C ± 2°C. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel and accounted for the samples and all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analysis. The analytical holding times for all analyses except MBAS were met. MBAS results were qualified as estimated, "J," for detects. No further qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995. Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

Target compounds were not detected in the associated method blanks, (5J12122-BLK1, 5J13079-BLK1, 5J17088-BLK1, 5J18072-BLK1 5J18106-BLK1, 5J19057-BLK1, 5J19110-BLK1, 5J19114-BLK1, 5J20071-BLK1, 5J20116-LK1, 5J20143-BLK1, 5J22002-BLK1 and 5J18104-BLK1). Raw data was reviewed to verify the blank data. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the laboratory-established control limits. Raw data was reviewed to verify the values reported for the LCS recoveries. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. Actual sample weights were not recorded for the MBAS analysis. All MBAS data were qualified as estimated, "J," for detects and "UJ," for nondetects. No transcription errors or calculation errors were noted. No further qualifications were required.

2.11 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOJ0739-01 (WL008 - Soil)					**Sampled: 10/07/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J12122	0.10	0.10	88	1	10/12/05	10/12/05			
Sample ID: IOJ0739-02 (WL009 - Solid)					**Sampled: 10/07/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J12122	0.10	0.10	99	1	10/12/05	10/12/05			
Sample ID: IOJ0739-03 (WL010 - Soil)					**Sampled: 10/07/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J12122	0.10	0.10	99	1	10/12/05	10/12/05			
Sample ID: IOJ0739-04 (WL011 - Solid)					**Sampled: 10/07/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J12122	0.10	0.10	100	1	10/12/05	10/12/05			
Sample ID: IOJ0739-05 (WL014 - Solid)					**Sampled: 10/10/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J18072	0.10	0.10	99	1	10/18/05	10/18/05			
Sample ID: IOJ0739-06 (WL015 - Soil)					**Sampled: 10/10/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J18072	0.10	0.10	100	1	10/18/05	10/18/05			
Sample ID: IOJ0739-07 (WL007 - Soil)					**Sampled: 10/07/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19110	0.10	0.10	99	1	10/19/05	10/19/05			
Sample ID: IOJ0739-08 (WL012 - Soil)					**Sampled: 10/10/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19110	0.10	0.10	99	1	10/19/05	10/19/05			
Sample ID: IOJ0739-09 (WL013 - Solid)					**Sampled: 10/10/05**						
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19110	0.10	0.10	99	1	10/19/05	10/19/05			
Sample ID: IOJ0739-01 (WL008 - Soil)					**Sampled: 10/07/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.6	6.8	ND	0.998	10/19/05	10/19/05		U	
Total Cyanide	EPA 9014	5J17088	0.49	0.57	6.7	0.995	10/17/05	10/17/05			
Sulfate	EPA 300.0	5J13079	100	110	4800	19.9	10/13/05	10/14/05			
Surfactants (MBAS)	SM5540-C MOD.	5J18106	0.50	1.1	3.6	0.997	10/18/05	10/18/05		J	x10

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Check	Qual Code
Sample ID: IOJ0739-02 (WL009 - Solid)					**Sampled: 10/07/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	ND	1	10/19/05	10/19/05		u	
Total Cyanide	EPA 9014	5J17088	0.43	0.50	2.8	1	10/17/05	10/17/05			
Sulfate	EPA 300.0	5J13079	230	250	1100	49.8	10/13/05	10/14/05			
Surfactants (MBAS)	SM5540-C MOD.	5J18106	220	500	1400	501	10/18/05	10/18/05		J	* 10
Sample ID: IOJ0739-03 (WL010 - Soil)					**Sampled: 10/07/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	10	0.996	10/19/05	10/19/05			*
Total Cyanide	EPA 9014	5J17088	0.43	0.50	1.4	0.985	10/17/05	10/17/05			
Sulfate	EPA 300.0	5J13079	230	250	17000	49.6	10/13/05	10/18/05			
Surfactants (MBAS)	SM5540-C MOD.	5J18106	0.44	1.0	3.1	0.999	10/18/05	10/18/05		J	* 10
Sample ID: IOJ0739-04 (WL011 - Solid)					**Sampled: 10/07/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	8.7	0.998	10/19/05	10/19/05			
Total Cyanide	EPA 9014	5J17088	0.43	0.50	3.9	0.99	10/17/05	10/17/05			
Sulfate	EPA 300.0	5J13079	230	250	6200	50	10/13/05	10/14/05			
Surfactants (MBAS)	SM5540-C MOD.	5J18106	0.44	1.0	1.7	1	10/18/05	10/18/05		J	* 10
Sample ID: IOJ0739-05 (WL014 - Solid)					**Sampled: 10/10/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.1	3.3	0.998	10/19/05	10/19/05	J		
Total Cyanide	EPA 9014	5J18104	0.43	0.51	5.2	1	10/18/05	10/18/05			
Sulfate	EPA 300.0	5J19057	230	250	3800	49.9	10/19/05	10/19/05			
Surfactants (MBAS)	SM5540-C MOD.	5J18106	0.44	1.0	1.3	0.999	10/18/05	10/18/05		J	* 10
Sample ID: IOJ0739-06 (WL015 - Soil)					**Sampled: 10/10/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	4.9	0.998	10/19/05	10/19/05	J		
Total Cyanide	EPA 9014	5J18104	0.43	0.50	0.58	1	10/18/05	10/18/05			
Sulfate	EPA 300.0	5J19057	4.5	5.0	480	0.998	10/19/05	10/19/05			
Surfactants (MBAS)	SM5540-C MOD.	5J18106	0.44	1.0	1.4	1	10/18/05	10/18/05		J	* 10
Sample ID: IOJ0739-07 (WL007 - Soil)					**Sampled: 10/07/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.1	30	0.998	10/20/05	10/20/05			
Total Cyanide	EPA 9014	5J20116	0.43	0.50	6.6	0.99	10/20/05	10/20/05			
Sulfate	EPA 300.0	5J20071	23	25	1300	4.99	10/20/05	10/20/05			
Surfactants (MBAS)	SM5540-C MOD.	5J22002	0.44	1.0	0.48	1	10/21/05	10/21/05	J	J	* 10

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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Rev 1 MC 02.10.06

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual decl
Sample ID: IOJ0739-08 (WL012 - Soil)					**Sampled: 10/10/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.1	**8.7**	1	10/20/05	10/20/05			
Total Cyanide	EPA 9014	5J20116	0.43	0.50	ND	0.99	10/20/05	10/20/05		U	
Sulfate	EPA 300.0	5J20071	4.6	5.1	**170**	1	10/20/05	10/20/05			
Surfactants (MBAS)	SM5540-C MOD.	5J22002	0.89	2.0	**4.8**	2	10/21/05	10/21/05		J	* 10
Sample ID: IOJ0739-09 (WL013 - Solid)					**Sampled: 10/10/05**						
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J20143	1.4	6.0	**14**	0.998	10/20/05	10/20/05			
Total Cyanide	EPA 9014	5J20116	0.43	0.50	**2.9**	0.995	10/20/05	10/20/05			
Sulfate	EPA 300.0	5J20071	90	100	**3700**	19.9	10/20/05	10/20/05			
Surfactants (MBAS)	SM5540-C MOD.	5J22002	4.4	10	**30**	10	10/21/05	10/21/05		J	* 10

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T713WC~~1~~ 3
Task Order 313150010
SDG No. IOJ1120
No. of Analyses 2

Laboratory Del Mar - Irvine
Reviewer E. Wessling
Analysis/Method General Minerals

Date: December 12, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	- no sample weights for surfactants
GC/MS Tune/Inst. Performance	- ~~estimated values between the MDL and RL~~ MC 2.10.06 Rev 1
Calibration	- Closing CCV outlier for ~~cyanide~~ MBAS
Method blanks	- HT for MBAS
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOJ1120

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Support
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ1120
Project Manager:	P. Costa
Matrix:	Soil and Ash
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	2
Reviewer:	E. Wessling
Date of Review:	December 12, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.3, and 9014, Standard Methods for the Examination of Water and Wastewater Method SM5540-CMOD*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
SMM-1-Soil	WL022	IOJ1120-01	Soil	General Minerals
SMM-1-Ash	WL023	IOJ1122-02	Ash	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory above the temperature limits of 4°C ± 2°C at 17°C. As the samples were couriered directly from the site to the laboratory, this sampled did not have sufficient time to cool. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel and accounted for the samples and all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analysis. The analytical holding times for all analyses except MBAS were met. MBAS results were qualified as estimated, "J," for detects and "UJ," for nondetects. No further qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995. Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110% with the exception of the closing CCV for the MBAS analysis which was above the control limits. The detects for MBAS was qualified as estimated, "J." No qualifications were required.

2.3 BLANKS

Target compounds were not detected in the associated method blanks, (5J18066-BLK1, 5J19111-BLK1, 5J19117-BLK1, 5J24113-BLK1 and 5J26001-BLK1). Raw data was reviewed to verify the blank data. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the laboratory-established control limits. Raw data was reviewed to verify the values reported for the LCS recoveries. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. Actual sample weights were not recorded for the MBAS analysis. All MBAS data were qualified as estimated, "J," for detects and "UJ," for nondetects. No transcription errors or calculation errors were noted. No further qualifications were required.

2.11 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1113
Report Number: IOJ1120

Sampled: 10/13/05
Received: 10/14/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOJ1120-01 (WL022 - Soil)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	98	1	10/19/05	10/19/05			
Sample ID: IOJ1120-02 (WL023 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J19111	0.10	0.10	97	1	10/19/05	10/19/05			
Sample ID: IOJ1120-01 (WL022 - Soil)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J24113	1.4	6.1	3.5	1	10/24/05	10/24/05	J	✗	
Total Cyanide	EPA 9014	5J19117	0.43	0.50	0.73	0.99	10/19/05	10/20/05			
Sulfate	EPA 300.0	5J18066	4.6	5.1	140	1	10/18/05	10/18/05			
Surfactants (MBAS)	SM5540-C MOD.	5J26001	2.2	5.1	ND	5	10/24/05	10/26/05	RL-1	UJ	* 10
Sample ID: IOJ1120-02 (WL023 - Solid)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J24113	1.4	6.2	23	1	10/24/05	10/24/05			
Total Cyanide	EPA 9014	5J19117	0.44	0.51	2.4	0.995	10/19/05	10/20/05			
Sulfate	EPA 300.0	5J18066	46	51	2400	10	10/18/05	10/19/05			
Surfactants (MBAS)	SM5540-C MOD.	5J26001	0.91	2.1	3.2	2.01	10/24/05	10/26/05		J	R, x10

Rev'd MC 02.10.06

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar - Irvine
Reviewer E. Wessling
Analysis/Method General Minerals

Package ID T713WC1
Task Order 313150010
SDG No. IOJ0411
No. of Analyses 5
Date: December 12, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	- no sample weights for surfactants
GC/MS Tune/Inst. Performance	~~- estimated values between the MDL and RL~~ MC 2-10-06 EW
Calibration	- sample results corrected for one sulfate value
Method blanks	- MS/MSD for MBAS
Surrogates	- HT for MBAS
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOJ0411

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Fire Support
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ0411
Project Manager:	P. Costa
Matrix:	Soil and Ash
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	5
Reviewer:	E. Wessling
Date of Review:	December 12, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.3, and 9014, Standard Methods for the Examination of Water and Wastewater Method SM5540-CMOD*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Upstream001 Ash	WL001	IOJ0411-01	Ash	General Minerals
Upstream001 Soil	WL002	IOJ0411-02	Soil	General Minerals
Upstream002	WL004	IOJ0411-04	Soil	General Minerals
Upstream002	WL005	IOJ0411-05	Ash	General Minerals
RP-1	WL006	IOJ0411-06	Soil	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of 4°C ± 2°C. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel and accounted for the samples and all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analysis. The analytical holding times for all analyses except MBAS were met. MBAS results were qualified as estimated, "J," for detects and "UJ," for nondetects. No further qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995. Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

Target compounds were not detected in the associated method blanks, (5J12002-BLK1, 5J12075-BLK1, 5J14111-BLK1, and 5J19114-BLK1). Raw data was reviewed to verify the blank data. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the laboratory-established control limits. Raw data was reviewed to verify the values reported for the LCS recoveries. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample WL001 for MBAS analysis. RPDs were within control limits. No other MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no further assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on sample WL001 for MBAS analysis. Percent recoveries were below QC acceptance criteria. All site samples were qualified as estimated, "J," for detects and "UJ," for nondetects. No other MS/MSD analyses were performed in association with this SDG; therefore, no further assessment was made with respect to this criterion. Method accuracy was based on LCS results for analyses without an MS/MSD. No further qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. Sulfate in sample WL001 was incorrectly calculated by the laboratory. The reported value was corrected by the reviewer. Actual sample weights were not recorded for the MBAS analysis. All MBAS data were qualified as estimated, "J," for detects and "UJ," for nondetects. No further transcription errors or calculation errors were noted. No further qualifications were required.

2.11 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

INORGANICS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOJ0411-01 (WL001 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J11075	0.10	0.10	100	1	10/11/05	10/11/05			
Sample ID: IOJ0411-02 (WL002 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J11075	0.10	0.10	100	1	10/11/05	10/11/05			
Sample ID: IOJ0411-04 (WL004 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J11075	0.10	0.10	98	1	10/11/05	10/11/05			
Sample ID: IOJ0411-05 (WL005 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J11075	0.10	0.10	100	1	10/11/05	10/11/05			
Sample ID: IOJ0411-06 (WL006 - Solid)											
Reporting Units: %											
Percent Solids	EPA 160.3 MOD	5J11075	0.10	0.10	99	1	10/11/05	10/11/05			
Sample ID: IOJ0411-01 (WL001 - Solid)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	2.8	12	12	1.99	10/19/05	10/19/05			
Total Cyanide	EPA 9014	5J14111	0.43	0.50	3.3	1	10/14/05	10/14/05			
Sulfate	EPA 300.0	5J12075	90	100	~~1500~~ 4400	20	10/12/05	10/13/05			
Surfactants (MBAS)	SM5540-C MOD.	5J12002	0.44	1.0	1.4	1	10/11/05	10/12/05	M2	J	
Sample ID: IOJ0411-02 (WL002 - Solid)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	5.1	0.998	10/19/05	10/19/05	J		
Total Cyanide	EPA 9014	5J14111	0.43	0.50	0.60	1	10/14/05	10/14/05			
Sulfate	EPA 300.0	5J12075	4.5	5.0	190	1	10/12/05	10/12/05			
Surfactants (MBAS)	SM5540-C MOD.	5J12002	0.44	1.0	ND	1	10/11/05	10/12/05		U5	
Sample ID: IOJ0411-04 (WL004 - Solid)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.1	6.8	0.996	10/19/05	10/19/05			
Total Cyanide	EPA 9014	5J14111	0.44	0.51	1.1	0.995	10/14/05	10/14/05			
Sulfate	EPA 300.0	5J12075	9.1	10	690	2	10/12/05	10/13/05			
Surfactants (MBAS)	SM5540-C MOD.	5J12002	0.45	1.0	0.69	1	10/11/05	10/12/05	J	J	

MC 2.10.06 Rev1

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

INORGANICS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOJ0411-05 (WL005 - Solid)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	8.2	0.996	10/19/05	10/19/05			
Total Cyanide	EPA 9014	5J14111	0.43	0.50	5.7	0.995	10/14/05	10/14/05			
Sulfate	EPA 300.0	5J12075	90	100	7600	19.9	10/12/05	10/13/05			
Surfactants (MBAS)	SM5540-C MOD.	5J12002	0.44	1.0	2.0	1	10/11/05	10/12/05		J	*10
Sample ID: IOJ0411-06 (WL006 - Solid)											
Reporting Units: mg/kg dry											
Ammonia-NH3	EPA 350.3 MOD.	5J19114	1.4	6.0	2.1	0.998	10/19/05	10/19/05	J		
Total Cyanide	EPA 9014	5J14111	0.43	0.50	0.64	0.995	10/14/05	10/14/05			
Sulfate	EPA 300.0	5J12075	4.5	5.0	150	0.995	10/12/05	10/13/05			
Surfactants (MBAS)	SM5540-C MOD.	5J12002	2.2	5.0	ND	5	10/11/05	10/12/05	RL-1	UJ	*10

MC 2.10.04 Rev 1

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Package ID T713SV3
Task Order 313150010
SDG No. Multiple
No. of Analyses 4

Laboratory Del Mar Analytical
Reviewer K. Shadowlight
Analysis/Method Semivolatiles by Method 625

Date: December 6, 2005
Reviewer's Signature K. Shadowlight

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	--Initial calibration outliers (r^2 values <0.995)
GC/MS Tune/Inst. Performance	--Continuing calibration %D outlier
Calibration	-- Method blank contamination
Method blanks	-- Blank spike/Blank spike duplicate recovery outliers
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Sampling

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUPS: IOJ1234, IOJ1235, IOJ1236, IOJ1337

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Sampling
Contract Task Order #:	313150010
SDG#:	IOJ1234, IOJ1235, IOJ1236, IOJ1337
Project Manager:	P. Costa
Matrix:	Water
Analysis:	Semivolatiles
QC Level:	Level IV
No. of Samples:	4
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	December 6, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2), EPA Method 625,* and the *National Functional Guidelines For Organic Data Review* (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
PCC-1	WL034	IOJ1234-01	water	625
CF-1	WL033	IOJ1235-01	water	625
SSM-1	WL032	IOJ1236-01	water	625
WC-1	WL035	IOJ1337-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Sample WL035 was received at the laboratory above the temperature limits of 4°C ±2°C at 17°C; however, due to the nonvolatile nature of the analytes no qualifications were required. The remaining samples in these SDGs were received at the laboratory within the temperature limits of 4°C ±2°C. The analysis did not require preservation, and no preservation was noted in the field. According to the case narratives and sample log in sheets for these SDGs, the samples were received intact and on ice. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by both field and laboratory personnel. The COCs accounted for the analyses presented in these SDGs; however, the EPA IDs for all samples in these SDGs were changed at the request of Montgomery Watson personnel in a memo dated 11/04/05. The EPA IDs on the result summary forms reflect this change. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The water samples were extracted within seven days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the criteria specified in Method 625, and the samples were analyzed within 12 hours of the DFTPP injection times. No qualifications were required.

2.3 CALIBRATION

There were two initial calibrations associated with these SDGs dated 07/08/05 and 10/12/05 (benzidine only). The average RRFs were ≥0.05 in both initial calibrations. The %RSDs were ≤35% or r^2 values were ≥0.995 for the target compounds listed on the sample summary forms, with the exception of the r^2 values < 0.995 for target compounds 2,4-dinitrophenol and 4-nitrophenol. Nondetect results for 2,4-dinitrophenol and 4-nitrophenol were qualified as estimated, "UJ," in the samples of these SDGs. A representative number of average RRFs and %RSDs were checked from the raw data, and no calculation or transcription errors were noted.

The continuing calibrations associated with the sample analyses were analyzed 10/25/05 and 10/27/05 (benzidine only). The RRFs for the target compounds were ≥0.05, and the %Ds were ≤20% with the exception of the %D for dibenzo(a,h)anthracene in the continuing calibration dated 10/25/05. Nondetect results for dibenzo(a,h)anthracene were qualified as estimated, "UJ," in the samples of these SDGs.

A representative number of average RRFs and %RSDs in the initial calibrations and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

One method blank (5J20053-BLK1) was extracted and analyzed with these SDGs. Target compound butyl benzyl phthalate was reported at a concentration of 0.74µg/L in the method blank. The target compound was also reported at concentrations between the MDL and the reporting limit in the samples of these SDGs. The results for butyl benzyl phthalate were qualified as nondetects "U," and raised to the reporting limits for the samples in these SDGs. Review of the raw data indicated no false negatives or false positives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5J20053-BS1/BSD1) was extracted and analyzed with these SDGs. For blank spike/blank spike duplicate pairs, qualifications are applied, if necessary, to the associated samples based on those recoveries consistently outside of the laboratory-established QC limits in both the blank spike and blank spike duplicate. Results for those compounds with recoveries not consistent within the pair, with RPDs above the QC limit, are qualified as estimated, "UJ" for nondetects and "J" for detects, in the associated samples.

Target compound benzidine was not recovered in the blank spike or blank spike duplicate; therefore, the nondetect results for benzidine were rejected, "R," in the samples of these SDGs. Although the recovery of benzoic acid was within QC limits in the blank spike duplicate, it was not recovered in the blank spike; therefore, the reviewer deemed it necessary to qualify results for benzoic acid as estimated, "J," for detects and "UJ," for nondetects in the samples of these SDGs. Target compounds hexachorobutadiene, hexachloroethane, and 1,2,4-trichlorobenzene were recovered below QC limits but greater than 10% in both the blank spike and blank spike duplicate pair. Nondetect results for the aforementioned target compounds were qualified as estimated, "UJ," in the samples of these SDGs. Target compounds bis(2-chloroethyl)ether, 4-chloroaniline, 1,3-dichlorobenzene, 1,4-dichlorbenzene, 2-nitrophenol, and n-nitrosodimethylamine were recovered marginally below QC limits in the blank spike duplicate. The remaining recoveries and all RPDs were within the laboratory-established QC limits. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No further qualifications were required.

2.6 SURROGATE RECOVERY

The surrogate recoveries reported on the sample result summaries were within the laboratory QC limits; however, the results for benzidine were reported from a separate analysis. The samples were analyzed on 10/27/05 for benzidine only, and all surrogate recoveries were less than 10% for all samples. The reviewer deemed it necessary to reject, "R," the nondetect results for benzidine in the samples of these SDGs. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No further qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples identified for these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ±30 seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for 66 semivolatile compounds by EPA Method 625. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. Samples WL034 and WL032 were analyzed at a 4× and 5× dilution, respectively. The results and reporting limits were appropriately adjusted for sample amount and dilution when applicable. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for these SDGs. No qualifications were required.

2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Offsite Storm Water Samples Palo Comado Canyon Report Number: IOJ1234	Sampled: 10/18/05 Received: 10/18/05

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Raw Qual	Data Qualifiers / Qual code
Sample ID: IOJ1234-01 (WL034 - Water)										
Reporting Units: ug/l										
Acenaphthene	EPA 625	5J20053	0.40	2.0	ND	3.85	10/23/05	10/25/05	U	
Acenaphthylene	EPA 625	5J20053	0.40	2.0	ND	3.85	10/23/05	10/25/05		
Aniline	EPA 625	5J20053	12	40	ND	3.85	10/23/05	10/25/05		
Anthracene	EPA 625	5J20053	0.33	2.0	ND	3.85	10/23/05	10/25/05		
Benzidine	EPA 625	5J20053	3.0	5.0	ND	0.962	10/23/05	10/27/05	R	L2 S, L
Benzoic acid	EPA 625	5J20053	15	80	85	3.85	10/23/05	10/25/05	J	L2 L
Benzo(a)anthracene	EPA 625	5J20053	0.15	20	ND	3.85	10/23/05	10/25/05	U	
Benzo(a)pyrene	EPA 625	5J20053	0.56	8.0	ND	3.85	10/23/05	10/25/05		
Benzo(b)fluoranthene	EPA 625	5J20053	0.20	8.0	ND	3.85	10/23/05	10/25/05		
Benzo(g,h,i)perylene	EPA 625	5J20053	0.24	20	ND	3.85	10/23/05	10/25/05		
Benzo(k)fluoranthene	EPA 625	5J20053	0.21	2.0	ND	3.85	10/23/05	10/25/05		
Benzyl alcohol	EPA 625	5J20053	0.84	20	27	3.85	10/23/05	10/25/05		
Bis(2-chloroethoxy)methane	EPA 625	5J20053	0.29	2.0	ND	3.85	10/23/05	10/25/05	U	
Bis(2-chloroethyl)ether	EPA 625	5J20053	0.34	2.0	ND	3.85	10/23/05	10/25/05		L2
Bis(2-chloroisopropyl)ether	EPA 625	5J20053	0.44	2.0	ND	3.85	10/23/05	10/25/05		
Bis(2-ethylhexyl)phthalate	EPA 625	5J20053	4.4	20	ND	3.85	10/23/05	10/25/05		
4-Bromophenyl phenyl ether	EPA 625	5J20053	0.48	4.0	ND	3.85	10/23/05	10/25/05		
Butyl benzyl phthalate	EPA 625	5J20053	1.4	20	ND 32	3.85	10/23/05	10/25/05	U	J B
4-Chloroaniline	EPA 625	5J20053	0.80	8.0	ND	3.85	10/23/05	10/25/05	U	L2
2-Chloronaphthalene	EPA 625	5J20053	0.24	2.0	ND	3.85	10/23/05	10/25/05		
4-Chloro-3-methylphenol	EPA 625	5J20053	1.4	8.0	ND	3.85	10/23/05	10/25/05		
4-Chlorophenyl phenyl ether	EPA 625	5J20053	0.22	2.0	ND	3.85	10/23/05	10/25/05		
2-Chlorophenol	EPA 625	5J20053	0.48	4.0	ND	3.85	10/23/05	10/25/05		
Chrysene	EPA 625	5J20053	0.29	2.0	ND	3.85	10/23/05	10/25/05		
Dibenz(a,h)anthracene	EPA 625	5J20053	0.33	2.0	ND	3.85	10/23/05	10/25/05	UJ	C
Dibenzofuran	EPA 625	5J20053	0.30	2.0	ND	3.85	10/23/05	10/25/05	U	
Di-n-butyl phthalate	EPA 625	5J20053	1.0	8.0	ND	3.85	10/23/05	10/25/05		
1,2-Dichlorobenzene	EPA 625	5J20053	0.44	2.0	ND	3.85	10/23/05	10/25/05		
1,3-Dichlorobenzene	EPA 625	5J20053	0.52	2.0	ND	3.85	10/23/05	10/25/05		L2
1,4-Dichlorobenzene	EPA 625	5J20053	0.20	2.0	ND	3.85	10/23/05	10/25/05		L2
3,3-Dichlorobenzidine	EPA 625	5J20053	3.7	20	ND	3.85	10/23/05	10/25/05		
2,4-Dichlorophenol	EPA 625	5J20053	0.84	8.0	ND	3.85	10/23/05	10/25/05		
Diethyl phthalate	EPA 625	5J20053	0.48	4.0	ND	3.85	10/23/05	10/25/05		
2,4-Dimethylphenol	EPA 625	5J20053	1.2	8.0	ND	3.85	10/23/05	10/25/05		
Dimethyl phthalate	EPA 625	5J20053	0.32	2.0	ND	3.85	10/23/05	10/25/05		
4,6-Dinitro-2-methylphenol	EPA 625	5J20053	1.5	20	ND	3.85	10/23/05	10/25/05		
2,4-Dinitrophenol	EPA 625	5J20053	11	20	ND	3.85	10/23/05	10/25/05	UJ	C
2,4-Dinitrotoluene	EPA 625	5J20053	0.92	20	ND	3.85	10/23/05	10/25/05	U	
2,6-Dinitrotoluene	EPA 625	5J20053	0.96	20	ND	3.85	10/23/05	10/25/05		
Di-n-octyl phthalate	EPA 625	5J20053	0.68	20	ND	3.85	10/23/05	10/25/05		
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5J20053	0.35	4.0	ND	3.85	10/23/05	10/25/05		

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MWH-Pasadena/Boeing	Project ID: Offsite Storm Water Samples	
300 North Lake Avenue, Suite 1200	Palo Comado Canyon	Sampled: 10/18/05
Pasadena, CA 91101	Report Number: IOJ1234	Received: 10/18/05
Attention: Bronwyn Kelly		

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Rev Qual	Data Qualifiers	Qual Code
Sample ID: IOJ1234-01 (WL034 - Water) - cont.											
Reporting Units: ug/l											
Fluoranthene	EPA 625	5J20053	0.36	2.0	ND	3.85	10/23/05	10/25/05	U		
Fluorene	EPA 625	5J20053	0.30	2.0	ND	3.85	10/23/05	10/25/05			
Hexachlorobenzene	EPA 625	5J20053	0.52	4.0	ND	3.85	10/23/05	10/25/05			
Hexachlorobutadiene	EPA 625	5J20053	1.5	8.0	ND	3.85	10/23/05	10/25/05	UJ	L2	L
Hexachlorocyclopentadiene	EPA 625	5J20053	7.2	20	ND	3.85	10/23/05	10/25/05	U		
Hexachloroethane	EPA 625	5J20053	2.0	12	ND	3.85	10/23/05	10/25/05	UJ	L2	L
Indeno(1,2,3-cd)pyrene	EPA 625	5J20053	0.76	8.0	ND	3.85	10/23/05	10/25/05	U		
Isophorone	EPA 625	5J20053	0.24	4.0	ND	3.85	10/23/05	10/25/05			
2-Methylnaphthalene	EPA 625	5J20053	0.52	4.0	ND	3.85	10/23/05	10/25/05			
2-Methylphenol	EPA 625	5J20053	1.1	8.0	**2.6**	3.85	10/23/05	10/25/05	J	J	DNQ
4-Methylphenol	EPA 625	5J20053	0.80	20	**5.5**	3.85	10/23/05	10/25/05	J	J	DNQ
Naphthalene	EPA 625	5J20053	0.52	4.0	ND	3.85	10/23/05	10/25/05	U		
2-Nitroaniline	EPA 625	5J20053	0.72	20	ND	3.85	10/23/05	10/25/05			
3-Nitroaniline	EPA 625	5J20053	1.4	20	ND	3.85	10/23/05	10/25/05			
4-Nitroaniline	EPA 625	5J20053	2.0	20	ND	3.85	10/23/05	10/25/05			
Nitrobenzene	EPA 625	5J20053	0.40	4.0	ND	3.85	10/23/05	10/25/05			
2-Nitrophenol	EPA 625	5J20053	0.92	8.0	ND	3.85	10/23/05	10/25/05		L2	
4-Nitrophenol	EPA 625	5J20053	2.9	20	ND	3.85	10/23/05	10/25/05	UJ		C
N-Nitrosodimethylamine	EPA 625	5J20053	0.88	8.0	ND	3.85	10/23/05	10/25/05	U	L2	
N-Nitroso-di-n-propylamine	EPA 625	5J20053	0.72	8.0	ND	3.85	10/23/05	10/25/05			
N-Nitrosodiphenylamine	EPA 625	5J20053	0.31	4.0	ND	3.85	10/23/05	10/25/05			
Pentachlorophenol	EPA 625	5J20053	3.1	8.0	ND	3.85	10/23/05	10/25/05			
Phenanthrene	EPA 625	5J20053	0.28	2.0	ND	3.85	10/23/05	10/25/05			
Phenol	EPA 625	5J20053	0.56	4.0	**14**	3.85	10/23/05	10/25/05			
Pyrene	EPA 625	5J20053	0.24	2.0	ND	3.85	10/23/05	10/25/05	U		
1,2,4-Trichlorobenzene	EPA 625	5J20053	0.40	4.0	ND	3.85	10/23/05	10/25/05	UJ	L2	L
2,4,5-Trichlorophenol	EPA 625	5J20053	0.30	8.0	ND	3.85	10/23/05	10/25/05	U		
2,4,6-Trichlorophenol	EPA 625	5J20053	0.40	4.0	ND	3.85	10/23/05	10/25/05	U		
Surrogate: 2-Fluorophenol (35-120%)					*66 %*						
Surrogate: Phenol-d6 (45-120%)					*65 %*						
Surrogate: 2,4,6-Tribromophenol (50-125%)					*93 %*						
Surrogate: Nitrobenzene-d5 (45-120%)					*74 %*						
Surrogate: 2-Fluorobiphenyl (45-120%)					*77 %*						
Surrogate: Terphenyl-d14 (45-135%)					*86 %*						

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
China Flat
Report Number: IOJ1235

Sampled: 10/18/05
Received: 10/18/05

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Rev Qual	Data Qualifiers / Qual code
Sample ID: IOJ1235-01 (WL033 - Water)										
Reporting Units: ug/l										
Acenaphthene	EPA 625	5J20053	0.10	0.50	ND	0.962	10/23/05	10/25/05	U	
Acenaphthylene	EPA 625	5J20053	0.10	0.50	ND	0.962	10/23/05	10/25/05		
Aniline	EPA 625	5J20053	2.9	10	ND	0.962	10/23/05	10/25/05		
Anthracene	EPA 625	5J20053	0.083	0.50	ND	0.962	10/23/05	10/25/05		
Benzidine	EPA 625	5J20053	3.0	5.0	ND	0.962	10/23/05	10/27/05	R	L2 L,S
Benzoic acid	EPA 625	5J20053	3.7	20	**19**	0.962	10/23/05	10/25/05	J	L2, J L,DNQ
Benzo(a)anthracene	EPA 625	5J20053	0.038	5.0	ND	0.962	10/23/05	10/25/05	U	
Benzo(a)pyrene	EPA 625	5J20053	0.14	2.0	ND	0.962	10/23/05	10/25/05		
Benzo(b)fluoranthene	EPA 625	5J20053	0.050	2.0	ND	0.962	10/23/05	10/25/05		
Benzo(g,h,i)perylene	EPA 625	5J20053	0.059	5.0	ND	0.962	10/23/05	10/25/05		
Benzo(k)fluoranthene	EPA 625	5J20053	0.053	0.50	ND	0.962	10/23/05	10/25/05		
Benzyl alcohol	EPA 625	5J20053	0.21	5.0	**11**	0.962	10/23/05	10/25/05		
Bis(2-chloroethoxy)methane	EPA 625	5J20053	0.072	0.50	ND	0.962	10/23/05	10/25/05	U	
Bis(2-chloroethyl)ether	EPA 625	5J20053	0.084	0.50	ND	0.962	10/23/05	10/25/05		L2
Bis(2-chloroisopropyl)ether	EPA 625	5J20053	0.11	0.50	ND	0.962	10/23/05	10/25/05		
Bis(2-ethylhexyl)phthalate	EPA 625	5J20053	1.1	5.0	ND	0.962	10/23/05	10/25/05		
4-Bromophenyl phenyl ether	EPA 625	5J20053	0.12	1.0	ND	0.962	10/23/05	10/25/05		
Butyl benzyl phthalate	EPA 625	5J20053	0.34	5.0	~~0.98~~	0.962	10/23/05	10/25/05	U	J, B B
4-Chloroaniline	EPA 625	5J20053	0.20	2.0	ND	0.962	10/23/05	10/25/05	U	L2
2-Chloronaphthalene	EPA 625	5J20053	0.059	0.50	ND	0.962	10/23/05	10/25/05		
4-Chloro-3-methylphenol	EPA 625	5J20053	0.34	2.0	ND	0.962	10/23/05	10/25/05		
4-Chlorophenyl phenyl ether	EPA 625	5J20053	0.056	0.50	ND	0.962	10/23/05	10/25/05		
2-Chlorophenol	EPA 625	5J20053	0.12	1.0	ND	0.962	10/23/05	10/25/05		
Chrysene	EPA 625	5J20053	0.072	0.50	ND	0.962	10/23/05	10/25/05		
Dibenz(a,h)anthracene	EPA 625	5J20053	0.083	0.50	ND	0.962	10/23/05	10/25/05	UJ	C
Dibenzofuran	EPA 625	5J20053	0.075	0.50	ND	0.962	10/23/05	10/25/05	U	
Di-n-butyl phthalate	EPA 625	5J20053	0.26	2.0	ND	0.962	10/23/05	10/25/05		
1,2-Dichlorobenzene	EPA 625	5J20053	0.11	0.50	ND	0.962	10/23/05	10/25/05		
1,3-Dichlorobenzene	EPA 625	5J20053	0.13	0.50	ND	0.962	10/23/05	10/25/05		L2
1,4-Dichlorobenzene	EPA 625	5J20053	0.050	0.50	ND	0.962	10/23/05	10/25/05		L2
3,3-Dichlorobenzidine	EPA 625	5J20053	0.93	5.0	ND	0.962	10/23/05	10/25/05		
2,4-Dichlorophenol	EPA 625	5J20053	0.21	2.0	ND	0.962	10/23/05	10/25/05		
Diethyl phthalate	EPA 625	5J20053	0.12	1.0	ND	0.962	10/23/05	10/25/05		
2,4-Dimethylphenol	EPA 625	5J20053	0.31	2.0	**1.1**	0.962	10/23/05	10/25/05	J	J DNQ
Dimethyl phthalate	EPA 625	5J20053	0.081	0.50	ND	0.962	10/23/05	10/25/05	U	
4,6-Dinitro-2-methylphenol	EPA 625	5J20053	0.38	5.0	ND	0.962	10/23/05	10/25/05	U	
2,4-Dinitrophenol	EPA 625	5J20053	2.7	5.0	ND	0.962	10/23/05	10/25/05	UJ	C
2,4-Dinitrotoluene	EPA 625	5J20053	0.23	5.0	ND	0.962	10/23/05	10/25/05	U	
2,6-Dinitrotoluene	EPA 625	5J20053	0.24	5.0	ND	0.962	10/23/05	10/25/05		
Di-n-octyl phthalate	EPA 625	5J20053	0.17	5.0	ND	0.962	10/23/05	10/25/05		
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5J20053	0.087	1.0	ND	0.962	10/23/05	10/25/05		

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MWH-Pasadena/Boeing	Project ID: Offsite Storm Water Samples	
300 North Lake Avenue, Suite 1200	China Flat	Sampled: 10/18/05
Pasadena, CA 91101	Report Number: IOJ1235	Received: 10/18/05
Attention: Bronwyn Kelly		

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOJ1235-01 (WL033 - Water) - cont.											
Reporting Units: ug/l											
Fluoranthene	EPA 625	5J20053	0.089	0.50	ND	0.962	10/23/05	10/25/05		U	
Fluorene	EPA 625	5J20053	0.075	0.50	ND	0.962	10/23/05	10/25/05		↓	
Hexachlorobenzene	EPA 625	5J20053	0.13	1.0	ND	0.962	10/23/05	10/25/05		↓	
Hexachlorobutadiene	EPA 625	5J20053	0.38	2.0	ND	0.962	10/23/05	10/25/05		UJ	L2 L
Hexachlorocyclopentadiene	EPA 625	5J20053	1.8	5.0	ND	0.962	10/23/05	10/25/05		U	
Hexachloroethane	EPA 625	5J20053	0.51	3.0	ND	0.962	10/23/05	10/25/05		UJ	L2 L
Indeno(1,2,3-cd)pyrene	EPA 625	5J20053	0.19	2.0	ND	0.962	10/23/05	10/25/05		U	
Isophorone	EPA 625	5J20053	0.059	1.0	**0.90**	0.962	10/23/05	10/25/05		J	J DNQ
2-Methylnaphthalene	EPA 625	5J20053	0.13	1.0	ND	0.962	10/23/05	10/25/05		U	
2-Methylphenol	EPA 625	5J20053	0.28	2.0	**2.1**	0.962	10/23/05	10/25/05			
4-Methylphenol	EPA 625	5J20053	0.20	5.0	**5.0**	0.962	10/23/05	10/25/05			
Naphthalene	EPA 625	5J20053	0.13	1.0	ND	0.962	10/23/05	10/25/05		U	
2-Nitroaniline	EPA 625	5J20053	0.18	5.0	ND	0.962	10/23/05	10/25/05		↓	
3-Nitroaniline	EPA 625	5J20053	0.35	5.0	ND	0.962	10/23/05	10/25/05		↓	
4-Nitroaniline	EPA 625	5J20053	0.49	5.0	ND	0.962	10/23/05	10/25/05		↓	
Nitrobenzene	EPA 625	5J20053	0.10	1.0	ND	0.962	10/23/05	10/25/05		↓	
2-Nitrophenol	EPA 625	5J20053	0.23	2.0	ND	0.962	10/23/05	10/25/05		↓	L2
4-Nitrophenol	EPA 625	5J20053	0.73	5.0	ND	0.962	10/23/05	10/25/05		UJ	C
N-Nitrosodimethylamine	EPA 625	5J20053	0.22	2.0	ND	0.962	10/23/05	10/25/05		U	L2
N-Nitroso-di-n-propylamine	EPA 625	5J20053	0.18	2.0	ND	0.962	10/23/05	10/25/05		↓	
N-Nitrosodiphenylamine	EPA 625	5J20053	0.077	1.0	ND	0.962	10/23/05	10/25/05		↓	
Pentachlorophenol	EPA 625	5J20053	0.78	2.0	ND	0.962	10/23/05	10/25/05		↓	
Phenanthrene	EPA 625	5J20053	0.071	0.50	ND	0.962	10/23/05	10/25/05		↓	
Phenol	EPA 625	5J20053	0.14	1.0	**13**	0.962	10/23/05	10/25/05			
Pyrene	EPA 625	5J20053	0.059	0.50	ND	0.962	10/23/05	10/25/05		U	
1,2,4-Trichlorobenzene	EPA 625	5J20053	0.10	1.0	ND	0.962	10/23/05	10/25/05		UJ	L2 L
2,4,5-Trichlorophenol	EPA 625	5J20053	0.075	2.0	ND	0.962	10/23/05	10/25/05		U	
2,4,6-Trichlorophenol	EPA 625	5J20053	0.10	1.0	ND	0.962	10/23/05	10/25/05		U	
Surrogate: 2-Fluorophenol (35-120%)					*64 %*						
Surrogate: Phenol-d6 (45-120%)					*56 %*						
Surrogate: 2,4,6-Tribromophenol (50-125%)					*91 %*						
Surrogate: Nitrobenzene-d5 (45-120%)					*73 %*						
Surrogate: 2-Fluorobiphenyl (45-120%)					*58 %*						
Surrogate: Terphenyl-d14 (45-135%)					*84 %*						

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Michele Harper
Project Manager

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Santa Susana Mts
Report Number: IOJ1236

Sampled: 10/18/05
Received: 10/18/05

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
								Rev Qual	RL-3 Qual code
Sample ID: IOJ1236-01 (WL032 - Water)									
Reporting Units: ug/l									
Acenaphthene	EPA 625	5J20053	0.50	2.5	ND	4.76	10/23/05	10/25/05 U	
Acenaphthylene	EPA 625	5J20053	0.50	2.5	ND	4.76	10/23/05	10/25/05	
Aniline	EPA 625	5J20053	14	50	ND	4.76	10/23/05	10/25/05	
Anthracene	EPA 625	5J20053	0.42	2.5	ND	4.76	10/23/05	10/25/05	
Benzidine	EPA 625	5J20053	3.0	5.0	ND	0.952	10/23/05	10/27/05 R	L2 L, S
Benzoic acid	EPA 625	5J20053	18	100	66	4.76	10/23/05	10/25/05 J	J, L2 L only
Benzo(a)anthracene	EPA 625	5J20053	0.19	25	ND	4.76	10/23/05	10/25/05 U	
Benzo(a)pyrene	EPA 625	5J20053	0.70	10	ND	4.76	10/23/05	10/25/05	
Benzo(b)fluoranthene	EPA 625	5J20053	0.25	10	ND	4.76	10/23/05	10/25/05	
Benzo(g,h,i)perylene	EPA 625	5J20053	0.30	25	ND	4.76	10/23/05	10/25/05	
Benzo(k)fluoranthene	EPA 625	5J20053	0.26	2.5	ND	4.76	10/23/05	10/25/05	
Benzyl alcohol	EPA 625	5J20053	1.0	25	ND	4.76	10/23/05	10/25/05	
Bis(2-chloroethoxy)methane	EPA 625	5J20053	0.36	2.5	ND	4.76	10/23/05	10/25/05	
Bis(2-chloroethyl)ether	EPA 625	5J20053	0.42	2.5	ND	4.76	10/23/05	10/25/05	L2
Bis(2-chloroisopropyl)ether	EPA 625	5J20053	0.55	2.5	ND	4.76	10/23/05	10/25/05	
Bis(2-ethylhexyl)phthalate	EPA 625	5J20053	5.5	25	ND	4.76	10/23/05	10/25/05	
4-Bromophenyl phenyl ether	EPA 625	5J20053	0.60	5.0	ND	4.76	10/23/05	10/25/05	
Butyl benzyl phthalate	EPA 625	5J20053	1.7	25	ND 3.4	4.76	10/23/05	10/25/05 U	J, B B
4-Chloroaniline	EPA 625	5J20053	1.0	10	ND	4.76	10/23/05	10/25/05 U	L2
2-Chloronaphthalene	EPA 625	5J20053	0.30	2.5	ND	4.76	10/23/05	10/25/05	
4-Chloro-3-methylphenol	EPA 625	5J20053	1.7	10	ND	4.76	10/23/05	10/25/05	
4-Chlorophenyl phenyl ether	EPA 625	5J20053	0.28	2.5	ND	4.76	10/23/05	10/25/05	
2-Chlorophenol	EPA 625	5J20053	0.60	5.0	ND	4.76	10/23/05	10/25/05	
Chrysene	EPA 625	5J20053	0.36	2.5	ND	4.76	10/23/05	10/25/05	
Dibenz(a,h)anthracene	EPA 625	5J20053	0.42	2.5	ND	4.76	10/23/05	10/25/05 UJ	C
Dibenzofuran	EPA 625	5J20053	0.38	2.5	ND	4.76	10/23/05	10/25/05 U	
Di-n-butyl phthalate	EPA 625	5J20053	1.3	10	ND	4.76	10/23/05	10/25/05	
1,2-Dichlorobenzene	EPA 625	5J20053	0.55	2.5	ND	4.76	10/23/05	10/25/05	
1,3-Dichlorobenzene	EPA 625	5J20053	0.65	2.5	ND	4.76	10/23/05	10/25/05	L2
1,4-Dichlorobenzene	EPA 625	5J20053	0.25	2.5	ND	4.76	10/23/05	10/25/05	L2
3,3-Dichlorobenzidine	EPA 625	5J20053	4.6	25	ND	4.76	10/23/05	10/25/05	
2,4-Dichlorophenol	EPA 625	5J20053	1.0	10	ND	4.76	10/23/05	10/25/05	
Diethyl phthalate	EPA 625	5J20053	0.60	5.0	ND	4.76	10/23/05	10/25/05	
2,4-Dimethylphenol	EPA 625	5J20053	1.6	10	ND	4.76	10/23/05	10/25/05	
Dimethyl phthalate	EPA 625	5J20053	0.40	2.5	ND	4.76	10/23/05	10/25/05	
4,6-Dinitro-2-methylphenol	EPA 625	5J20053	1.9	25	ND	4.76	10/23/05	10/25/05	
2,4-Dinitrophenol	EPA 625	5J20053	14	25	ND	4.76	10/23/05	10/25/05 UJ	C
2,4-Dinitrotoluene	EPA 625	5J20053	1.2	25	ND	4.76	10/23/05	10/25/05 U	
2,6-Dinitrotoluene	EPA 625	5J20053	1.2	25	ND	4.76	10/23/05	10/25/05	
Di-n-octyl phthalate	EPA 625	5J20053	0.85	25	ND	4.76	10/23/05	10/25/05	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5J20053	0.44	5.0	ND	4.76	10/23/05	10/25/05	

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LS 12/06/05

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Santa Susana Mts
Report Number: IOJ1236

Sampled: 10/18/05
Received: 10/18/05

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1236-01 (WL032 - Water) - cont.									Rep Qual / RL-3 Qual Code
Reporting Units: ug/l									
Fluoranthene	EPA 625	5J20053	0.44	2.5	ND	4.76	10/23/05	10/25/05	U
Fluorene	EPA 625	5J20053	0.38	2.5	ND	4.76	10/23/05	10/25/05	↓
Hexachlorobenzene	EPA 625	5J20053	0.65	5.0	ND	4.76	10/23/05	10/25/05	↓
Hexachlorobutadiene	EPA 625	5J20053	1.9	10	ND	4.76	10/23/05	10/25/05	UJ L2 L
Hexachlorocyclopentadiene	EPA 625	5J20053	9.0	25	ND	4.76	10/23/05	10/25/05	U
Hexachloroethane	EPA 625	5J20053	2.6	15	ND	4.76	10/23/05	10/25/05	UJ L2 L
Indeno(1,2,3-cd)pyrene	EPA 625	5J20053	0.95	10	ND	4.76	10/23/05	10/25/05	U
Isophorone	EPA 625	5J20053	0.30	5.0	**0.67**	4.76	10/23/05	10/25/05	J J DW2
2-Methylnaphthalene	EPA 625	5J20053	0.65	5.0	ND	4.76	10/23/05	10/25/05	U
2-Methylphenol	EPA 625	5J20053	1.4	10	ND	4.76	10/23/05	10/25/05	U
4-Methylphenol	EPA 625	5J20053	1.0	25	**2.1**	4.76	10/23/05	10/25/05	J J DW2
Naphthalene	EPA 625	5J20053	0.65	5.0	ND	4.76	10/23/05	10/25/05	U
2-Nitroaniline	EPA 625	5J20053	0.90	25	ND	4.76	10/23/05	10/25/05	↓
3-Nitroaniline	EPA 625	5J20053	1.8	25	ND	4.76	10/23/05	10/25/05	↓
4-Nitroaniline	EPA 625	5J20053	2.4	25	ND	4.76	10/23/05	10/25/05	↓
Nitrobenzene	EPA 625	5J20053	0.50	5.0	ND	4.76	10/23/05	10/25/05	↓
2-Nitrophenol	EPA 625	5J20053	1.2	10	ND	4.76	10/23/05	10/25/05	↓ L2
4-Nitrophenol	EPA 625	5J20053	3.6	25	ND	4.76	10/23/05	10/25/05	UJ C
N-Nitrosodimethylamine	EPA 625	5J20053	1.1	10	ND	4.76	10/23/05	10/25/05	U L2
N-Nitroso-di-n-propylamine	EPA 625	5J20053	0.90	10	ND	4.76	10/23/05	10/25/05	↓
N-Nitrosodiphenylamine	EPA 625	5J20053	0.38	5.0	ND	4.76	10/23/05	10/25/05	↓
Pentachlorophenol	EPA 625	5J20053	3.9	10	ND	4.76	10/23/05	10/25/05	↓
Phenanthrene	EPA 625	5J20053	0.36	2.5	ND	4.76	10/23/05	10/25/05	↓
Phenol	EPA 625	5J20053	0.70	5.0	**4.0**	4.76	10/23/05	10/25/05	J J DW2
Pyrene	EPA 625	5J20053	0.30	2.5	ND	4.76	10/23/05	10/25/05	U
1,2,4-Trichlorobenzene	EPA 625	5J20053	0.50	5.0	ND	4.76	10/23/05	10/25/05	UJ L2 L
2,4,5-Trichlorophenol	EPA 625	5J20053	0.38	10	ND	4.76	10/23/05	10/25/05	U
2,4,6-Trichlorophenol	EPA 625	5J20053	0.50	5.0	ND	4.76	10/23/05	10/25/05	U
Surrogate: 2-Fluorophenol (35-120%)					*56 %*				
Surrogate: Phenol-d6 (45-120%)					*62 %*				
Surrogate: 2,4,6-Tribromophenol (50-125%)					*85 %*				
Surrogate: Nitrobenzene-d5 (45-120%)					*75 %*				
Surrogate: 2-Fluorobiphenyl (45-120%)					*74 %*				
Surrogate: Terphenyl-d14 (45-135%)					*82 %*				

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Wildwood Canyon
Report Number: IOJ1337

Sampled: 10/18/05
Received: 10/19/05

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1337-01 (WL035 - Water)								Rev Qud	RL-4 Qud Bad
Reporting Units: ug/l									
Acenaphthene	EPA 625	5J20053	0.12	0.62	ND	1.25	10/23/05	10/25/05	U
Acenaphthylene	EPA 625	5J20053	0.12	0.62	ND	1.25	10/23/05	10/25/05	
Aniline	EPA 625	5J20053	3.6	12	ND	1.25	10/23/05	10/25/05	
Anthracene	EPA 625	5J20053	0.10	0.62	ND	1.25	10/23/05	10/25/05	
Benzidine	EPA 625	5J20053	3.8	6.2	ND	1.25	10/23/05	10/27/05	R L2 L,S
Benzoic acid	EPA 625	5J20053	4.6	25	ND	1.25	10/23/05	10/25/05	~~R~~ L2 L
Benzo(a)anthracene	EPA 625	5J20053	0.048	6.2	ND	1.25	10/23/05	10/25/05	U
Benzo(a)pyrene	EPA 625	5J20053	0.18	2.5	ND	1.25	10/23/05	10/25/05	
Benzo(b)fluoranthene	EPA 625	5J20053	0.062	2.5	ND	1.25	10/23/05	10/25/05	
Benzo(g,h,i)perylene	EPA 625	5J20053	0.074	6.2	ND	1.25	10/23/05	10/25/05	
Benzo(k)fluoranthene	EPA 625	5J20053	0.066	0.62	ND	1.25	10/23/05	10/25/05	
Benzyl alcohol	EPA 625	5J20053	0.26	6.2	ND	1.25	10/23/05	10/25/05	
Bis(2-chloroethoxy)methane	EPA 625	5J20053	0.090	0.62	ND	1.25	10/23/05	10/25/05	
Bis(2-chloroethyl)ether	EPA 625	5J20053	0.10	0.62	ND	1.25	10/23/05	10/25/05	L2
Bis(2-chloroisopropyl)ether	EPA 625	5J20053	0.14	0.62	ND	1.25	10/23/05	10/25/05	
Bis(2-ethylhexyl)phthalate	EPA 625	5J20053	1.4	6.2	ND	1.25	10/23/05	10/25/05	
4-Bromophenyl phenyl ether	EPA 625	5J20053	0.15	1.2	ND	1.25	10/23/05	10/25/05	
Butyl benzyl phthalate	EPA 625	5J20053	0.42	6.2	ND ~~1.3~~	1.25	10/23/05	10/25/05	U B, J B
4-Chloroaniline	EPA 625	5J20053	0.25	2.5	ND	1.25	10/23/05	10/25/05	U L2
2-Chloronaphthalene	EPA 625	5J20053	0.074	0.62	ND	1.25	10/23/05	10/25/05	
4-Chloro-3-methylphenol	EPA 625	5J20053	0.42	2.5	ND	1.25	10/23/05	10/25/05	
4-Chlorophenyl phenyl ether	EPA 625	5J20053	0.070	0.62	ND	1.25	10/23/05	10/25/05	
2-Chlorophenol	EPA 625	5J20053	0.15	1.2	ND	1.25	10/23/05	10/25/05	
Chrysene	EPA 625	5J20053	0.090	0.62	ND	1.25	10/23/05	10/25/05	
Dibenz(a,h)anthracene	EPA 625	5J20053	0.10	0.62	ND	1.25	10/23/05	10/25/05	UJ C
Dibenzofuran	EPA 625	5J20053	0.094	0.62	ND	1.25	10/23/05	10/25/05	U
Di-n-butyl phthalate	EPA 625	5J20053	0.32	2.5	**0.32**	1.25	10/23/05	10/25/05	J J DNQ
1,2-Dichlorobenzene	EPA 625	5J20053	0.14	0.62	ND	1.25	10/23/05	10/25/05	U
1,3-Dichlorobenzene	EPA 625	5J20053	0.16	0.62	ND	1.25	10/23/05	10/25/05	L2
1,4-Dichlorobenzene	EPA 625	5J20053	0.062	0.62	ND	1.25	10/23/05	10/25/05	L2
3,3-Dichlorobenzidine	EPA 625	5J20053	1.2	6.2	ND	1.25	10/23/05	10/25/05	
2,4-Dichlorophenol	EPA 625	5J20053	0.26	2.5	ND	1.25	10/23/05	10/25/05	
Diethyl phthalate	EPA 625	5J20053	0.15	1.2	**0.20**	1.25	10/23/05	10/25/05	J J DNQ
2,4-Dimethylphenol	EPA 625	5J20053	0.39	2.5	ND	1.25	10/23/05	10/25/05	U
Dimethyl phthalate	EPA 625	5J20053	0.10	0.62	ND	1.25	10/23/05	10/25/05	
4,6-Dinitro-2-methylphenol	EPA 625	5J20053	0.48	6.2	ND	1.25	10/23/05	10/25/05	
2,4-Dinitrophenol	EPA 625	5J20053	3.4	6.2	ND	1.25	10/23/05	10/25/05	UJ C
2,4-Dinitrotoluene	EPA 625	5J20053	0.29	6.2	ND	1.25	10/23/05	10/25/05	U
2,6-Dinitrotoluene	EPA 625	5J20053	0.30	6.2	ND	1.25	10/23/05	10/25/05	
Di-n-octyl phthalate	EPA 625	5J20053	0.21	6.2	ND	1.25	10/23/05	10/25/05	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	5J20053	0.11	1.2	ND	1.25	10/23/05	10/25/05	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Offsite Storm Water Samples Wildwood Canyon Report Number: IOJ1337	Sampled: 10/18/05 Received: 10/19/05

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1337-01 (WL035 - Water) - cont.								Rev Qual	RL-4 Qual code
Reporting Units: ug/l									
Fluoranthene	EPA 625	5J20053	0.11	0.62	ND	1.25	10/23/05	10/25/05 U	
Fluorene	EPA 625	5J20053	0.094	0.62	ND	1.25	10/23/05	10/25/05	
Hexachlorobenzene	EPA 625	5J20053	0.16	1.2	ND	1.25	10/23/05	10/25/05	
Hexachlorobutadiene	EPA 625	5J20053	0.48	2.5	ND	1.25	10/23/05	10/25/05 UJ	L2 L
Hexachlorocyclopentadiene	EPA 625	5J20053	2.2	6.2	ND	1.25	10/23/05	10/25/05 U	
Hexachloroethane	EPA 625	5J20053	0.64	3.8	ND	1.25	10/23/05	10/25/05 UJ	L2 L
Indeno(1,2,3-cd)pyrene	EPA 625	5J20053	0.24	2.5	ND	1.25	10/23/05	10/25/05 U	
Isophorone	EPA 625	5J20053	0.074	1.2	**0.35**	1.25	10/23/05	10/25/05 J	J ONLY
2-Methylnaphthalene	EPA 625	5J20053	0.16	1.2	ND	1.25	10/23/05	10/25/05 U	
2-Methylphenol	EPA 625	5J20053	0.35	2.5	ND	1.25	10/23/05	10/25/05	
4-Methylphenol	EPA 625	5J20053	0.25	6.2	ND	1.25	10/23/05	10/25/05	
Naphthalene	EPA 625	5J20053	0.16	1.2	ND	1.25	10/23/05	10/25/05	
2-Nitroaniline	EPA 625	5J20053	0.22	6.2	ND	1.25	10/23/05	10/25/05	
3-Nitroaniline	EPA 625	5J20053	0.44	6.2	ND	1.25	10/23/05	10/25/05	
4-Nitroaniline	EPA 625	5J20053	0.61	6.2	ND	1.25	10/23/05	10/25/05	
Nitrobenzene	EPA 625	5J20053	0.12	1.2	ND	1.25	10/23/05	10/25/05	
2-Nitrophenol	EPA 625	5J20053	0.29	2.5	ND	1.25	10/23/05	10/25/05	L2
4-Nitrophenol	EPA 625	5J20053	0.91	6.2	ND	1.25	10/23/05	10/25/05 UJ	C
N-Nitrosodimethylamine	EPA 625	5J20053	0.28	2.5	ND	1.25	10/23/05	10/25/05 U	L2
N-Nitroso-di-n-propylamine	EPA 625	5J20053	0.22	2.5	ND	1.25	10/23/05	10/25/05	
N-Nitrosodiphenylamine	EPA 625	5J20053	0.096	1.2	ND	1.25	10/23/05	10/25/05	
Pentachlorophenol	EPA 625	5J20053	0.97	2.5	ND	1.25	10/23/05	10/25/05	
Phenanthrene	EPA 625	5J20053	0.089	0.62	ND	1.25	10/23/05	10/25/05	
Phenol	EPA 625	5J20053	0.18	1.2	ND	1.25	10/23/05	10/25/05	
Pyrene	EPA 625	5J20053	0.074	0.62	ND	1.25	10/23/05	10/25/05	
1,2,4-Trichlorobenzene	EPA 625	5J20053	0.12	1.2	ND	1.25	10/23/05	10/25/05 UJ	L2 L
2,4,5-Trichlorophenol	EPA 625	5J20053	0.094	2.5	ND	1.25	10/23/05	10/25/05 U	
2,4,6-Trichlorophenol	EPA 625	5J20053	0.12	1.2	ND	1.25	10/23/05	10/25/05 U	
Surrogate: 2-Fluorophenol (35-120%)					*62 %*				
Surrogate: Phenol-d6 (45-120%)					*70 %*				
Surrogate: 2,4,6-Tribromophenol (50-125%)					*90 %*				
Surrogate: Nitrobenzene-d5 (45-120%)					*66 %*				
Surrogate: 2-Fluorobiphenyl (45-120%)					*75 %*				
Surrogate: Terphenyl-d14 (45-135%)					*92 %*				

Level IV

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Package ID: T713SV2
Task Order: 313150010
SDG No.: IOJ0411
No. of Analyses: 4

Laboratory: Del Mar Analytical
Reviewer: K. Shadowlight
Analysis/Method: Semivolatiles

Date: December 8, 2005
Reviewer's Signature: K Shadowlight

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	--Initial calibration outliers (%RSD/r^2 values)
GC/MS Tune/Inst. Performance	--Continuing calibration %D outliers
Calibration	--Surrogate recovery outliers
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Sampling

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOJ0411

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Sampling
Contract Task Order #:	313150010
SDG#:	IOJ0411
Project Manager:	P. Costa
Matrix:	Soil/Solid
Analysis:	Semivolatiles
QC Level:	Level IV
No. of Samples:	4
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	December 9, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2), SW-846 Method 8270C* . and the *National Functional Guidelines For Organic Data Review* (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Upstream 001-Ash	WL001	IOJ0411-01	solid	8270C
Upstream 001-Soil	WL002	IOJ0411-02	soil	8270C
Upstream 002	WL004	IOJ0411-04	solid	8270C
Upstream 002	WL005	IOJ0411-05	soil	8270C

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. The analysis did not require preservation, and no preservation was noted in the field. According to the case narrative and sample log in sheet for this SDG, the samples were received intact and on ice. No qualifications were required.

2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. The semivolatile analysis by Method 8270 was not noted on the COC; however, Montgomery Watson personnel requested the samples and analysis in a memo dated 11/05/05. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The soil samples were extracted within 14 days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The DFTPP tunes met the criteria specified in SW-846 Method 8270, and the samples were analyzed within 12 hours of the DFTPP injection times. No qualifications were required.

2.3 CALIBRATION

There was one initial calibration associated with this SDG dated 10/11/05. The average RRFs were ≥0.05 in the initial calibration. The %RSDs were ≤15% or r^2 values were ≥0.995 for the target compounds listed on the sample summary forms, with the exception of the %RSD for pentachlorophenol >15% and the r^2 values < 0.995 for target compounds 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol. Nondetect results for the aforementioned samples were qualified as estimated, "UJ," in the samples of this SDG, unless otherwise rejected, (see section 2.6).

The continuing calibration associated with the samples in this SDG was dated 10/14/05. The RRFs for the target compounds were ≥0.05, and the %Ds were ≤20% with the exception of the %Ds for dibenzo(a,h)anthracene and benzo(g,h,i)perylene. Nondetect results for dibenzo(a,h)anthracene and benzo(g,h,i)perylene were qualified as estimated, "UJ," in the samples of this SDG.

A representative number of average RRFs and %RSDs in the initial calibrations and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

One method blank (5J13053-BLK1) was extracted and analyzed with this SDG. There were no target compounds detected in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (5J13053-BS1) was extracted and analyzed with this SDG. The recoveries were within the laboratory-established QC limits. A representative number of recoveries were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

Surrogate compound 2,4,6-tribromophenol was not recovered in sample WL001 or WL005; therefore, the results for acid target compounds were qualified as estimated, "J," for detects and rejected "R," for nondetects in samples WL001 and WL005. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No further qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy was based on blank spike results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples identified for this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and

±30 seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for semivolatile compounds by method SW-846 Method 8270. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. Samples WL001 and WL005 were each analyzed at a 3× dilution. The results and reporting limits were appropriately adjusted for sample amount, percent moisture, and dilution when applicable. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	RL-1 Qual	RL-1 Qual Code
Sample ID: IOJ0411-01 (WL001 - Solid)											
Reporting Units: ug/kg dry											
Acenaphthene	EPA 8270C	5J13053	230	980	ND	2.96	10/13/05	10/15/05	U		
Acenaphthylene	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05			
Aniline	EPA 8270C	5J13053	510	1200	ND	2.96	10/13/05	10/15/05			
Anthracene	EPA 8270C	5J13053	300	980	ND	2.96	10/13/05	10/15/05			
Benzidine	EPA 8270C	5J13053	360	2000	ND	2.96	10/13/05	10/15/05			
Benzoic acid	EPA 8270C	5J13053	920	2500	ND	2.96	10/13/05	10/15/05	R		S
Benzo(a)anthracene	EPA 8270C	5J13053	290	980	ND	2.96	10/13/05	10/15/05	U		
Benzo(b)fluoranthene	EPA 8270C	5J13053	290	980	ND	2.96	10/13/05	10/15/05			
Benzo(k)fluoranthene	EPA 8270C	5J13053	270	980	ND	2.96	10/13/05	10/15/05			
Benzo(g,h,i)perylene	EPA 8270C	5J13053	420	980	ND	2.96	10/13/05	10/15/05	UJ		C
Benzo(a)pyrene	EPA 8270C	5J13053	240	980	ND	2.96	10/13/05	10/15/05	U		
Benzyl alcohol	EPA 8270C	5J13053	360	980	ND	2.96	10/13/05	10/15/05			
Bis(2-chloroethoxy)methane	EPA 8270C	5J13053	300	980	ND	2.96	10/13/05	10/15/05			
Bis(2-chloroethyl)ether	EPA 8270C	5J13053	390	510	ND	2.96	10/13/05	10/15/05			
Bis(2-chloroisopropyl)ether	EPA 8270C	5J13053	420	980	ND	2.96	10/13/05	10/15/05			
Bis(2-ethylhexyl)phthalate	EPA 8270C	5J13053	290	980	ND	2.96	10/13/05	10/15/05			
4-Bromophenyl phenyl ether	EPA 8270C	5J13053	290	980	ND	2.96	10/13/05	10/15/05			
Butyl benzyl phthalate	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05			
4-Chloroaniline	EPA 8270C	5J13053	420	980	ND	2.96	10/13/05	10/15/05			
2-Chloronaphthalene	EPA 8270C	5J13053	290	980	ND	2.96	10/13/05	10/15/05			
4-Chloro-3-methylphenol	EPA 8270C	5J13053	390	980	ND	2.96	10/13/05	10/15/05	R		S
2-Chlorophenol	EPA 8270C	5J13053	480	980	ND	2.96	10/13/05	10/15/05	R		S
4-Chlorophenyl phenyl ether	EPA 8270C	5J13053	290	980	ND	2.96	10/13/05	10/15/05	U		
Chrysene	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	U		
Dibenz(a,h)anthracene	EPA 8270C	5J13053	420	1200	ND	2.96	10/13/05	10/15/05	UJ		C
Dibenzofuran	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	U		
Di-n-butyl phthalate	EPA 8270C	5J13053	210	980	ND	2.96	10/13/05	10/15/05			
1,3-Dichlorobenzene	EPA 8270C	5J13053	560	980	ND	2.96	10/13/05	10/15/05			
1,4-Dichlorobenzene	EPA 8270C	5J13053	480	980	ND	2.96	10/13/05	10/15/05			
1,2-Dichlorobenzene	EPA 8270C	5J13053	540	980	ND	2.96	10/13/05	10/15/05			
3,3-Dichlorobenzidine	EPA 8270C	5J13053	290	2500	ND	2.96	10/13/05	10/15/05			
2,4-Dichlorophenol	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	R		S
Diethyl phthalate	EPA 8270C	5J13053	270	980	ND	2.96	10/13/05	10/15/05	U		
2,4-Dimethylphenol	EPA 8270C	5J13053	260	980	ND	2.96	10/13/05	10/15/05	R		S
Dimethyl phthalate	EPA 8270C	5J13053	360	980	ND	2.96	10/13/05	10/15/05	U		
4,6-Dinitro-2-methylphenol	EPA 8270C	5J13053	330	1200	ND	2.96	10/13/05	10/15/05	R		S
2,4-Dinitrophenol	EPA 8270C	5J13053	740	2000	ND	2.96	10/13/05	10/15/05	R		S
2,4-Dinitrotoluene	EPA 8270C	5J13053	390	980	ND	2.96	10/13/05	10/15/05	U		
2,6-Dinitrotoluene	EPA 8270C	5J13053	420	980	ND	2.96	10/13/05	10/15/05			
Di-n-octyl phthalate	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05			
Fluoranthene	EPA 8270C	5J13053	300	980	ND	2.96	10/13/05	10/15/05			

Del Mar Analytical, Irvine
Michele Harper
Project Manager

Level IV

KS 12/1/05

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0411-01 (WL001 - Solid) - cont.									RL-1
Reporting Units: ug/kg dry									
Fluorene	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	U
Hexachlorobenzene	EPA 8270C	5J13053	210	980	ND	2.96	10/13/05	10/15/05	
Hexachlorobutadiene	EPA 8270C	5J13053	300	980	ND	2.96	10/13/05	10/15/05	
Hexachlorocyclopentadiene	EPA 8270C	5J13053	510	2500	ND	2.96	10/13/05	10/15/05	
Hexachloroethane	EPA 8270C	5J13053	510	980	ND	2.96	10/13/05	10/15/05	
Indeno(1,2,3-cd)pyrene	EPA 8270C	5J13053	360	980	ND	2.96	10/13/05	10/15/05	
Isophorone	EPA 8270C	5J13053	260	980	ND	2.96	10/13/05	10/15/05	
2-Methylnaphthalene	EPA 8270C	5J13053	290	980	ND	2.96	10/13/05	10/15/05	
2-Methylphenol	EPA 8270C	5J13053	420	980	ND	2.96	10/13/05	10/15/05	R S
4-Methylphenol	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	R S
Naphthalene	EPA 8270C	5J13053	300	980	ND	2.96	10/13/05	10/15/05	U
2-Nitroaniline	EPA 8270C	5J13053	480	980	ND	2.96	10/13/05	10/15/05	
3-Nitroaniline	EPA 8270C	5J13053	390	980	ND	2.96	10/13/05	10/15/05	
4-Nitroaniline	EPA 8270C	5J13053	420	2500	ND	2.96	10/13/05	10/15/05	
Nitrobenzene	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	
2-Nitrophenol	EPA 8270C	5J13053	360	980	ND	2.96	10/13/05	10/15/05	R S
4-Nitrophenol	EPA 8270C	5J13053	450	2500	ND	2.96	10/13/05	10/15/05	R S
N-Nitrosodiphenylamine	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	U
N-Nitroso-di-n-propylamine	EPA 8270C	5J13053	330	740	ND	2.96	10/13/05	10/15/05	U
Pentachlorophenol	EPA 8270C	5J13053	390	2500	ND	2.96	10/13/05	10/15/05	R S
Phenanthrene	EPA 8270C	5J13053	270	980	ND	2.96	10/13/05	10/15/05	U
Phenol	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	R S
Pyrene	EPA 8270C	5J13053	390	980	ND	2.96	10/13/05	10/15/05	U
1,2,4-Trichlorobenzene	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	U
2,4,5-Trichlorophenol	EPA 8270C	5J13053	420	980	ND	2.96	10/13/05	10/15/05	R S
2,4,6-Trichlorophenol	EPA 8270C	5J13053	390	980	ND	2.96	10/13/05	10/15/05	R S
N-Nitrosodimethylamine	EPA 8270C	5J13053	420	980	ND	2.96	10/13/05	10/15/05	U
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	5J13053	330	980	ND	2.96	10/13/05	10/15/05	U
Surrogate: 2-Fluorophenol (25-120%)					*36 %*				
Surrogate: Phenol-d6 (35-120%)					*66 %*				
Surrogate: 2,4,6-Tribromophenol (35-125%)					*				Z
Surrogate: Nitrobenzene-d5 (30-120%)					*68 %*				
Surrogate: 2-Fluorobiphenyl (35-120%)					*67 %*				
Surrogate: Terphenyl-d14 (40-135%)					*62 %*				

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Michele Harper
Project Manager

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Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Rev Qual	Rid Lab
Sample ID: IOJ0411-02 (WL002 - Solid)										
Reporting Units: ug/kg dry										
Acenaphthene	EPA 8270C	5J13053	79	330	ND	0.995	10/13/05	10/15/05	U	
Acenaphthylene	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05		
Aniline	EPA 8270C	5J13053	170	420	ND	0.995	10/13/05	10/15/05		
Anthracene	EPA 8270C	5J13053	100	330	ND	0.995	10/13/05	10/15/05		
Benzidine	EPA 8270C	5J13053	120	660	ND	0.995	10/13/05	10/15/05		
Benzoic acid	EPA 8270C	5J13053	310	830	ND	0.995	10/13/05	10/15/05		
Benzo(a)anthracene	EPA 8270C	5J13053	98	330	ND	0.995	10/13/05	10/15/05		
Benzo(b)fluoranthene	EPA 8270C	5J13053	98	330	ND	0.995	10/13/05	10/15/05		
Benzo(k)fluoranthene	EPA 8270C	5J13053	92	330	ND	0.995	10/13/05	10/15/05		
Benzo(g,h,i)perylene	EPA 8270C	5J13053	140	330	ND	0.995	10/13/05	10/15/05	UJ	C
Benzo(a)pyrene	EPA 8270C	5J13053	81	330	ND	0.995	10/13/05	10/15/05	U	
Benzyl alcohol	EPA 8270C	5J13053	120	330	ND	0.995	10/13/05	10/15/05		
Bis(2-chloroethoxy)methane	EPA 8270C	5J13053	100	330	ND	0.995	10/13/05	10/15/05		
Bis(2-chloroethyl)ether	EPA 8270C	5J13053	130	170	ND	0.995	10/13/05	10/15/05		
Bis(2-chloroisopropyl)ether	EPA 8270C	5J13053	140	330	ND	0.995	10/13/05	10/15/05		
Bis(2-ethylhexyl)phthalate	EPA 8270C	5J13053	98	330	ND	0.995	10/13/05	10/15/05		
4-Bromophenyl phenyl ether	EPA 8270C	5J13053	96	330	ND	0.995	10/13/05	10/15/05		
Butyl benzyl phthalate	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05		
4-Chloroaniline	EPA 8270C	5J13053	140	330	ND	0.995	10/13/05	10/15/05		
2-Chloronaphthalene	EPA 8270C	5J13053	98	330	ND	0.995	10/13/05	10/15/05		
4-Chloro-3-methylphenol	EPA 8270C	5J13053	130	330	ND	0.995	10/13/05	10/15/05		
2-Chlorophenol	EPA 8270C	5J13053	160	330	ND	0.995	10/13/05	10/15/05		
4-Chlorophenyl phenyl ether	EPA 8270C	5J13053	98	330	ND	0.995	10/13/05	10/15/05		
Chrysene	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05		
Dibenz(a,h)anthracene	EPA 8270C	5J13053	140	420	ND	0.995	10/13/05	10/15/05	UJ	C
Dibenzofuran	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05	U	
Di-n-butyl phthalate	EPA 8270C	5J13053	71	330	ND	0.995	10/13/05	10/15/05		
1,3-Dichlorobenzene	EPA 8270C	5J13053	190	330	ND	0.995	10/13/05	10/15/05		
1,4-Dichlorobenzene	EPA 8270C	5J13053	160	330	ND	0.995	10/13/05	10/15/05		
1,2-Dichlorobenzene	EPA 8270C	5J13053	180	330	ND	0.995	10/13/05	10/15/05		
3,3-Dichlorobenzidine	EPA 8270C	5J13053	97	830	ND	0.995	10/13/05	10/15/05		
2,4-Dichlorophenol	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05		
Diethyl phthalate	EPA 8270C	5J13053	90	330	ND	0.995	10/13/05	10/15/05		
2,4-Dimethylphenol	EPA 8270C	5J13053	87	330	ND	0.995	10/13/05	10/15/05		
Dimethyl phthalate	EPA 8270C	5J13053	120	330	ND	0.995	10/13/05	10/15/05		
4,6-Dinitro-2-methylphenol	EPA 8270C	5J13053	110	420	ND	0.995	10/13/05	10/15/05	UJ	C
2,4-Dinitrophenol	EPA 8270C	5J13053	250	660	ND	0.995	10/13/05	10/15/05	UJ	C
2,4-Dinitrotoluene	EPA 8270C	5J13053	130	330	ND	0.995	10/13/05	10/15/05	U	
2,6-Dinitrotoluene	EPA 8270C	5J13053	140	330	ND	0.995	10/13/05	10/15/05		
Di-n-octyl phthalate	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05		
Fluoranthene	EPA 8270C	5J13053	100	330	ND	0.995	10/13/05	10/15/05		

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0411-02 (WL002 - Solid) - cont.									
Reporting Units: ug/kg dry									
Fluorene	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05	
Hexachlorobenzene	EPA 8270C	5J13053	69	330	ND	0.995	10/13/05	10/15/05	
Hexachlorobutadiene	EPA 8270C	5J13053	100	330	ND	0.995	10/13/05	10/15/05	
Hexachlorocyclopentadiene	EPA 8270C	5J13053	170	830	ND	0.995	10/13/05	10/15/05	
Hexachloroethane	EPA 8270C	5J13053	170	330	ND	0.995	10/13/05	10/15/05	
Indeno(1,2,3-cd)pyrene	EPA 8270C	5J13053	120	330	ND	0.995	10/13/05	10/15/05	
Isophorone	EPA 8270C	5J13053	87	330	ND	0.995	10/13/05	10/15/05	
2-Methylnaphthalene	EPA 8270C	5J13053	98	330	ND	0.995	10/13/05	10/15/05	
2-Methylphenol	EPA 8270C	5J13053	140	330	ND	0.995	10/13/05	10/15/05	
4-Methylphenol	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05	
Naphthalene	EPA 8270C	5J13053	100	330	ND	0.995	10/13/05	10/15/05	
2-Nitroaniline	EPA 8270C	5J13053	160	330	ND	0.995	10/13/05	10/15/05	
3-Nitroaniline	EPA 8270C	5J13053	130	330	ND	0.995	10/13/05	10/15/05	
4-Nitroaniline	EPA 8270C	5J13053	140	830	ND	0.995	10/13/05	10/15/05	
Nitrobenzene	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05	
2-Nitrophenol	EPA 8270C	5J13053	120	330	ND	0.995	10/13/05	10/15/05	
4-Nitrophenol	EPA 8270C	5J13053	150	830	ND	0.995	10/13/05	10/15/05	
N-Nitrosodiphenylamine	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05	
N-Nitroso-di-n-propylamine	EPA 8270C	5J13053	110	250	ND	0.995	10/13/05	10/15/05	
Pentachlorophenol	EPA 8270C	5J13053	130	830	ND	0.995	10/13/05	10/15/05	
Phenanthrene	EPA 8270C	5J13053	92	330	ND	0.995	10/13/05	10/15/05	
Phenol	EPA 8270C	5J13053	110	330	**170**	0.995	10/13/05	10/15/05	J
Pyrene	EPA 8270C	5J13053	130	330	ND	0.995	10/13/05	10/15/05	
1,2,4-Trichlorobenzene	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05	
2,4,5-Trichlorophenol	EPA 8270C	5J13053	140	330	ND	0.995	10/13/05	10/15/05	
2,4,6-Trichlorophenol	EPA 8270C	5J13053	130	330	ND	0.995	10/13/05	10/15/05	
N-Nitrosodimethylamine	EPA 8270C	5J13053	140	330	ND	0.995	10/13/05	10/15/05	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	5J13053	110	330	ND	0.995	10/13/05	10/15/05	
Surrogate: 2-Fluorophenol (25-120%)					*55 %*				
Surrogate: Phenol-d6 (35-120%)					*62 %*				
Surrogate: 2,4,6-Tribromophenol (35-125%)					*46 %*				
Surrogate: Nitrobenzene-d5 (30-120%)					*62 %*				
Surrogate: 2-Fluorobiphenyl (35-120%)					*65 %*				
Surrogate: Terphenyl-d14 (40-135%)					*63 %*				

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Rel Lab
Sample ID: IOJ0411-04 (WL004 - Solid)											
Reporting Units: ug/kg dry											
Acenaphthene	EPA 8270C	5J13053	80	340	ND	1	10/13/05	10/15/05	U		
Acenaphthylene	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05			
Aniline	EPA 8270C	5J13053	170	430	ND	1	10/13/05	10/15/05			
Anthracene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05			
Benzidine	EPA 8270C	5J13053	120	670	ND	1	10/13/05	10/15/05			
Benzoic acid	EPA 8270C	5J13053	320	840	ND	1	10/13/05	10/15/05			
Benzo(a)anthracene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05			
Benzo(b)fluoranthene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05			
Benzo(k)fluoranthene	EPA 8270C	5J13053	94	340	ND	1	10/13/05	10/15/05			
Benzo(g,h,i)perylene	EPA 8270C	5J13053	140	340	ND	1	10/13/05	10/15/05	UJ	C	
Benzo(a)pyrene	EPA 8270C	5J13053	82	340	ND	1	10/13/05	10/15/05	U		
Benzyl alcohol	EPA 8270C	5J13053	120	340	**120**	1	10/13/05	10/15/05	J	J	
Bis(2-chloroethoxy)methane	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05	U		
Bis(2-chloroethyl)ether	EPA 8270C	5J13053	130	170	ND	1	10/13/05	10/15/05			
Bis(2-chloroisopropyl)ether	EPA 8270C	5J13053	140	340	ND	1	10/13/05	10/15/05			
Bis(2-ethylhexyl)phthalate	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05			
4-Bromophenyl phenyl ether	EPA 8270C	5J13053	98	340	ND	1	10/13/05	10/15/05			
Butyl benzyl phthalate	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05			
4-Chloroaniline	EPA 8270C	5J13053	140	340	ND	1	10/13/05	10/15/05			
2-Chloronaphthalene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05			
4-Chloro-3-methylphenol	EPA 8270C	5J13053	130	340	ND	1	10/13/05	10/15/05			
2-Chlorophenol	EPA 8270C	5J13053	160	340	ND	1	10/13/05	10/15/05			
4-Chlorophenyl phenyl ether	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05			
Chrysene	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05			
Dibenz(a,h)anthracene	EPA 8270C	5J13053	140	430	ND	1	10/13/05	10/15/05	UJ	C	
Dibenzofuran	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05	U		
Di-n-butyl phthalate	EPA 8270C	5J13053	72	340	ND	1	10/13/05	10/15/05			
1,3-Dichlorobenzene	EPA 8270C	5J13053	190	340	ND	1	10/13/05	10/15/05			
1,4-Dichlorobenzene	EPA 8270C	5J13053	160	340	ND	1	10/13/05	10/15/05			
1,2-Dichlorobenzene	EPA 8270C	5J13053	180	340	ND	1	10/13/05	10/15/05			
3,3-Dichlorobenzidine	EPA 8270C	5J13053	99	840	ND	1	10/13/05	10/15/05			
2,4-Dichlorophenol	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05			
Diethyl phthalate	EPA 8270C	5J13053	92	340	ND	1	10/13/05	10/15/05			
2,4-Dimethylphenol	EPA 8270C	5J13053	89	340	ND	1	10/13/05	10/15/05			
Dimethyl phthalate	EPA 8270C	5J13053	120	340	ND	1	10/13/05	10/15/05			
4,6-Dinitro-2-methylphenol	EPA 8270C	5J13053	110	430	ND	1	10/13/05	10/15/05	UJ	C	
2,4-Dinitrophenol	EPA 8270C	5J13053	250	670	ND	1	10/13/05	10/15/05	UJ	C	
2,4-Dinitrotoluene	EPA 8270C	5J13053	130	340	ND	1	10/13/05	10/15/05	U		
2,6-Dinitrotoluene	EPA 8270C	5J13053	140	340	ND	1	10/13/05	10/15/05			
Di-n-octyl phthalate	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05			
Fluoranthene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05			

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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The Boeing Company-SSFL 5800 Woolsey Canyon Road Canoga Park, CA 91304-1148 Attention: Paul Costa	Project ID: Boeing SSFL-NPDES (ash) TAS# MWH-1111 Report Number: IOJ0411	Sampled: 10/06/05 Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0411-04 (WL004 - Solid) - cont.									
Reporting Units: ug/kg dry									
Fluorene	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05	
Hexachlorobenzene	EPA 8270C	5J13053	70	340	ND	1	10/13/05	10/15/05	
Hexachlorobutadiene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05	
Hexachlorocyclopentadiene	EPA 8270C	5J13053	170	840	ND	1	10/13/05	10/15/05	
Hexachloroethane	EPA 8270C	5J13053	170	340	ND	1	10/13/05	10/15/05	
Indeno(1,2,3-cd)pyrene	EPA 8270C	5J13053	120	340	ND	1	10/13/05	10/15/05	
Isophorone	EPA 8270C	5J13053	89	340	ND	1	10/13/05	10/15/05	
2-Methylnaphthalene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05	
2-Methylphenol	EPA 8270C	5J13053	140	340	ND	1	10/13/05	10/15/05	
4-Methylphenol	EPA 8270C	5J13053	110	340	**290**	1	10/13/05	10/15/05	J
Naphthalene	EPA 8270C	5J13053	100	340	ND	1	10/13/05	10/15/05	
2-Nitroaniline	EPA 8270C	5J13053	160	340	ND	1	10/13/05	10/15/05	
3-Nitroaniline	EPA 8270C	5J13053	130	340	ND	1	10/13/05	10/15/05	
4-Nitroaniline	EPA 8270C	5J13053	140	840	ND	1	10/13/05	10/15/05	
Nitrobenzene	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05	
2-Nitrophenol	EPA 8270C	5J13053	120	340	ND	1	10/13/05	10/15/05	
4-Nitrophenol	EPA 8270C	5J13053	150	840	ND	1	10/13/05	10/15/05	
N-Nitrosodiphenylamine	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05	
N-Nitroso-di-n-propylamine	EPA 8270C	5J13053	110	250	ND	1	10/13/05	10/15/05	
Pentachlorophenol	EPA 8270C	5J13053	130	840	ND	1	10/13/05	10/15/05	
Phenanthrene	EPA 8270C	5J13053	94	340	ND	1	10/13/05	10/15/05	
Phenol	EPA 8270C	5J13053	110	340	**930**	1	10/13/05	10/15/05	
Pyrene	EPA 8270C	5J13053	130	340	ND	1	10/13/05	10/15/05	
1,2,4-Trichlorobenzene	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05	
2,4,5-Trichlorophenol	EPA 8270C	5J13053	140	340	ND	1	10/13/05	10/15/05	
2,4,6-Trichlorophenol	EPA 8270C	5J13053	130	340	ND	1	10/13/05	10/15/05	
N-Nitrosodimethylamine	EPA 8270C	5J13053	140	340	ND	1	10/13/05	10/15/05	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	5J13053	110	340	ND	1	10/13/05	10/15/05	
Surrogate: 2-Fluorophenol (25-120%)					*62 %*				
Surrogate: Phenol-d6 (35-120%)					*71 %*				
Surrogate: 2,4,6-Tribromophenol (35-125%)					*59 %*				
Surrogate: Nitrobenzene-d5 (30-120%)					*68 %*				
Surrogate: 2-Fluorobiphenyl (35-120%)					*69 %*				
Surrogate: Terphenyl-d14 (40-135%)					*70 %*				

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Michele Harper
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The Boeing Company-SSFL 5800 Woolsey Canyon Road Canoga Park, CA 91304-1148 Attention: Paul Costa	Project ID: Boeing SSFL-NPDES (ash) TAS# MWH-1111 Report Number: IOJ0411	Sampled: 10/06/05 Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IOJ0411-05 (WL005 - Solid)									RL-1	
Reporting Units: ug/kg dry									Reject Analyte	
Acenaphthene	EPA 8270C	5J13053	240	990	ND	2.98	10/13/05	10/15/05	U	
Acenaphthylene	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05		
Aniline	EPA 8270C	5J13053	510	1300	ND	2.98	10/13/05	10/15/05		
Anthracene	EPA 8270C	5J13053	300	990	ND	2.98	10/13/05	10/15/05		
Benzidine	EPA 8270C	5J13053	360	2000	ND	2.98	10/13/05	10/15/05		
Benzoic acid	EPA 8270C	5J13053	930	2500	ND	2.98	10/13/05	10/15/05	R	S
Benzo(a)anthracene	EPA 8270C	5J13053	290	990	ND	2.98	10/13/05	10/15/05	U	
Benzo(b)fluoranthene	EPA 8270C	5J13053	290	990	ND	2.98	10/13/05	10/15/05		
Benzo(k)fluoranthene	EPA 8270C	5J13053	280	990	ND	2.98	10/13/05	10/15/05		
Benzo(g,h,i)perylene	EPA 8270C	5J13053	420	990	ND	2.98	10/13/05	10/15/05	UJ	C
Benzo(a)pyrene	EPA 8270C	5J13053	240	990	ND	2.98	10/13/05	10/15/05	U	
Benzyl alcohol	EPA 8270C	5J13053	360	990	ND	2.98	10/13/05	10/15/05		
Bis(2-chloroethoxy)methane	EPA 8270C	5J13053	300	990	ND	2.98	10/13/05	10/15/05		
Bis(2-chloroethyl)ether	EPA 8270C	5J13053	390	510	ND	2.98	10/13/05	10/15/05		
Bis(2-chloroisopropyl)ether	EPA 8270C	5J13053	420	990	ND	2.98	10/13/05	10/15/05		
Bis(2-ethylhexyl)phthalate	EPA 8270C	5J13053	290	990	ND	2.98	10/13/05	10/15/05		
4-Bromophenyl phenyl ether	EPA 8270C	5J13053	290	990	ND	2.98	10/13/05	10/15/05		
Butyl benzyl phthalate	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05		
4-Chloroaniline	EPA 8270C	5J13053	420	990	ND	2.98	10/13/05	10/15/05		
2-Chloronaphthalene	EPA 8270C	5J13053	290	990	ND	2.98	10/13/05	10/15/05	U	
4-Chloro-3-methylphenol	EPA 8270C	5J13053	390	990	ND	2.98	10/13/05	10/15/05	R	S
2-Chlorophenol	EPA 8270C	5J13053	480	990	ND	2.98	10/13/05	10/15/05	R	S
4-Chlorophenyl phenyl ether	EPA 8270C	5J13053	290	990	ND	2.98	10/13/05	10/15/05	U	
Chrysene	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	U	
Dibenz(a,h)anthracene	EPA 8270C	5J13053	420	1300	ND	2.98	10/13/05	10/15/05	UJ	C
Dibenzofuran	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	U	
Di-n-butyl phthalate	EPA 8270C	5J13053	210	990	ND	2.98	10/13/05	10/15/05		
1,3-Dichlorobenzene	EPA 8270C	5J13053	570	990	ND	2.98	10/13/05	10/15/05		
1,4-Dichlorobenzene	EPA 8270C	5J13053	480	990	ND	2.98	10/13/05	10/15/05		
1,2-Dichlorobenzene	EPA 8270C	5J13053	540	990	ND	2.98	10/13/05	10/15/05		
3,3-Dichlorobenzidine	EPA 8270C	5J13053	290	2500	ND	2.98	10/13/05	10/15/05		
2,4-Dichlorophenol	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	R	S
Diethyl phthalate	EPA 8270C	5J13053	270	990	**270**	2.98	10/13/05	10/15/05	J	J
2,4-Dimethylphenol	EPA 8270C	5J13053	260	990	ND	2.98	10/13/05	10/15/05	R	S
Dimethyl phthalate	EPA 8270C	5J13053	360	990	ND	2.98	10/13/05	10/15/05	U	
4,6-Dinitro-2-methylphenol	EPA 8270C	5J13053	330	1300	ND	2.98	10/13/05	10/15/05	R	S
2,4-Dinitrophenol	EPA 8270C	5J13053	750	2000	ND	2.98	10/13/05	10/15/05	R	S
2,4-Dinitrotoluene	EPA 8270C	5J13053	390	990	ND	2.98	10/13/05	10/15/05	U	
2,6-Dinitrotoluene	EPA 8270C	5J13053	420	990	ND	2.98	10/13/05	10/15/05		
Di-n-octyl phthalate	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05		
Fluoranthene	EPA 8270C	5J13053	300	990	ND	2.98	10/13/05	10/15/05		

Del Mar Analytical, Irvine
Michele Harper
Project Manager

Level III

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Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0411-05 (WL005 - Solid) - cont.									RL-1
Reporting Units: ug/kg dry									Required Rel 66
Fluorene	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	U
Hexachlorobenzene	EPA 8270C	5J13053	210	990	ND	2.98	10/13/05	10/15/05	
Hexachlorobutadiene	EPA 8270C	5J13053	300	990	ND	2.98	10/13/05	10/15/05	
Hexachlorocyclopentadiene	EPA 8270C	5J13053	510	2500	ND	2.98	10/13/05	10/15/05	
Hexachloroethane	EPA 8270C	5J13053	510	990	ND	2.98	10/13/05	10/15/05	
Indeno(1,2,3-cd)pyrene	EPA 8270C	5J13053	360	990	ND	2.98	10/13/05	10/15/05	
Isophorone	EPA 8270C	5J13053	260	990	ND	2.98	10/13/05	10/15/05	
2-Methylnaphthalene	EPA 8270C	5J13053	290	990	ND	2.98	10/13/05	10/15/05	
2-Methylphenol	EPA 8270C	5J13053	420	990	ND	2.98	10/13/05	10/15/05	R S
4-Methylphenol	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	R S
Naphthalene	EPA 8270C	5J13053	300	990	ND	2.98	10/13/05	10/15/05	U
2-Nitroaniline	EPA 8270C	5J13053	480	990	ND	2.98	10/13/05	10/15/05	
3-Nitroaniline	EPA 8270C	5J13053	390	990	ND	2.98	10/13/05	10/15/05	
4-Nitroaniline	EPA 8270C	5J13053	420	2500	ND	2.98	10/13/05	10/15/05	
Nitrobenzene	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	
2-Nitrophenol	EPA 8270C	5J13053	360	990	ND	2.98	10/13/05	10/15/05	R S
4-Nitrophenol	EPA 8270C	5J13053	450	2500	ND	2.98	10/13/05	10/15/05	R S
N-Nitrosodiphenylamine	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	U
N-Nitroso-di-n-propylamine	EPA 8270C	5J13053	330	750	ND	2.98	10/13/05	10/15/05	U
Pentachlorophenol	EPA 8270C	5J13053	390	2500	ND	2.98	10/13/05	10/15/05	R S
Phenanthrene	EPA 8270C	5J13053	280	990	ND	2.98	10/13/05	10/15/05	U
Phenol	EPA 8270C	5J13053	330	990	**580**	2.98	10/13/05	10/15/05	J IS
Pyrene	EPA 8270C	5J13053	390	990	ND	2.98	10/13/05	10/15/05	U
1,2,4-Trichlorobenzene	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	U
2,4,5-Trichlorophenol	EPA 8270C	5J13053	420	990	ND	2.98	10/13/05	10/15/05	R S
2,4,6-Trichlorophenol	EPA 8270C	5J13053	390	990	ND	2.98	10/13/05	10/15/05	R S
N-Nitrosodimethylamine	EPA 8270C	5J13053	420	990	ND	2.98	10/13/05	10/15/05	U
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	5J13053	330	990	ND	2.98	10/13/05	10/15/05	U
Surrogate: 2-Fluorophenol (25-120%)					*44 %*				
Surrogate: Phenol-d6 (35-120%)					*56 %*				
Surrogate: 2,4,6-Tribromophenol (35-125%)					*				Z
Surrogate: Nitrobenzene-d5 (30-120%)					*57 %*				
Surrogate: 2-Fluorobiphenyl (35-120%)					*59 %*				
Surrogate: Terphenyl-d14 (40-135%)					*66 %*				

Del Mar Analytical, Irvine
Michele Harper
Project Manager

Level III

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Package ID T713PA4
Task Order 313150010
SDG No. IOJ0739
No. of Analyses 9

Laboratory Calscience Environmental Laboratories, Inc.
Reviewer K. Shadowlight
Analysis/Method PAHs by Method 8270/SIM

Date: December 8, 2005
Reviewer's Signature K Shadowlight

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for continuing calibration %D outliers
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Sampling

ANALYSIS: SEMIVOLATILES (PAHs)

SAMPLE DELIVERY GROUP: IOJ0739

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Sampling
Contract Task Order #:	313150010
SDG#:	IOJ0739
Project Manager:	P. Costa
Matrix:	Soil/Solid
Analysis:	Semivolatiles (PAHs)
QC Level:	Level IV
No. of Samples:	9
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	December 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2), SW-846 Method 8270C* , and the *National Functional Guidelines For Organic Data Review* (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
CF-1-Soil	WL008	IOJ0739-01	soil	8270C/SIM
CF-1-Ash	WL009	IOJ0739-02	solid	8270C/SIM
PCC-1-Soil	WL010	IOJ0739-03	soil	8270C/SIM
PCC-1-Ash	WL011	IOJ0739-04	solid	8270C/SIM
WC-1 Ash	WL014	IOJ0739-05	solid	8270C/SIM
WC-1-Soil	WL015	IOJ0739-06	soil	8270C/SIM
CRP-1-Soil	WL007	IOJ0739-07	soil	8270C/SIM
SC-1-Soil	WL012	IOJ0739-08	soil	8270C/SIM
SC-1-Ash	WL013	IOJ0739-09	solid	8270C/SIM

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The polyaromatic hydrocarbon analysis by 8270/SIM was subcontracted to Calscience Environmental Laboratories, Inc. The samples were received at both laboratories within the temperature limits of 4°C ±2°C, intact, and in good condition. The analysis did not require preservation, and no preservation was noted in the field. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were signed and dated by the appropriate field and laboratory personnel. The samples in this SDG were originally on "HOLD" status; however, the samples and analysis were requested for this SDG in memos from Montgomery Watson dated 10/12/05, 10/17/05, and 10/18/05. Custody seals were not present on the coolers or samples at either laboratory; however, as the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The soil/solid samples were extracted within 14 days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

Tune criteria is not required for Single Ion Monitoring (SIM) analysis. No qualifications were required.

2.3 CALIBRATION

There was one initial calibration associated with this SDG dated 10/18/05. The average RRFs were ≥0.05 and the %RSDs were ≤15% in the initial calibration. An ICV was analyzed immediately following the initial calibration and the RRFs were ≥0.05 and %Ds were ≤20% for all target compounds. There were three continuing calibrations associated with the samples in this SDG dated 10/18/05, 10/19/05 (16:35), and 10/20/05. All RRFs were ≥0.05. The %D for benzo(g,h,i)perylene exceeded 20% in the continuing calibration dated 10/18/05. Nondetects for benzo(g,h,i)perylene were qualified as estimated, "UJ," in samples WL009, WL010, and WL011. The %Ds for pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene exceeded 20% in the continuing calibration dated 10/19/05; therefore, the results for the aforementioned target compounds were qualified as estimated "J," for detects and "UJ," for nondetects in sample WL008. The %Ds for the remaining target compounds were ≤20% in all calibrations.

A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

Two method blanks (051013L10-MB and 051019L09-MB) were extracted and analyzed with this SDG. There were no target compounds detected in either of the method blanks. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two laboratory control sample/laboratory control sample duplicate pairs (051013L10-LCS/LCSD and 051019L09-LCS/LCSD) were extracted and analyzed with this SDG. The recoveries and RPDs for spiked target compounds acenaphthene and pyrene were within the laboratory QC limits for both pairs. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The recovery of p-terphenyl-d14 exceeded QC limits in sample WL015; however, one base neutral recovery above 10% is permitted. The base-neutral surrogate recoveries were within the laboratory QC limits for the remaining samples in this SDG. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed for sample WL010 in this SDG. The recoveries and RPDs for spiked target compounds acenaphthene and pyrene were within the laboratory QC limits for the MS/MSD pair. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples identified for this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ±30 seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for 18 polyaromatic hydrocarbons target compounds by SW-846 Method 8270/SIM. Review of the sample chromatograms and retention times indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The results and reporting limits were appropriately adjusted for sample amount and percent moisture. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. The results were reported in ppm (mg/kg). No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not reported for SIM analysis. No qualifications were required.

2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 10/13/05
Work Order No: 05-10-0747
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IOJ0739

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-01	05-10-0747-1	10/07/05	Solid	10/13/05	10/19/05	051013L10

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.28	0.02	0.0042	1.13		Benzo (a) Anthracene	ND	0.023	0.0029	1.13	U
2-Methylnaphthalene	0.064	0.023	0.0027	1.13		Chrysene	ND	0.023	0.0053	1.13	
Acenaphthylene	ND	0.023	0.0027	1.13	U	Benzo (k) Fluoranthene	ND	0.023	0.0051	1.13	
Acenaphthene	ND	0.023	0.0056	1.13	U	Benzo (b) Fluoranthene	ND	0.023	0.0016	1.13	
Fluorene	0.0092	0.023	0.0034	1.13	J	Benzo (a) Pyrene	ND	0.023	0.0022	1.13	
Phenanthrene	0.032	0.023	0.0043	1.13		Benzo (g,h,i) Perylene	ND	0.023	0.0037	1.13	UJ C
Anthracene	ND	0.023	0.0070	1.13	U	Indeno (1,2,3-c,d) Pyrene	ND	0.023	0.0039	1.13	U
Fluoranthene	ND	0.023	0.0022	1.13	U	Dibenz (a,h) Anthracene	ND	0.023	0.0030	1.13	UJ C
Pyrene	0.012	0.023	0.0037	1.13	J	1-Methylnaphthalene	0.055	0.023	0.0048	1.13	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	89	28-139		2-Fluorobiphenyl	78	33-144	
p-Terphenyl-d14	99	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-02	05-10-0747-2	10/07/05	Solid	10/13/05	10/18/05	051013L10

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.13	0.02	0.0038	1.02		Benzo (a) Anthracene	ND	0.020	0.0027	1.02	U
2-Methylnaphthalene	0.017	0.02	0.0024	1.02	J	Chrysene	0.022	0.02	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0024	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	U
Acenaphthene	0.11	0.02	0.0051	1.02		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	ND	0.020	0.0031	1.02	U	Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	0.11	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	UJ C
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	U
Fluoranthene	0.022	0.02	0.0020	1.02		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.02	U
Pyrene	0.019	0.02	0.0033	1.02	J	1-Methylnaphthalene	0.012	0.02	0.0044	1.02	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	111	28-139		2-Fluorobiphenyl	130	33-144	
p-Terphenyl-d14	116	23-160					

Level IV

10/12/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 10/13/05
Work Order No: 05-10-0747
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IOJ0739

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-03	05-10-0747-3	10/07/05	Solid	10/13/05	10/18/05	051013L10

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.071	0.02	0.0037	1.01		Benzo (a) Anthracene	ND	0.020	0.0026	1.01	U
2-Methylnaphthalene	0.025	0.02	0.0024	1.01		Chrysene	ND	0.020	0.0048	1.01	
Acenaphthylene	ND	0.020	0.0024	1.01	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	1.01	
Acenaphthene	ND	0.020	0.0051	1.01		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.01	
Fluorene	ND	0.020	0.0031	1.01		Benzo (a) Pyrene	ND	0.020	0.0020	1.01	
Phenanthrene	0.026	0.02	0.0038	1.01		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.01	UJ C
Anthracene	ND	0.020	0.0063	1.01	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.01	U
Fluoranthene	ND	0.020	0.0020	1.01		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	U
Pyrene	ND	0.020	0.0033	1.01		1-Methylnaphthalene	0.019	0.02	0.0043	1.01	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	128	28-139		2-Fluorobiphenyl	126	33-144	
p-Terphenyl-d14	137	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-04	05-10-0747-4	10/07/05	Solid	10/13/05	10/18/05	051013L10

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.26	0.02	0.0037	0.99		Benzo (a) Anthracene	ND	0.020	0.0026	0.99	U
2-Methylnaphthalene	0.026	0.02	0.0024	0.99		Chrysene	0.0082	0.02	0.0047	0.99	J
Acenaphthylene	ND	0.020	0.0024	0.99	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	0.99	U
Acenaphthene	ND	0.020	0.0050	0.99		Benzo (b) Fluoranthene	ND	0.020	0.0014	0.99	
Fluorene	ND	0.020	0.0030	0.99		Benzo (a) Pyrene	ND	0.020	0.0020	0.99	
Phenanthrene	0.033	0.02	0.0038	0.99		Benzo (g,h,i) Perylene	ND	0.020	0.0032	0.99	UJ C
Anthracene	ND	0.020	0.0061	0.99	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0034	0.99	U
Fluoranthene	ND	0.020	0.0019	0.99		Dibenz (a,h) Anthracene	ND	0.020	0.0027	0.99	U
Pyrene	ND	0.020	0.0032	0.99		1-Methylnaphthalene	0.019	0.02	0.0042	0.99	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	109	28-139		2-Fluorobiphenyl	110	33-144	
p-Terphenyl-d14	107	23-160					

Level III

12/8/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical		Date Received:	10/20/05
17461 Derian Avenue, Suite 100		Work Order No:	05-10-1149
Irvine, CA 92614-5845		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: IOJ0739			Page 1 of 2

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-07	05-10-1149-1	10/07/05	Solid	10/20/05	10/20/05	051019L09

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Raw Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.27	0.02	0.0037	1.01		Benzo (a) Anthracene	ND	0.020	0.0026	1.01	U
2-Methylnaphthalene	0.033	0.02	0.0024	1.01		Chrysene	ND	0.020	0.0048	1.01	
Acenaphthylene	ND	0.020	0.0024	1.01	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	1.01	
Acenaphthene	ND	0.020	0.0051	1.01		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.01	
Fluorene	ND	0.020	0.0031	1.01		Benzo (a) Pyrene	ND	0.020	0.0020	1.01	
Phenanthrene	0.050	0.02	0.0038	1.01		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.01	
Anthracene	ND	0.020	0.0063	1.01	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.01	
Fluoranthene	0.010	0.02	0.0020	1.01	J	Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	
Pyrene	0.0096	0.02	0.0033	1.01	J	1-Methylnaphthalene	0.025	0.02	0.0043	1.01	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	113	28-139		2-Fluorobiphenyl	110	33-144	
p-Terphenyl-d14	123	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-08	05-10-1149-2	10/10/05	Solid	10/20/05	10/20/05	051019L09

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Raw Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.034	0.02	0.0037	1		Benzo (a) Anthracene	ND	0.020	0.0026	1	U
2-Methylnaphthalene	0.0096	0.02	0.0024	1	J	Chrysene	ND	0.020	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	1	
Acenaphthene	ND	0.020	0.0050	1		Benzo (b) Fluoranthene	ND	0.020	0.0014	1	
Fluorene	ND	0.020	0.0031	1		Benzo (a) Pyrene	ND	0.020	0.0020	1	
Phenanthrene	0.021	0.02	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	
Anthracene	ND	0.020	0.0062	1	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	
Fluoranthene	0.0082	0.02	0.0019	1	J	Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	
Pyrene	ND	0.020	0.0033	1	U	1-Methylnaphthalene	ND	0.020	0.0043	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	106	28-139		2-Fluorobiphenyl	99	33-144	
p-Terphenyl-d14	131	23-160					

Level IV

LS 12/8/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 10/20/05
Work Order No: 05-10-1149
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IOJ0739

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-09	05-10-1149-3	10/10/05	Solid	10/20/05	10/20/05	051019L09

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.25	0.02	0.0037	1.01		Benzo (a) Anthracene	ND	0.020	0.0026	1.01	
2-Methylnaphthalene	0.031	0.02	0.0024	1.01		Chrysene	ND	0.020	0.0048	1.01	
Acenaphthylene	ND	0.020	0.0024	1.01		Benzo (k) Fluoranthene	ND	0.020	0.0045	1.01	
Acenaphthene	ND	0.020	0.0051	1.01		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.01	
Fluorene	ND	0.020	0.0031	1.01		Benzo (a) Pyrene	ND	0.020	0.0020	1.01	
Phenanthrene	0.057	0.02	0.0038	1.01		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.01	
Anthracene	ND	0.020	0.0063	1.01		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.01	
Fluoranthene	0.012	0.02	0.0020	1.01	J	Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	
Pyrene	0.0099	0.02	0.0033	1.01	J	1-Methylnaphthalene	0.023	0.02	0.0043	1.01	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	79	28-139		2-Fluorobiphenyl	93	33-144	
p-Terphenyl-d14	121	23-160					

Method Blank	099-06-010-61	N/A	Solid	10/19/05	10/19/05	051019L09

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0037	1	*	Benzo (a) Anthracene	ND	0.020	0.0026	1	*
2-Methylnaphthalene	ND	0.020	0.0024	1		Chrysene	ND	0.020	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1		Benzo (k) Fluoranthene	ND	0.020	0.0045	1	
Acenaphthene	ND	0.020	0.0050	1		Benzo (b) Fluoranthene	ND	0.020	0.0014	1	
Fluorene	ND	0.020	0.0031	1		Benzo (a) Pyrene	ND	0.020	0.0020	1	
Phenanthrene	ND	0.020	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	
Anthracene	ND	0.020	0.0062	1		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	
Fluoranthene	ND	0.020	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	
Pyrene	ND	0.020	0.0033	1		1-Methylnaphthalene	ND	0.020	0.0043	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	88	28-139		2-Fluorobiphenyl	89	33-144	
p-Terphenyl-d14	133	23-160					

* analysis not validated

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 10/19/05
Work Order No: 05-10-1065
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IOJ0739

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-05 W Lois	05-10-1065-1	10/10/05	Solid	10/19/05	10/20/05	051019L09

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.39	0.02	0.0037	1.01		Benzo (a) Anthracene	ND	0.020	0.0026	1.01	U
2-Methylnaphthalene	0.11	0.02	0.0024	1.01		Chrysene	0.010	0.02	0.0048	1.01	J
Acenaphthylene	0.010	0.02	0.0024	1.01	J	Benzo (k) Fluoranthene	ND	0.020	0.0045	1.01	U
Acenaphthene	0.022	0.02	0.0051	1.01		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.01	
Fluorene	0.016	0.02	0.0031	1.01	J	Benzo (a) Pyrene	ND	0.020	0.0020	1.01	
Phenanthrene	0.24	0.02	0.0038	1.01		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.01	
Anthracene	0.022	0.02	0.0063	1.01		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.01	
Fluoranthene	0.072	0.02	0.0020	1.01		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	
Pyrene	0.039	0.02	0.0033	1.01		1-Methylnaphthalene	0.075	0.02	0.0043	1.01	

Surrogates	REC (%)	Control Limits	Qual	Surrogates	REC (%)	Control Limits	Qual
Nitrobenzene-d5	128	28-139		2-Fluorobiphenyl	114	33-144	
p-Terphenyl-d14	103	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0739-06 W Lois	05-10-1065-2	10/10/05	Solid	10/19/05	10/20/05	051019L09

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.17	0.02	0.0037	1.01		Benzo (a) Anthracene	ND	0.020	0.0026	1.01	U
2-Methylnaphthalene	0.054	0.02	0.0024	1.01		Chrysene	ND	0.020	0.0048	1.01	
Acenaphthylene	ND	0.020	0.0024	1.01	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	1.01	
Acenaphthene	ND	0.020	0.0051	1.01	U	Benzo (b) Fluoranthene	ND	0.020	0.0014	1.01	
Fluorene	0.0097	0.02	0.0031	1.01	J	Benzo (a) Pyrene	ND	0.020	0.0020	1.01	
Phenanthrene	0.056	0.02	0.0038	1.01		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.01	
Anthracene	ND	0.020	0.0063	1.01	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.01	
Fluoranthene	0.017	0.02	0.0020	1.01	J	Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	
Pyrene	0.015	0.02	0.0033	1.01	J	1-Methylnaphthalene	0.040	0.02	0.0043	1.01	

Surrogates	REC (%)	Control Limits	Qual	Surrogates	REC (%)	Control Limits	Qual
Nitrobenzene-d5	118	28-139		2-Fluorobiphenyl	99	33-144	
p-Terphenyl-d14	210	23-160	2				

KS 12/8/05

Level IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Laboratory Calscience Environmental Laboratories, Inc.
Reviewer K. Shadowlight
Analysis/Method PAHs by Method 8270/SIM

Package ID T713PA2
Task Order 313150010
SDG No. IOJ1120, IOJ1122
No. of Analyses 7

Date: December 8, 2005

Reviewer's Signature K Shadowlight

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for continuing calibration %D outliers
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Sampling

ANALYSIS: SEMIVOLATILES (PAHs)

SAMPLE DELIVERY GROUPS: IOJ1120, IOJ1122

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Sampling
Contract Task Order #:	313150010
SDG#:	IOJ1120, IOJ1122
Project Manager:	P. Costa
Matrix:	Soil/Solid
Analysis:	Semivolatiles (PAHs)
QC Level:	Level IV
No. of Samples:	7
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	December 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2), SW-846 Method 8270C* , and the *National Functional Guidelines For Organic Data Review* (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
SSM-1-Soil	WL022	IOJ1120-01	soil	8270C/SIM
SSM-1-Ash	WL023	IOJ1120-02	solid	8270C/SIM
BCSS09S01	WL024	IOJ1122-01	solid	8270C/SIM
BCSS09S01	WL025	IOJ1122-02	soil	8270C/SIM
BZSS05S01	WL026	IOJ1122-03	soil	8270C/SIM
BZSS06S01	WL027	IOJ1122-04	soil	8270C/SIM
BZSS05S01	WL028	IOJ1122-05	solid	8270C/SIM

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The samples in these SDGs were received at Del Mar Analytical above the temperature limits of 4°C ±2°C, at 15°C; however, as the samples were directly couriered from the field to the laboratory there was insufficient time for the samples to cool. The polyaromatic hydrocarbon analysis by 8270/SIM was subcontracted to Calscience Environmental Laboratories, Inc. The samples were received at Calscience within the temperature limits of 4°C ±2°C, intact, and in good condition. The analysis did not require preservation, and no preservation was noted in the field. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were signed and dated by the appropriate field and laboratory personnel. In a memo from Montgomery Watson dated 11/02/05, the prefix of the Client ID was changed from SMM to SSM for samples WL022 and WL023. Custody seals were not present on the coolers or samples at either laboratory; however, as the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The soil/solid samples were extracted within 14 days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

Tune criteria is not required for Single Ion Monitoring (SIM) analysis. No qualifications were required.

2.3 CALIBRATION

There was one initial calibration associated with these SDGs dated 10/18/05. The average RRFs were ≥0.05 and the %RSDs were ≤15% in the initial calibration. An ICV was analyzed immediately following the initial calibration and the RRFs were ≥0.05 and %Ds were ≤20% for all target compounds. There were two continuing calibrations associated with the samples in these SDGs dated 10/20/05 and 10/24/05. All RRFs were ≥0.05. The %Ds for benzo(b) fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene exceeded 20% in the continuing calibration dated 10/24/05; therefore, the results for the aforementioned target compounds were qualified as estimated "J," for detects and "UJ," for nondetects in sample WL028. The %Ds for the remaining target compounds were ≤20% in both calibrations.

A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

One method blank (051019L09-MB) was extracted and analyzed with these SDGs. There were no target compounds detected in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One laboratory control sample/laboratory control sample duplicate pair (051019L09-LCS/LCSD) were extracted and analyzed with these SDGs. The recoveries and RPDs for spiked target compounds acenaphthene and pyrene were within the laboratory QC limits for the pair. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The base-neutral surrogate recoveries were within the laboratory QC limits for the samples in these SDGs. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for these SDGs. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples identified for these SDGs. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples identified for these SDGs.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and

±30 seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for 18 polyaromatic hydrocarbons target compounds by SW-846 Method 8270/SIM. Review of the sample chromatograms and retention times indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The results and reporting limits were appropriately adjusted for sample amount and percent moisture. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. The results were reported in ppm (mg/kg). No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not reported for SIM analysis. No qualifications were required.

2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/19/05
Work Order No:	05-10-1066
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ1120

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1120-01	05-10-1066-1	10/13/05	Solid	10/19/05	10/20/05	051019L09

WLO22

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.10	0.02	0.0038	1.04		Benzo (a) Anthracene	ND	0.021	0.0027	1.04	U
2-Methylnaphthalene	0.031	0.021	0.0025	1.04		Chrysene	ND	0.021	0.0049	1.04	
Acenaphthylene	ND	0.021	0.0025	1.04	U	Benzo (k) Fluoranthene	ND	0.021	0.0047	1.04	
Acenaphthene	ND	0.021	0.0052	1.04	U	Benzo (b) Fluoranthene	ND	0.021	0.0015	1.04	
Fluorene	0.0090	0.021	0.0032	1.04	J	Benzo (a) Pyrene	ND	0.021	0.0020	1.04	
Phenanthrene	0.039	0.021	0.0039	1.04		Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.04	
Anthracene	ND	0.021	0.0064	1.04	U	Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.04	
Fluoranthene	0.013	0.021	0.0020	1.04	J	Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.04	
Pyrene	0.017	0.021	0.0034	1.04	J	1-Methylnaphthalene	0.024	0.021	0.0044	1.04	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	138	28-139		2-Fluorobiphenyl	110	33-144	
p-Terphenyl-d14	160	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1120-02	05-10-1066-2	10/13/05	Solid	10/19/05	10/20/05	051019L09

WLO23

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.58	0.02	0.0039	1.04		Benzo (a) Anthracene	ND	0.021	0.0027	1.04	U
2-Methylnaphthalene	0.030	0.021	0.0025	1.04		Chrysene	0.034	0.021	0.0049	1.04	
Acenaphthylene	ND	0.021	0.0025	1.04	U	Benzo (k) Fluoranthene	ND	0.021	0.0047	1.04	U
Acenaphthene	ND	0.021	0.0052	1.04		Benzo (b) Fluoranthene	ND	0.021	0.0015	1.04	
Fluorene	ND	0.021	0.0032	1.04		Benzo (a) Pyrene	ND	0.021	0.0021	1.04	
Phenanthrene	0.22	0.02	0.0040	1.04		Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.04	
Anthracene	ND	0.021	0.0064	1.04	U	Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.04	
Fluoranthene	0.032	0.021	0.0020	1.04		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.04	
Pyrene	0.014	0.021	0.0034	1.04	J	1-Methylnaphthalene	0.021	0.021	0.0045	1.04	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	119	28-139		2-Fluorobiphenyl	107	33-144	
p-Terphenyl-d14	154	23-160					

Level IV

LS 12/8/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/19/05
Work Order No:	05-10-1067
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ1122

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-01	05-10-1067-1	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL024

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.93	0.02	0.0038	1.03		Benzo (a) Anthracene	0.016	0.021	0.0027	1.03	J
2-Methylnaphthalene	0.14	0.02	0.0025	1.03		Chrysene	0.10	0.02	0.0049	1.03	
Acenaphthylene	0.013	0.021	0.0025	1.03	J	Benzo (k) Fluoranthene	ND	0.021	0.0046	1.03	U
Acenaphthene	ND	0.021	0.0052	1.03	U	Benzo (b) Fluoranthene	0.025	0.021	0.0014	1.03	
Fluorene	0.011	0.021	0.0031	1.03	J	Benzo (a) Pyrene	0.030	0.021	0.0020	1.03	
Phenanthrene	0.24	0.02	0.0039	1.03		Benzo (g,h,i) Perylene	0.012	0.021	0.0034	1.03	J
Anthracene	0.022	0.021	0.0064	1.03		Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.03	U
Fluoranthene	0.057	0.021	0.0020	1.03		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.03	U
Pyrene	0.053	0.021	0.0034	1.03		1-Methylnaphthalene	0.094	0.021	0.0044	1.03	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	132	28-139		2-Fluorobiphenyl	107	33-144	
p-Terphenyl-d14	136	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-02	05-10-1067-2	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL025

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.070	0.02	0.0038	1.02		Benzo (a) Anthracene	ND	0.020	0.0027	1.02	U
2-Methylnaphthalene	0.022	0.02	0.0024	1.02		Chrysene	ND	0.020	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	ND	0.020	0.0031	1.02		Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	0.021	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	
Fluoranthene	ND	0.020	0.0020	1.02		Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	
Pyrene	ND	0.020	0.0033	1.02		1-Methylnaphthalene	0.017	0.02	0.0044	1.02	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	138	28-139		2-Fluorobiphenyl	119	33-144	
p-Terphenyl-d14	136	23-160					

Level III

WS 12/8/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/19/05
Work Order No:	05-10-1067
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ1122

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-03	05-10-1067-3	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL026

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual Code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.031	0.02	0.0038	1.02		Benzo (a) Anthracene	ND	0.020	0.0027	1.02	U
2-Methylnaphthalene	0.015	0.02	0.0024	1.02	J	Chrysene	ND	0.020	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	
Acenaphthene	ND	0.020	0.0051	1.02	U	Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	0.0083	0.02	0.0031	1.02	J	Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	0.021	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	
Fluoranthene	0.0083	0.02	0.0020	1.02	J	Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	
Pyrene	0.010	0.02	0.0033	1.02	J	1-Methylnaphthalene	0.011	0.02	0.0044	1.02	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	132	28-139		2-Fluorobiphenyl	98	33-144	
p-Terphenyl-d14	125	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-04	05-10-1067-4	10/14/05	Solid	10/19/05	10/20/05	051019L09

WL027

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual Code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual Code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.011	0.021	0.0039	1.04	J	Benzo (a) Anthracene	ND	0.021	0.0027	1.04	U
2-Methylnaphthalene	ND	0.021	0.0025	1.04	U	Chrysene	ND	0.021	0.0049	1.04	
Acenaphthylene	ND	0.021	0.0025	1.04		Benzo (k) Fluoranthene	ND	0.021	0.0047	1.04	
Acenaphthene	ND	0.021	0.0052	1.04		Benzo (b) Fluoranthene	ND	0.021	0.0015	1.04	
Fluorene	ND	0.021	0.0032	1.04		Benzo (a) Pyrene	ND	0.021	0.0021	1.04	
Phenanthrene	0.011	0.021	0.0040	1.04	J	Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.04	
Anthracene	ND	0.021	0.0064	1.04	U	Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.04	
Fluoranthene	ND	0.021	0.0020	1.04		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.04	
Pyrene	ND	0.021	0.0034	1.04		1-Methylnaphthalene	ND	0.021	0.0045	1.04	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	108	28-139		2-Fluorobiphenyl	103	33-144	
p-Terphenyl-d14	156	23-160					

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical		Date Received:	10/19/05
17461 Derian Avenue, Suite 100		Work Order No:	05-10-1067
Irvine, CA 92614-5845		Preparation:	EPA 3545
		Method:	EPA 8270C SIM PAHs
		Units:	mg/kg
Project: IOJ1122			Page 3 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ1122-05	05-10-1067-3	10/14/05	Solid	10/19/05	10/24/05	051019L09

WL028

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Rev Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.48	0.02	0.0038	1.02		Benzo (a) Anthracene	0.019	0.02	0.0027	1.02	J J
2-Methylnaphthalene	0.045	0.02	0.0024	1.02		Chrysene	0.18	0.02	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02	U	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	UJ C
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	0.046	0.02	0.0014	1.02	J C
Fluorene	ND	0.020	0.0031	1.02		Benzo (a) Pyrene	0.070	0.02	0.0020	1.02	
Phenanthrene	0.15	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	0.025	0.02	0.0033	1.02	J C
Anthracene	ND	0.020	0.0063	1.02	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	U
Fluoranthene	0.059	0.02	0.0020	1.02		Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	UJ C
Pyrene	0.056	0.02	0.0033	1.02		1-Methylnaphthalene	0.031	0.02	0.0044	1.02	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	107	28-139		2-Fluorobiphenyl	87	33-144	
p-Terphenyl-d14	126	23-160					

Method Blank	099-06-010-[illegible]	N/A	Solid	10/19/05	10/19/05	051019L09

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0037	* 1		Benzo (a) Anthracene	ND	0.020	0.0026	* 1	
2-Methylnaphthalene	ND	0.020	0.0024	1		Chrysene	ND	0.020	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1		Benzo (k) Fluoranthene	ND	0.020	0.0045	1	
Acenaphthene	ND	0.020	0.0050	1		Benzo (b) Fluoranthene	ND	0.020	0.0014	1	
Fluorene	ND	0.020	0.0031	1		Benzo (a) Pyrene	ND	0.020	0.0020	1	
Phenanthrene	ND	0.020	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	
Anthracene	ND	0.020	0.0062	1		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	
Fluoranthene	ND	0.020	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	
Pyrene	ND	0.020	0.0033	1		1-Methylnaphthalene	ND	0.020	0.0043	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	88	28-139		2-Fluorobiphenyl	89	33-144	
p-Terphenyl-d14	133	23-160					

* analysis not validated

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Laboratory Calscience Environmental Laboratories, Inc.
Reviewer K. Shadowlight
Analysis/Method PAHs by Method 8270/SIM

Package ID T713PA1
Task Order 313150010
SDG No. IOJ0411
No. of Analyses 5

Date: December 8, 2005

Reviewer's Signature K Shadowlight

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for continuing calibration outliers
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Sampling

ANALYSIS: SEMIVOLATILES (PAHs)

SAMPLE DELIVERY GROUP: IOJ0411

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Sampling
Contract Task Order #:	313150010
SDG#:	IOJ0411
Project Manager:	P. Costa
Matrix:	Soil/Solid
Analysis:	Semivolatiles (PAHs)
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	December 8, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2), SW-846 Method 8270C* , and the *National Functional Guidelines For Organic Data Review* (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Del Mar Lab No.	Matrix	Method
Upstream 001-Ash	WL001	IOJ0411-01	solid	8270C/SIM
Upstream 001-Soil	WL002	IOJ0411-02	soil	8270C/SIM
Upstream 002	WL004	IOJ0411-04	solid	8270C/SIM
Upstream 002	WL005	IOJ0411-05	soil	8270C/SIM
RP-1	WL006	IOJ0411-06	soil	8270C/SIM

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The polyaromatic hydrocarbon analysis by 8270/SIM was subcontracted to Calscience Environmental Laboratories, Inc. The samples were received at both laboratories within the temperature limits of 4°C ±2°C, intact, and in good condition. The analysis did not require preservation, and no preservation was noted in the field. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were signed and dated by the appropriate field and laboratory personnel. The COC and transfer COC accounted for the samples and analysis presented in this SDG. Custody seals were not present on the coolers or samples at either laboratory; however, as the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The soil/solid samples were extracted within 14 days of collection and analyzed within 40 days of collection. No qualifications were required.

2.2 GC/MS TUNING

Tune criteria is not required for Single Ion Monitoring (SIM) analysis. No qualifications were required.

2.3 CALIBRATION

There was one initial calibration associated with this SDG dated 03/09/05. The average RRFs were ≥0.05 and the %RSDs were ≤15% in the initial calibration. An ICV was analyzed immediately following the initial calibration and the RRFs were ≥0.05 and %Ds were ≤20% for all target compounds. There were two continuing calibrations associated with the samples in this SDG dated 10/10/05 and 10/11/05. All RRFs were ≥0.05. The %Ds for indeno(1,2,3-cd)pyrene and dibenz(a,h)anthracene exceeded 20% in the continuing calibration dated 10/10/05. Nondetect results for indeno(1,2,3-cd)pyrene and dibenz(a,h)anthracene were qualified as estimated, "UJ," in samples WL001, WL002, and WL004. The %D for pyrene exceeded 20% in the continuing calibration analyzed 10/11/05; therefore, the results for pyrene were qualified as estimated "J," for detects and "UJ," for nondetects in samples WL005 and WL006. The %Ds for the remaining target compounds were ≤20% in both calibrations.

A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

2.4 BLANKS

One method blank (051007L09-MB) was extracted and analyzed with this SDG. There were no target compounds detected in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One laboratory control sample/laboratory control sample duplicate pair (051007L09-LCS/LCSD) was extracted and analyzed with this SDG. The recoveries and RPDs for spiked target compounds acenaphthene and pyrene were within the laboratory QC limits. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The base-neutral surrogate recoveries were within the laboratory QC limits for all samples in this SDG. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed for this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples identified for this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ±30 seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for 18 polyaromatic hydrocarbons target compounds by SW-846 Method 8270/SIM. Review of the sample chromatograms and retention times indicated no problems with target compound identification. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. Sample WL005 was analyzed at a 5× dilution only. The results and reporting limits were appropriately adjusted for sample amount, percent moisture, and dilution when applicable. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory. The results were reported in ppm (mg/kg). No further qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not reported for SIM analysis. No qualifications were required.

2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received:	10/07/05
Work Order No:	05-10-0445
Preparation:	EPA 3545
Method:	EPA 8270C SIM PAHs
Units:	mg/kg

Project: IOJ0411

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0411-01 W L001	05-10-0445-1	10/06/05	Solid	10/08/05	10/10/05	051007L09

Comment(s): -Results are reported on a dry weight basis. Raw Qual | Qual code
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Raw Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.27	0.02	0.0037	1		Benzo (a) Anthracene	0.017	0.02	0.0026	1	J J DNQ
2-Methylnaphthalene	0.037	0.02	0.0024	1		Chrysene	0.088	0.02	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	1	U
Acenaphthene	ND	0.020	0.0050	1	↓	Benzo (b) Fluoranthene	0.014	0.02	0.0014	1	J J DNQ
Fluorene	ND	0.020	0.0031	1	↓	Benzo (a) Pyrene	0.013	0.02	0.0020	1	J J DNQ
Phenanthrene	0.24	0.02	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	U
Anthracene	0.014	0.02	0.0062	1	J J DNQ	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	UJ C
Fluoranthene	0.076	0.02	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	UJ C
Pyrene	0.040	0.02	0.0033	1		1-Methylnaphthalene	0.024	0.02	0.0043	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	110	28-139		2-Fluorobiphenyl	80	33-144	
p-Terphenyl-d14	136	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0411-02 W L002	05-10-0445-2	10/06/05	Solid	10/08/05	10/10/05	051007L09

Comment(s): -Results are reported on a dry weight basis. Raw Qual | Qual code
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Raw Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.023	0.02	0.0037	1		Benzo (a) Anthracene	0.015	0.02	0.0026	1	J J DNQ
2-Methylnaphthalene	0.012	0.02	0.0024	1	J J DNQ	Chrysene	0.021	0.02	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	1	U
Acenaphthene	ND	0.020	0.0050	1	↓	Benzo (b) Fluoranthene	0.0086	0.02	0.0014	1	J J DNQ
Fluorene	ND	0.020	0.0031	1	↓	Benzo (a) Pyrene	ND	0.020	0.0020	1	U
Phenanthrene	0.038	0.02	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	U
Anthracene	ND	0.020	0.0062	1	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	UJ C
Fluoranthene	0.036	0.02	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	UJ C
Pyrene	0.035	0.02	0.0033	1		1-Methylnaphthalene	0.0081	0.02	0.0043	1	J J DNQ

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	99	28-139		2-Fluorobiphenyl	73	33-144	
p-Terphenyl-d14	123	23-160					

Level IV

LS 12/4/05

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 10/07/05
Work Order No: 05-10-0445
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IOJ0411

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0411-04	05-10-0445-3	10/06/05	Solid	10/08/05	10/10/05	051007L09

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.057	0.02	0.0038	1.02		Benzo (a) Anthracene	ND	0.020	0.0027	1.02	
2-Methylnaphthalene	0.024	0.02	0.0024	1.02		Chrysene	ND	0.020	0.0048	1.02	
Acenaphthylene	0.013	0.02	0.0025	1.02	J	Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	0.013	0.02	0.0031	1.02	J	Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	0.041	0.02	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	
Anthracene	ND	0.020	0.0063	1.02		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	
Fluoranthene	0.014	0.02	0.0020	1.02	J	Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	
Pyrene	0.014	0.02	0.0033	1.02	J	1-Methylnaphthalene	0.018	0.02	0.0044	1.02	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	138	28-139		2-Fluorobiphenyl	86	33-144	
p-Terphenyl-d14	144	23-160					

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0411-05	05-10-0445-4	10/06/05	Solid	10/08/05	10/11/05	051007L09

Comment(s): -Results are reported on a dry weight basis.
-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	2.3	0.1	0.019	5		Benzo (a) Anthracene	ND	0.10	0.013	5	
2-Methylnaphthalene	0.13	0.1	0.012	5		Chrysene	ND	0.10	0.024	5	
Acenaphthylene	ND	0.10	0.012	5		Benzo (k) Fluoranthene	ND	0.10	0.023	5	
Acenaphthene	ND	0.10	0.025	5		Benzo (b) Fluoranthene	ND	0.10	0.0070	5	
Fluorene	ND	0.10	0.015	5		Benzo (a) Pyrene	ND	0.10	0.0099	5	
Phenanthrene	0.16	0.1	0.019	5		Benzo (g,h,i) Perylene	ND	0.10	0.016	5	
Anthracene	ND	0.10	0.031	5		Indeno (1,2,3-c,d) Pyrene	ND	0.10	0.017	5	
Fluoranthene	ND	0.10	0.0097	5		Dibenz (a,h) Anthracene	ND	0.10	0.013	5	
Pyrene	ND	0.10	0.016	5		1-Methylnaphthalene	0.11	0.1	0.021	5	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	122	28-139		2-Fluorobiphenyl	86	33-144	
p-Terphenyl-d14	122	23-160					

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Del Mar Analytical 17461 Derian Avenue, Suite 100 Irvine, CA 92614-5845	Date Received: Work Order No: Preparation: Method: Units:	10/07/05 05-10-0445 EPA 3545 EPA 8270C SIM PAHs mg/kg	

Project: IOJ0411 — Page 3 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IOJ0411-06	05-10-0445-5	10/06/05	Solid	10/08/05	10/11/05	051007L09

Comment(s): -Results are reported on a dry weight basis. Rev Qual | Qual code

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.041	0.02	0.0037	1.01		Benzo (a) Anthracene	ND	0.020	0.0026	1.01	U
2-Methylnaphthalene	0.018	0.02	0.0024	1.01	J	Chrysene	ND	0.020	0.0048	1.01	
Acenaphthylene	ND	0.020	0.0024	1.01	U	Benzo (k) Fluoranthene	ND	0.020	0.0045	1.01	
Acenaphthene	ND	0.020	0.0051	1.01		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.01	
Fluorene	ND	0.020	0.0031	1.01		Benzo (a) Pyrene	ND	0.020	0.0020	1.01	
Phenanthrene	0.019	0.02	0.0038	1.01	J	Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.01	
Anthracene	ND	0.020	0.0063	1.01	U	Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.01	
Fluoranthene	0.011	0.02	0.0020	1.01	J	Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	
Pyrene	0.0085	0.02	0.0033	1.01	J	1-Methylnaphthalene	0.016	0.02	0.0043	1.01	J

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	131	28-139		2-Fluorobiphenyl	73	33-144	
p-Terphenyl-d14	124	23-160					

Method Blank	099-08-010-59	N/A	Solid	10/07/05	10/08/05	051007L09

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag. Rev Qual | Qual code

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0037	1	*	Benzo (a) Anthracene	ND	0.020	0.0026	1	*
2-Methylnaphthalene	ND	0.020	0.0024	1		Chrysene	ND	0.020	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1		Benzo (k) Fluoranthene	ND	0.020	0.0045	1	
Acenaphthene	ND	0.020	0.0050	1		Benzo (b) Fluoranthene	ND	0.020	0.0014	1	
Fluorene	ND	0.020	0.0031	1		Benzo (a) Pyrene	ND	0.020	0.0020	1	
Phenanthrene	ND	0.020	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	
Anthracene	ND	0.020	0.0062	1		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	
Fluoranthene	ND	0.020	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	
Pyrene	ND	0.020	0.0033	1		1-Methylnaphthalene	ND	0.020	0.0043	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Nitrobenzene-d5	87	28-139		2-Fluorobiphenyl	78	33-144	
p-Terphenyl-d14	131	23-160					

* not validated

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar - Irvine
Reviewer E. Wessling
Analysis/Method Metals

Package ID T713MT7
Task Order 313150010
SDG No. Multiple
No. of Analyses 4
Date: December 7, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	Method and calibration blank contamination
GC/MS Tune/Inst. Performance	ICV calibrationoutliers
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.

[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Ash Samples

ANALYSIS: METALS

SAMPLE DELIVERY GROUP: IOJ1234, IOJ1235, IOJ1236, IOJ1337

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
SDG#:	IOJ1234, IOJ1235, IOJ1236, and IOJ1337
Project Manager:	P. Costa
Matrix:	Water
Analysis:	Metals
QC Level:	Level IV
No. of Samples:	4
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 7, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP Metals* (DVP-5, Rev. 2), SW-846 *Methods 6010B for ICP-AES and 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the USEPA CLP *National Functional Guidelines for Inorganic Data Review* (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
PCC-1	WL034	IOJ1234-01	Water	200.7/200.8/245.1
CF-1	WL033	IOJ1235-01	Water	200.7/200.8/245.1
SSM-1	WL032	IOJ1236-01	Water	200.7/200.8/245.1
WC-1	WL035	IOJ1337-01	Water	200.7/200.8/245.1

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

One of the samples in this SDG was received at the laboratory above the temperature limits of 4°C ±2°C, at 17°C; however, as the samples were not volatile in nature, no qualifications were required. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the samples and analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COC and the dates of analyses recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP and ICP/MS metals and 28-days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

The ICP-MS met the method specified tune criteria; therefore, no qualifications were required for ICP-MS tuning.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP and ICP/MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with these SDGs and all recoveries were acceptable with the ICV for zinc associated with samples PCC-1, CF-1, and SSM-1. Zinc was qualified as an estimated detect in these samples. No further qualifications were required.

2.4 BLANKS

Negative values for boron and chromium were detected in method blank 5J20094-BLK1 at -0.0128 and –0.0042 mg/L; respectively. Associated detects were qualified as estimated detects, "J", up to five times the absolute value of the negative detect and nondetects were qualified as estimated nondetects, "UJ."

Cadmium and thallium were detected in method blank 5J19098-BLK1 at 0.10857 and 0.44239 mg/L; respectively. Cadmium was detected in method blank 5J20094-BLK1 at 0.0580 ug/L. Detects were qualified as estimated nondetects, "UJ." Iron was detected in method blank 5J20104-BLK1 at 0.162 mg/L, however, the method blank result was insufficient to qualify the iron sample results. Nickel was detected at levels up to 0.0163 mg/L and boron was detected up to –0.0775 mg/L in the CCBs associated with samples PCC-1, CF-1, and SSM-1. The remaining method blank and CCB results were nondetects at the reporting limit. No qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP and ICP/MS analyses. The recoveries were within the control limits and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS samples, ICP/MS LCS samples and mercury LCS samples as reported on the LCS on the summary forms and in the raw data were within the laboratory-established control limits. No qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on samples not associated with these sites. No evaluation was made for the samples in these SDGs.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on samples not associated with these sites. No evaluation was made for the samples in these SDGs.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP/MS, the ICP/MS internal standards were within established control limits. No qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Some target analytes were reported from dilution analyses due to matrix interference. Reporting limits and MDLs were adjusted accordingly. No qualifications were required.

2.13 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

2.13.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

There were no field duplicate analyses performed in association with the site samples.

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MWH-Pasadena/Boeing	Project ID:	Offsite Storm Water Samples	
300 North Lake Avenue, Suite 1200		Palo Comado Canyon	Sampled: 10/18/05
Pasadena, CA 91101	Report Number:	IOJ1234	Received: 10/18/05
Attention: Bronwyn Kelly			

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOJ1234-01 (WL034 - Water) - cont.											
Reporting Units: mg/l											
Barium	EPA 200.7	5J19080	0.0028	0.010	**0.19**	1	10/19/05	10/22/05			
Boron	EPA 200.7	5J19080	0.0080	0.050	**0.047**	1	10/19/05	10/22/05	J	J	B, DH9
Iron	EPA 200.7	5J19080	0.0088	0.040	**12**	1	10/19/05	10/24/05			

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Palo Comado Canyon
Report Number: IOJ1234

Sampled: 10/18/05
Received: 10/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers		
Sample ID: IOJ1234-01 (WL034 - Water) - cont.											
Reporting Units: ug/l											
Antimony	EPA 200.8	5J19098	0.18	2.0	**0.56**	1	10/19/05	10/20/05	J	J	DNQ
Arsenic	EPA 200.7	5J19080	3.8	5.0	**6.0**	1	10/19/05	10/22/05			
Beryllium	EPA 200.7	5J19080	0.62	2.0	ND	1	10/19/05	10/22/05		U	
Cadmium	EPA 200.8	5J19098	0.015	1.0	**0.34**	1	10/19/05	10/20/05	J, B	UJ	B
Chromium	EPA 200.7	5J19080	0.68	5.0	**13**	1	10/19/05	10/24/05		UJ	B
Cobalt	EPA 200.7	5J19080	2.0	10	**6.6**	1	10/19/05	10/22/05	J	J	DNQ
Copper	EPA 200.8	5J19098	0.49	2.0	**9.5**	1	10/19/05	10/20/05			
Lead	EPA 200.8	5J19098	0.13	1.0	**13**	1	10/19/05	10/20/05			
Manganese	EPA 200.7	5J19080	3.2	20	**910**	1	10/19/05	10/22/05			
Mercury	EPA 245.1	5J19052	0.063	0.20	ND	1	10/19/05	10/19/05		U	
Nickel	EPA 200.7	5J19080	2.0	10	**20**	1	10/19/05	10/22/05		UJ	B
Selenium	EPA 200.8	5J19098	0.36	2.0	**2.1**	1	10/19/05	10/20/05			
Silver	EPA 200.8	5J19098	0.089	1.0	ND	1	10/19/05	10/20/05		U	
Thallium	EPA 200.8	5J19098	0.075	1.0	**0.12**	1	10/19/05	10/20/05	J, B	UJ	B
Vanadium	EPA 200.7	5J19080	3.0	10	**22**	1	10/19/05	10/22/05			
Zinc	EPA 200.7	5J19080	3.7	20	**59**	1	10/19/05	10/22/05		J	R

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-Pasadena/Boeing	Project ID:	Offsite Storm Water Samples	
300 North Lake Avenue, Suite 1200		China Flat	Sampled: 10/18/05
Pasadena, CA 91101	Report Number:	IOJ1235	Received: 10/18/05
Attention: Bronwyn Kelly			

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual code
Sample ID: IOJ1235-01 (WL033 - Water) - cont.											
Reporting Units: mg/l											
Barium	EPA 200.7	5J19080	0.0028	0.010	**0.21**	1	10/19/05	10/22/05			
Boron	EPA 200.7	5J19080	0.0080	0.050	**0.029**	1	10/19/05	10/22/05	J	J	B, DNQ
Iron	EPA 200.7	5J19080	0.0088	0.040	**10**	1	10/19/05	10/24/05			

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Michele Harper
Project Manager

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
China Flat
Report Number: IOJ1235

Sampled: 10/18/05
Received: 10/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IOJ1235-01 (WL033 - Water) - cont.											
Reporting Units: ug/l											
Antimony	EPA 200.8	5J19098	0.18	2.0	**0.90**	1	10/19/05	10/20/05	J	J	DNG
Arsenic	EPA 200.7	5J19080	3.8	5.0	ND	1	10/19/05	10/22/05		U	
Beryllium	EPA 200.7	5J19080	0.62	2.0	ND	1	10/19/05	10/22/05		U	
Cadmium	EPA 200.8	5J19098	0.015	1.0	**0.23**	1	10/19/05	10/20/05	J, B	UJ	B
Chromium	EPA 200.7	5J19080	0.68	5.0	**10**	1	10/19/05	10/24/05		UJ	B
Cobalt	EPA 200.7	5J19080	2.0	10	**5.5**	1	10/19/05	10/22/05	J	J	DNG
Copper	EPA 200.8	5J19098	0.49	2.0	**11**	1	10/19/05	10/20/05			
Lead	EPA 200.8	5J19098	0.13	1.0	**7.4**	1	10/19/05	10/20/05			
Manganese	EPA 200.7	5J19080	3.2	20	**760**	1	10/19/05	10/22/05			
Mercury	EPA 245.1	5J19052	0.063	0.20	ND	1	10/19/05	10/19/05		U	
Nickel	EPA 200.7	5J19080	2.0	10	**21**	1	10/19/05	10/22/05		UJ	B
Selenium	EPA 200.8	5J19098	0.36	2.0	**2.0**	1	10/19/05	10/20/05			
Silver	EPA 200.8	5J19098	0.089	1.0	ND	1	10/19/05	10/20/05		U	
Thallium	EPA 200.8	5J19098	0.075	1.0	**0.15**	1	10/19/05	10/20/05	B, J	UJ	B
Vanadium	EPA 200.7	5J19080	3.0	10	**18**	1	10/19/05	10/22/05			
Zinc	EPA 200.7	5J19080	3.7	20	**46**	1	10/19/05	10/22/05		J	R

Del Mar Analytical, Irvine
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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Santa Susana Mts
Report Number: IOJ1236

Sampled: 10/18/05
Received: 10/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual code
Sample ID: IOJ1236-01 (WL032 - Water) - cont.											
Reporting Units: ug/l											
Antimony	EPA 200.8	5J19098	0.36	4.0	ND	2	10/19/05	10/21/05	RL-1	U	
Arsenic	EPA 200.7	5J19080	3.8	5.0	ND	1	10/19/05	10/22/05		U	
Beryllium	EPA 200.7	5J19080	0.62	2.0	ND	1	10/19/05	10/22/05		U	
Cadmium	EPA 200.8	5J19098	0.030	2.0	**0.098**	2	10/19/05	10/21/05	B, RL-1, J	UJ	B
Chromium	EPA 200.7	5J19080	0.68	5.0	**6.3**	1	10/19/05	10/24/05		UJ	B
Cobalt	EPA 200.7	5J19080	2.0	10	**3.5**	1	10/19/05	10/22/05	J	J	DVG
Copper	EPA 200.8	5J19098	2.0	8.0	**9.9**	4	10/19/05	10/20/05			
Lead	EPA 200.8	5J19098	0.52	4.0	**6.6**	4	10/19/05	10/20/05			
Manganese	EPA 200.7	5J19080	3.2	20	**270**	1	10/19/05	10/22/05			
Mercury	EPA 245.1	5J19052	0.063	0.20	ND	1	10/19/05	10/19/05		U	
Nickel	EPA 200.7	5J19080	2.0	10	**27**	1	10/19/05	10/22/05		UJ	B
Selenium	EPA 200.8	5J19098	0.72	4.0	ND	2	10/19/05	10/21/05	RL-1	U	
Silver	EPA 200.8	5J19098	0.18	2.0	ND	2	10/19/05	10/21/05	RL-1	U	
Thallium	EPA 200.8	5J19098	0.15	2.0	ND	2	10/19/05	10/21/05	RL-1	U	
Vanadium	EPA 200.7	5J19080	3.0	10	**9.9**	1	10/19/05	10/22/05	J	J	DVG
Zinc	EPA 200.7	5J19080	3.7	20	**63**	1	10/19/05	10/22/05		J	B

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Michele Harper
Project Manager

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Santa Susana Mts
Report Number: IOJ1236

Sampled: 10/18/05
Received: 10/18/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual code
									Rev Qual	
Sample ID: IOJ1236-01 (WL032 - Water) - cont.										
Reporting Units: mg/l										
Barium	EPA 200.7	5J19080	0.0028	0.010	**0.079**	1	10/19/05	10/22/05		
Boron	EPA 200.7	5J19080	0.0080	0.050	ND	1	10/19/05	10/22/05	UJ	B
Iron	EPA 200.7	5J19080	0.0088	0.040	**4.3**	1	10/19/05	10/24/05		

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Wildwood Canyon
Report Number: IOJ1337

Sampled: 10/18/05
Received: 10/19/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual Code
									Rev Qual	
Sample ID: IOJ1337-01 (WL035 - Water) - cont.										
Reporting Units: mg/l										
Barium	EPA 200.7	5J20104	0.0028	0.010	**0.48**	1	10/20/05	10/28/05		
Boron	EPA 200.7	5J20104	0.0080	0.050	**0.055**	1	10/20/05	10/28/05	U J	B
Iron	EPA 200.7	5J20104	0.0088	0.040	**51**	1	10/20/05	10/28/05		

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Michele Harper
Project Manager

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Wildwood Canyon
Report Number: IOJ1337

Sampled: 10/18/05
Received: 10/19/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers		
Sample ID: IOJ1337-01 (WL035 - Water) - cont.											
Reporting Units: ug/l											
Antimony	EPA 200.8	5J20094	0.18	2.0	**0.42**	1	10/20/05	10/20/05	J	J	DNQ
Arsenic	EPA 200.7	5J20104	3.8	5.0	**12**	1	10/20/05	10/28/05			
Beryllium	EPA 200.7	5J20104	0.62	2.0	**1.5**	1	10/20/05	10/28/05	J	J	DNQ
Cadmium	EPA 200.8	5J20094	0.015	1.0	**0.20**	1	10/20/05	10/20/05	J, B	UJ	B
Chromium	EPA 200.7	5J20104	0.68	5.0	**92**	1	10/20/05	10/28/05			
Cobalt	EPA 200.7	5J20104	2.0	10	**33**	1	10/20/05	10/28/05			
Copper	EPA 200.8	5J20094	0.49	2.0	**34**	1	10/20/05	10/20/05			
Lead	EPA 200.8	5J20094	0.13	1.0	**19**	1	10/20/05	10/20/05			
Manganese	EPA 200.7	5J20104	3.2	20	**1800**	1	10/20/05	10/28/05			
Mercury	EPA 245.1	5J20058	0.063	0.20	ND	1	10/20/05	10/20/05		U	
Nickel	EPA 200.7	5J20104	2.0	10	**83**	1	10/20/05	10/28/05			
Selenium	EPA 200.8	5J20094	0.36	2.0	**0.75**	1	10/20/05	10/20/05	J	J	DNQ
Silver	EPA 200.8	5J20094	0.089	1.0	ND	1	10/20/05	10/20/05		U	
Thallium	EPA 200.8	5J20094	0.075	1.0	**0.32**	1	10/20/05	10/20/05	J	J	DNQ
Vanadium	EPA 200.7	5J20104	3.0	10	**110**	1	10/20/05	10/28/05			
Zinc	EPA 200.7	5J20104	3.7	20	**180**	1	10/20/05	10/28/05			

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar- Irvine
Reviewer E. Wessling
Analysis/Method Metals by 6010B/6020/7471A

Package ID T713MT6
Task Order 313150010
SDG No. IOJ0739
No. of Analyses 9
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	--rejections for MS/MSD outliers
GC/MS Tune/Inst. Performance	-- estimations for MS/MSD outliers
Calibration	-- blank spike outliers
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements

[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Ash Samples

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IOJ0739

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
SDG#:	IOJ0739
Project Manager:	P. Costa
Matrix:	Solid
Analysis:	Metals
QC Level:	Level IV
No. of Samples:	9
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 7, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP Metals* (DVP-5, Rev. 2), SW-846 *Methods 6010B for ICP-AES and 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the USEPA CLP *National Functional Guidelines for Inorganic Data Review* (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
CF-1-Soil	WL008	IOJ0739-01	Soil	6010/6020/7471
CF-1-Ash	WL009	IOJ0739-02	Ash	6010/6020/7471
PCC-1-Soil	WL010	IOJ0739-03	Soil	6010/6020/7471
PCC-1-Ash	WL011	IOJ0739-04	Ash	6010/6020/7471
WC-1-Ash	WL014	IOJ0739-05	Ash	6010/6020/7471
WC-1-Soil	WL015	IOJ0739-06	Soil	6010/6020/7471
CRP-1-Soil	WL007	IOJ0739-07	Soil	6010/6020/7471
SC-1-Soil	WL012	IOJ0739-08	Soil	6010/6020/7471
SC-1-Ash	WL013	IOJ0739-09	Ash	6010/6020/7471

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No qualifications were required. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the samples and analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COC and the dates of analyses recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP and ICP/MS metals and 28-days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

The ICP-MS met the method specified tune criteria; therefore, no qualifications were required for ICP-MS tuning.

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP and ICP/MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with this SDG and all recoveries were acceptable. No qualifications were required.

2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were significantly below the sample detects so as not to result in qualification of the data. No qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP and ICP/MS analyses. The recoveries were within the control limits and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS samples, ICP/MS LCS samples, and mercury LCS samples as reported on the LCS on the summary forms and in the raw data were within the laboratory-established control limits with the exception of silver in the blank spike associated with samples WL007, WL012, and WL013. Silver was recovered above control limits; therefore, silver in these three site samples was qualified as estimated, "J."
No further qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample WL008. All RPDs were within control limits. No qualification was required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on WL008. Antimony and selenium were recovered below control limits. Antimony nondetects were rejected, "R," antimony and selenium detects were qualified as estimated, "J," and selenium nondetects were qualified as estimated, "UJ." No further qualification was required.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP/MS, the ICP/MS internal standards were within established control limits. No qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Some target analytes were reported from dilution analyses due to matrix interference. Reporting limits and MDLs were adjusted accordingly. No further qualifications were required.

2.13 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

2.13.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

There were no field duplicate analyses performed in association with the site samples.

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

METALS

Analyte	Rev Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0739-01 (WL008 - Soil)							**Sampled: 10/07/05**				
Reporting Units: mg/kg dry											
Antimony	J	Q	EPA 6020	5J12128	0.068	2.3	**0.19**	2	10/12/05	10/14/05	M2, J
Arsenic			EPA 6010B	5J12123	1.4	4.6	**8.4**	2	10/12/05	10/23/05	
Barium			EPA 6010B	5J12123	1.8	2.3	**99**	2	10/12/05	10/23/05	
Beryllium	J		EPA 6010B	5J12123	0.46	1.1	**0.66**	2	10/12/05	10/23/05	RL-1, J
Boron			EPA 6010B	5J12123	2.3	11	**14**	2	10/12/05	10/23/05	
Cadmium	J		EPA 6020	5J12128	0.046	1.1	**0.19**	2	10/12/05	10/14/05	M2, J
Chromium			EPA 6010B	5J12123	0.68	2.3	**19**	2	10/12/05	10/23/05	
Cobalt			EPA 6010B	5J12123	0.68	2.3	**8.6**	2	10/12/05	10/23/05	
Copper			EPA 6020	5J12128	0.46	2.3	**16**	2	10/12/05	10/14/05	
Iron			EPA 6010B	5J12123	3.4	11	**23000**	2	10/12/05	10/23/05	M-HA
Lead			EPA 6020	5J12128	0.046	1.1	**13**	2	10/12/05	10/14/05	
Manganese			EPA 6010B	5J12123	1.8	2.3	**550**	2	10/12/05	10/23/05	M-HA
Mercury	U		EPA 7471A	5J20061	0.0034	0.023	ND	1	10/20/05	10/20/05	
Nickel			EPA 6010B	5J12123	0.46	4.6	**16**	2	10/12/05	10/23/05	
Selenium	J	Q	EPA 6020	5J12128	0.46	2.3	**0.87**	2	10/12/05	10/14/05	M2, J
Silver	J		EPA 6020	5J12128	0.046	1.1	**0.055**	2	10/12/05	10/14/05	J
Thallium	J		EPA 6020	5J12128	0.23	1.1	**0.39**	2	10/12/05	10/14/05	J
Vanadium			EPA 6010B	5J12123	0.68	2.3	**31**	2	10/12/05	10/23/05	
Zinc			EPA 6010B	5J12123	3.4	11	**90**	2	10/12/05	10/23/05	
Sample ID: IOJ0739-02 (WL009 - Solid)							**Sampled: 10/07/05**				
Reporting Units: mg/kg dry											
Antimony	J	Q	EPA 6020	5J12128	0.030	1.0	**0.69**	1	10/12/05	10/14/05	J
Arsenic	J		EPA 6010B	5J12123	2.4	8.0	**5.4**	4	10/12/05	10/23/05	RL-1, J
Barium			EPA 6010B	5J12123	3.2	4.0	**630**	4	10/12/05	10/23/05	
Beryllium	U		EPA 6010B	5J12123	0.80	2.0	ND	4	10/12/05	10/23/05	RL-1
Boron			EPA 6010B	5J12123	4.0	20	**330**	4	10/12/05	10/23/05	
Cadmium	J		EPA 6020	5J12128	0.020	0.50	**0.31**	1	10/12/05	10/14/05	J
Chromium			EPA 6010B	5J12123	1.2	4.0	**19**	4	10/12/05	10/23/05	
Cobalt			EPA 6010B	5J12123	1.2	4.0	**7.7**	4	10/12/05	10/23/05	
Copper			EPA 6020	5J12128	0.20	1.0	**78**	1	10/12/05	10/14/05	
Iron			EPA 6010B	5J12123	6.0	20	**19000**	4	10/12/05	10/23/05	
Lead			EPA 6020	5J12128	0.020	0.50	**13**	1	10/12/05	10/14/05	
Manganese			EPA 6010B	5J12123	3.2	4.0	**1400**	4	10/12/05	10/23/05	
Mercury	U		EPA 7471A	5J20061	0.0030	0.020	ND	1	10/20/05	10/20/05	
Nickel			EPA 6010B	5J12123	0.80	8.0	**37**	4	10/12/05	10/23/05	
Selenium	J	Q	EPA 6020	5J12128	0.20	1.0	**0.82**	1	10/12/05	10/14/05	J
Silver	J		EPA 6020	5J12128	0.020	0.50	**0.22**	1	10/12/05	10/14/05	J
Thallium	J		EPA 6020	5J12128	0.10	0.50	**0.17**	1	10/12/05	10/14/05	J
Vanadium			EPA 6010B	5J12123	1.2	4.0	**42**	4	10/12/05	10/23/05	
Zinc			EPA 6010B	5J12123	6.0	20	**350**	4	10/12/05	10/23/05	

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MM Rev 1 1/25/06

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

METALS

Analyte	Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0739-03 (WL010 - Soil)							**Sampled: 10/07/05**				
Reporting Units: mg/kg dry											
Antimony	J	Q	EPA 6020	5J12128	0.030	1.0	**0.15**	1	10/12/05	10/14/05	J
Arsenic			EPA 6010B	5J12123	1.2	4.0	**13**	2	10/12/05	10/23/05	
Barium			EPA 6010B	5J12123	1.6	2.0	**96**	2	10/12/05	10/23/05	
Beryllium			EPA 6010B	5J12123	0.40	1.0	**0.80**	2	10/12/05	10/23/05	RL-1, J
Boron			EPA 6010B	5J12123	2.0	10	**12**	2	10/12/05	10/23/05	
Cadmium			EPA 6020	5J12128	0.020	0.51	**0.52**	1	10/12/05	10/14/05	
Chromium			EPA 6010B	5J12123	0.61	2.0	**20**	2	10/12/05	10/23/05	
Cobalt			EPA 6010B	5J12123	0.61	2.0	**13**	2	10/12/05	10/23/05	
Copper			EPA 6020	5J12128	0.20	1.0	**14**	1	10/12/05	10/14/05	
Iron			EPA 6010B	5J12123	3.0	10	**27000**	2	10/12/05	10/23/05	
Lead			EPA 6020	5J12128	0.020	0.51	**14**	1	10/12/05	10/14/05	
Manganese			EPA 6010B	5J12123	1.6	2.0	**1700**	2	10/12/05	10/23/05	
Mercury	U		EPA 7471A	5J20061	0.0030	0.020	ND	1	10/20/05	10/20/05	
Nickel			EPA 6010B	5J12123	0.40	4.0	**18**	2	10/12/05	10/23/05	
Selenium	J	Q	EPA 6020	5J12128	0.20	1.0	**3.2**	1	10/12/05	10/14/05	
Silver			EPA 6020	5J12128	0.020	0.51	**0.045**	1	10/12/05	10/14/05	J
Thallium			EPA 6020	5J12128	0.10	0.51	**0.30**	1	10/12/05	10/14/05	J
Vanadium			EPA 6010B	5J12123	0.61	2.0	**40**	2	10/12/05	10/23/05	
Zinc			EPA 6010B	5J12123	3.0	10	**100**	2	10/12/05	10/23/05	
Sample ID: IOJ0739-04 (WL011 - Solid)							**Sampled: 10/07/05**				
Reporting Units: mg/kg dry											
Antimony	J	Q	EPA 6020	5J12128	0.030	1.0	**0.36**	1	10/12/05	10/14/05	J
Arsenic			EPA 6010B	5J12123	2.4	8.0	**10**	4	10/12/05	10/23/05	
Barium			EPA 6010B	5J12123	3.2	4.0	**310**	4	10/12/05	10/23/05	
Beryllium			EPA 6010B	5J12123	0.80	2.0	**1.1**	4	10/12/05	10/23/05	RL-1, J
Boron			EPA 6010B	5J12123	4.0	20	**240**	4	10/12/05	10/23/05	
Cadmium			EPA 6020	5J12128	0.020	0.50	**1.5**	1	10/12/05	10/14/05	
Chromium			EPA 6010B	5J12123	1.2	4.0	**35**	4	10/12/05	10/23/05	
Cobalt			EPA 6010B	5J12123	1.2	4.0	**12**	4	10/12/05	10/23/05	
Copper			EPA 6020	5J12128	0.20	1.0	**84**	1	10/12/05	10/14/05	
Iron			EPA 6010B	5J12123	6.0	20	**33000**	4	10/12/05	10/23/05	
Lead			EPA 6020	5J12128	0.020	0.50	**14**	1	10/12/05	10/14/05	
Manganese			EPA 6010B	5J12123	3.2	4.0	**1000**	4	10/12/05	10/23/05	
Mercury			EPA 7471A	5J20061	0.0030	0.020	**0.0035**	1	10/20/05	10/20/05	J
Nickel			EPA 6010B	5J12123	0.80	8.0	**34**	4	10/12/05	10/23/05	
Selenium	J	Q	EPA 6020	5J12128	0.20	1.0	**3.8**	1	10/12/05	10/14/05	
Silver			EPA 6020	5J12128	0.020	0.50	**0.14**	1	10/12/05	10/14/05	J
Thallium			EPA 6020	5J12128	0.10	0.50	**0.34**	1	10/12/05	10/14/05	J
Vanadium			EPA 6010B	5J12123	1.2	4.0	**71**	4	10/12/05	10/23/05	
Zinc			EPA 6010B	5J12123	6.0	20	**250**	4	10/12/05	10/23/05	

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

METALS

Analyte	Rev Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0739-05 (WL014 - Solid)							**Sampled: 10/10/05**				
Reporting Units: mg/kg dry											
Antimony	J	Q	EPA 6020	5J18085	0.030	1.0	**0.48**	1	10/18/05	10/18/05	A-01, J
Arsenic	U		EPA 6010B	5J18102	0.61	2.0	ND	1	10/18/05	10/24/05	
Barium			EPA 6010B	5J18102	0.81	1.0	**320**	1	10/18/05	10/24/05	
Beryllium	U		EPA 6010B	5J18102	0.20	0.51	ND	1	10/18/05	10/24/05	
Boron			EPA 6010B	5J18102	1.0	5.1	**76**	1	10/18/05	10/24/05	
Cadmium	J		EPA 6020	5J18085	0.020	0.51	**0.079**	1	10/18/05	10/18/05	A-01, J
Chromium			EPA 6010B	5J18102	0.30	1.0	**3.8**	1	10/18/05	10/24/05	
Cobalt			EPA 6010B	5J18102	0.30	1.0	**3.5**	1	10/18/05	10/24/05	
Copper			EPA 6020	5J18085	0.20	1.0	**39**	1	10/18/05	10/18/05	
Iron			EPA 6010B	5J18102	1.5	5.1	**8700**	1	10/18/05	10/24/05	
Lead			EPA 6020	5J18085	0.020	0.51	**9.4**	1	10/18/05	10/18/05	
Manganese			EPA 6010B	5J18102	0.81	1.0	**270**	1	10/18/05	10/24/05	
Mercury	U		EPA 7471A	5J20062	0.0030	0.020	ND	1	10/20/05	10/20/05	
Nickel			EPA 6010B	5J18102	0.20	2.0	**4.5**	1	10/18/05	10/24/05	
Selenium	J	Q	EPA 6020	5J18085	0.20	1.0	**0.34**	1	10/18/05	10/18/05	J
Silver	J		EPA 6020	5J18085	0.020	0.51	**0.14**	1	10/18/05	10/18/05	J
Thallium	J		EPA 6020	5J18085	0.10	0.51	**0.16**	1	10/18/05	10/18/05	J
Vanadium			EPA 6010B	5J18102	0.30	1.0	**21**	1	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	1.5	5.1	**77**	1	10/18/05	10/24/05	
Sample ID: IOJ0739-06 (WL015 - Soil)							**Sampled: 10/10/05**				
Reporting Units: mg/kg dry											
Antimony	J	Q	EPA 6020	5J18085	0.030	1.0	**0.087**	1	10/18/05	10/18/05	A-01, J
Arsenic	J		EPA 6010B	5J18102	0.60	2.0	**0.89**	1	10/18/05	10/24/05	J
Barium			EPA 6010B	5J18102	0.80	1.0	**150**	1	10/18/05	10/24/05	
Beryllium	J		EPA 6010B	5J18102	0.20	0.50	**0.20**	1	10/18/05	10/24/05	J
Boron			EPA 6010B	5J18102	1.0	5.0	**5.5**	1	10/18/05	10/24/05	
Cadmium	J		EPA 6020	5J18085	0.020	0.50	**0.033**	1	10/18/05	10/18/05	A-01, J
Chromium			EPA 6010B	5J18102	0.30	1.0	**3.6**	1	10/18/05	10/24/05	
Cobalt			EPA 6010B	5J18102	0.30	1.0	**4.0**	1	10/18/05	10/24/05	
Copper			EPA 6020	5J18085	0.20	1.0	**30**	1	10/18/05	10/18/05	
Iron			EPA 6010B	5J18102	1.5	5.0	**11000**	1	10/18/05	10/24/05	
Lead			EPA 6020	5J18085	0.020	0.50	**2.4**	1	10/18/05	10/18/05	
Manganese			EPA 6010B	5J18102	0.80	1.0	**210**	1	10/18/05	10/24/05	
Mercury	U		EPA 7471A	5J20062	0.0030	0.020	ND	1	10/20/05	10/20/05	
Nickel			EPA 6010B	5J18102	0.20	2.0	**3.1**	1	10/18/05	10/24/05	
Selenium	J	Q	EPA 6020	5J18085	0.20	1.0	**0.37**	1	10/18/05	10/18/05	J
Silver	J		EPA 6020	5J18085	0.020	0.50	**0.041**	1	10/18/05	10/18/05	J
Thallium	J		EPA 6020	5J18085	0.10	0.50	**0.14**	1	10/18/05	10/18/05	J
Vanadium			EPA 6010B	5J18102	0.30	1.0	**25**	1	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	1.5	5.0	**35**	1	10/18/05	10/24/05	

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Michele Harper
Project Manager

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

METALS

Rev Qual | Qual Code

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0739-07 (WL007 - Soil)					**Sampled: 10/07/05**				
Reporting Units: mg/kg dry									
Antimony J Q	EPA 6020	5J19096	0.061	2.0	**0.18**	2	10/19/05	10/20/05	RL-1, J
Arsenic	EPA 6010B	5J19120	0.61	2.0	**5.9**	1	10/19/05	10/22/05	
Barium	EPA 6010B	5J19120	0.81	1.0	**97**	1	10/19/05	10/22/05	
Beryllium	EPA 6010B	5J19120	0.20	0.51	**0.65**	1	10/19/05	10/22/05	
Boron	EPA 6010B	5J19120	1.0	5.1	**11**	1	10/19/05	10/22/05	
Cadmium J	EPA 6020	5J19096	0.040	1.0	**0.25**	2	10/19/05	10/20/05	RL-1, J
Chromium	EPA 6010B	5J19120	0.30	1.0	**18**	1	10/19/05	10/24/05	
Cobalt	EPA 6010B	5J19120	0.30	1.0	**5.1**	1	10/19/05	10/22/05	
Copper	EPA 6020	5J19096	0.40	2.0	**15**	2	10/19/05	10/20/05	
Iron	EPA 6010B	5J19120	1.5	5.1	**18000**	1	10/19/05	10/24/05	
Lead	EPA 6020	5J19096	0.040	1.0	**14**	2	10/19/05	10/20/05	
Manganese	EPA 6010B	5J19120	0.81	1.0	**290**	1	10/19/05	10/22/05	
Mercury U	EPA 7471A	5J20062	0.0030	0.020	ND	1	10/20/05	10/20/05	
Nickel	EPA 6010B	5J19120	0.20	2.0	**13**	1	10/19/05	10/22/05	
Selenium J Q	EPA 6020	5J19096	0.40	2.0	**0.43**	2	10/19/05	10/20/05	RL-1, J
Silver J L	EPA 6020	5J19096	0.040	1.0	**0.061**	2	10/19/05	10/20/05	L1, RL-1, J
Thallium J	EPA 6020	5J19096	0.20	1.0	**0.21**	2	10/19/05	10/20/05	RL-1, J
Vanadium	EPA 6010B	5J19120	0.30	1.0	**29**	1	10/19/05	10/22/05	
Zinc	EPA 6010B	5J19120	1.5	5.1	**72**	1	10/19/05	10/22/05	
Sample ID: IOJ0739-08 (WL012 - Soil)					**Sampled: 10/10/05**				
Reporting Units: mg/kg dry									
Antimony J Q	EPA 6020	5J19096	0.030	1.0	**0.056**	1	10/19/05	10/20/05	J
Arsenic J	EPA 6010B	5J19120	2.4	8.1	**5.5**	4	10/19/05	10/24/05	RL-1, J
Barium	EPA 6010B	5J19120	3.2	4.0	**230**	4	10/19/05	10/24/05	
Beryllium U	EPA 6010B	5J19120	0.81	2.0	ND	4	10/19/05	10/24/05	RL-1
Boron U	EPA 6010B	5J19120	4.0	20	ND	4	10/19/05	10/24/05	RL-1
Cadmium J	EPA 6020	5J19096	0.020	0.51	**0.046**	1	10/19/05	10/20/05	J
Chromium	EPA 6010B	5J19120	1.2	4.0	**14**	4	10/19/05	10/24/05	
Cobalt	EPA 6010B	5J19120	1.2	4.0	**12**	4	10/19/05	10/24/05	
Copper	EPA 6020	5J19096	0.20	1.0	**24**	1	10/19/05	10/20/05	
Iron	EPA 6010B	5J19120	6.1	20	**32000**	4	10/19/05	10/24/05	
Lead	EPA 6020	5J19096	0.020	0.51	**6.4**	1	10/19/05	10/20/05	
Manganese	EPA 6010B	5J19120	3.2	4.0	**500**	4	10/19/05	10/24/05	
Mercury U	EPA 7471A	5J20062	0.0030	0.020	ND	1	10/20/05	10/20/05	
Nickel	EPA 6010B	5J19120	0.81	8.1	**9.7**	4	10/19/05	10/24/05	
Selenium UJ Q	EPA 6020	5J19096	0.20	1.0	ND	1	10/19/05	10/20/05	
Silver J L	EPA 6020	5J19096	0.020	0.51	**0.043**	1	10/19/05	10/20/05	L1, J
Thallium J	EPA 6020	5J19096	0.10	0.51	**0.42**	1	10/19/05	10/20/05	J
Vanadium	EPA 6010B	5J19120	1.2	4.0	**80**	4	10/19/05	10/24/05	
Zinc	EPA 6010B	5J19120	6.1	20	**87**	4	10/19/05	10/24/05	

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Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1112
Report Number: IOJ0739

Sampled: 10/07/05-10/10/05
Received: 10/10/05

METALS

Rev Qual | Qual Code

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0739-09 (WL013 - Solid)					**Sampled: 10/10/05**				
Reporting Units: mg/kg dry									
Antimony J Q	EPA 6020	5J19096	0.030	1.0	**0.50**	1	10/19/05	10/20/05	J
Arsenic U	EPA 6010B	5J19120	2.4	8.1	ND	4	10/19/05	10/24/05	RL-1
Barium	EPA 6010B	5J19120	3.2	4.0	**370**	4	10/19/05	10/24/05	
Beryllium U	EPA 6010B	5J19120	0.81	2.0	ND	4	10/19/05	10/24/05	RL-1
Boron	EPA 6010B	5J19120	4.0	20	**120**	4	10/19/05	10/24/05	
Cadmium J J	EPA 6020	5J19096	0.020	0.51	**0.12**	1	10/19/05	10/20/05	J
Chromium	EPA 6010B	5J19120	1.2	4.0	**13**	4	10/19/05	10/24/05	
Cobalt	EPA 6010B	5J19120	1.2	4.0	**7.0**	4	10/19/05	10/24/05	
Copper	EPA 6020	5J19096	0.20	1.0	**38**	1	10/19/05	10/20/05	
Iron	EPA 6010B	5J19120	6.1	20	**19000**	4	10/19/05	10/24/05	
Lead	EPA 6020	5J19096	0.020	0.51	**42**	1	10/19/05	10/20/05	
Manganese	EPA 6010B	5J19120	3.2	4.0	**670**	4	10/19/05	10/24/05	
Mercury U	EPA 7471A	5J20062	0.0030	0.020	ND	1	10/20/05	10/20/05	
Nickel	EPA 6010B	5J19120	0.81	8.1	**11**	4	10/19/05	10/24/05	
Selenium J Q	EPA 6020	5J19096	0.20	1.0	**0.25**	1	10/19/05	10/20/05	J
Silver J L	EPA 6020	5J19096	0.020	0.51	**0.23**	1	10/19/05	10/20/05	L1, J
Thallium J J	EPA 6020	5J19096	0.10	0.51	**0.18**	1	10/19/05	10/20/05	J
Vanadium	EPA 6010B	5J19120	1.2	4.0	**49**	4	10/19/05	10/24/05	
Zinc	EPA 6010B	5J19120	6.1	20	**120**	4	10/19/05	10/24/05	

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar- Irvine
Reviewer E. Wessling
Analysis/Method Metals by 6010B/6020/7471A

Package ID T713MT4
Task Order 313150010
SDG No. IOJ01120
No. of Analyses 2
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualifications were assigned for the following:
Holding Times	-- blank contamination
GC/MS Tune/Inst. Performance	-- MS/MSD outliers
Calibration	-- blank spike outliers
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Ash Samples

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IOJ1120

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
SDG#:	IOJ1120
Project Manager:	P. Costa
Matrix:	Solid
Analysis:	Metals
QC Level:	Level IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 7, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP Metals* (DVP-5, Rev. 2), SW-846 *Methods 6010B for ICP-AES and 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the USEPA CLP *National Functional Guidelines for Inorganic Data Review* (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
SMM-1-Soil	WL022	IOJ1120-01	Soil	6010/6020/7471
SMM-1-Ash	WL023	IOJ1120-02	Ash	6010/6020/7471

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples in this SDG was received at the laboratory above the temperature limits of 4°C ±2°C, at 15°C; however, as the samples were not volatile in nature, no qualifications were required. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the samples and analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COC and the dates of analyses recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP and ICP/MS metals and 28-days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

The ICP-MS met the method specified tune criteria; therefore, no qualifications were required for ICP-MS tuning.

2.3 CALIBRATION

The ICV results showed acceptable recoveries, 90-110% for ICP and ICP/MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with this SDG and all recoveries were acceptable. No qualifications were required.

2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were significantly below the sample detects so as not to result in qualification of the data with the exception of selenium in the CCB. Selenium was qualified as an estimated nondetect, "UJ." No further qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP and ICP/MS analyses. The recoveries were within the control limits and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS samples, ICP/MS LCS samples, and mercury LCS samples as reported on the LCS on the summary forms and in the raw data were within the laboratory-established control limits with the exception of silver in the blank spike with a recovery of 30.2%. Silver was qualifies as an estimated detect or nondetect, "J or UJ," in the site samples. No further qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample WL022. All RPDs were within control limits. No qualification was required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on WL022. Antimony and silver were recovered below control limits. Detects and nondetects for antimony and silver were qualified as estimated, "J or UJ," for all site samples. No further qualification was required.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP/MS, the ICP/MS internal standards were within established control limits. No qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No further qualifications were required.

2.13 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

2.13.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

There were no field duplicate analyses performed in association with the site samples.

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1113
Report Number: IOJ1120

Sampled: 10/13/05
Received: 10/14/05

METALS

Analyte	Real Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1120-01 (WL022 - Soil)											
Reporting Units: mg/kg dry											
Antimony	J		EPA 6020	5J18103	0.030	1.0	**0.053**	1	10/18/05	10/19/05	M2, J
Arsenic			EPA 6010B	5J18102	0.61	2.0	**5.1**	1	10/18/05	10/24/05	
Barium			EPA 6010B	5J18102	0.81	1.0	**48**	1	10/18/05	10/24/05	M1
Beryllium	J		EPA 6010B	5J18102	0.20	0.51	**0.34**	1	10/18/05	10/24/05	J
Boron	U		EPA 6010B	5J18102	1.0	5.1	ND	1	10/18/05	10/24/05	
Cadmium	J		EPA 6020	5J18103	0.020	0.51	**0.072**	1	10/18/05	10/19/05	J
Chromium			EPA 6010B	5J18102	0.30	1.0	**9.7**	1	10/18/05	10/24/05	
Cobalt			EPA 6010B	5J18102	0.30	1.0	**3.3**	1	10/18/05	10/24/05	
Copper			EPA 6020	5J18103	0.20	1.0	**5.6**	1	10/18/05	10/19/05	
Iron			EPA 6010B	5J18102	1.5	5.1	**11000**	1	10/19/05	10/24/05	
Lead			EPA 6020	5J18103	0.020	0.51	**5.3**	1	10/18/05	10/19/05	
Manganese			EPA 6010B	5J18102	0.81	1.0	**190**	1	10/19/05	10/24/05	
Mercury	U		EPA 7471A	5J24081	0.0030	0.020	ND	1	10/24/05	10/24/05	
Nickel			EPA 6010B	5J18102	0.20	2.0	**7.8**	1	10/18/05	10/24/05	
Selenium	UJ	B	EPA 6020	5J18103	0.20	1.0	**0.29**	1	10/18/05	10/19/05	B, J
Silver	J	LB	EPA 6020	5J25083	0.020	0.51	**0.029**	1	10/25/05	10/27/05	J
Thallium	J		EPA 6020	5J18103	0.10	0.51	**0.18**	1	10/18/05	10/19/05	J
Vanadium			EPA 6010B	5J18102	0.30	1.0	**18**	1	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	1.5	5.1	**33**	1	10/18/05	10/24/05	
Sample ID: IOJ1120-02 (WL023 - Solid)											
Reporting Units: mg/kg dry											
Antimony	J		EPA 6020	5J18103	0.031	1.0	**0.12**	1	10/18/05	10/19/05	J
Arsenic			EPA 6010B	5J18102	0.62	2.1	**3.1**	1	10/18/05	10/24/05	
Barium			EPA 6010B	5J18102	0.82	1.0	**180**	1	10/18/05	10/24/05	
Beryllium	J		EPA 6010B	5J18102	0.21	0.51	**0.41**	1	10/18/05	10/24/05	J
Boron			EPA 6010B	5J18102	1.0	5.1	**77**	1	10/18/05	10/24/05	
Cadmium			EPA 6020	5J18103	0.021	0.51	**0.65**	1	10/18/05	10/19/05	
Chromium			EPA 6010B	5J18102	0.31	1.0	**13**	1	10/18/05	10/24/05	
Cobalt			EPA 6010B	5J18102	0.31	1.0	**3.3**	1	10/18/05	10/24/05	
Copper			EPA 6020	5J18103	0.21	1.0	**27**	1	10/18/05	10/19/05	
Iron			EPA 6010B	5J18102	6.2	21	**11000**	4	10/19/05	11/01/05	
Lead			EPA 6020	5J18103	0.021	0.51	**16**	1	10/18/05	10/19/05	
Manganese			EPA 6010B	5J18102	0.82	1.0	**270**	1	10/19/05	10/24/05	
Mercury	U		EPA 7471A	5J24081	0.0031	0.021	ND	1	10/24/05	10/24/05	
Nickel			EPA 6010B	5J18102	0.21	2.1	**15**	1	10/18/05	10/24/05	
Selenium	UJ	B	EPA 6020	5J18103	0.21	1.0	**0.63**	1	10/18/05	10/19/05	B, J
Silver	J	L	EPA 6020	5J26127	0.021	0.51	**0.11**	1	10/26/05	10/28/05	J
Thallium	J		EPA 6020	5J18103	0.10	0.51	**0.22**	1	10/18/05	10/19/05	J
Vanadium			EPA 6010B	5J18102	0.31	1.0	**23**	1	10/18/05	10/24/05	
Zinc			EPA 6010B	5J18102	1.5	5.1	**110**	1	10/18/05	10/24/05	

Del Mar Analytical, Irvine
Michele Harper
Project Manager

PM 1/25/06 Rev 1 MC 2.10.06 Rev 2 PM Rev 3 2/22/06

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar- Irvine
Reviewer E. Wessling
Analysis/Method Metals by 6010B/6020/7471A

Package ID T713MT2
Task Order 313150010
SDG No. IOJ0411
No. of Analyses 5
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	-- blank contamination
GC/MS Tune/Inst. Performance	-- continuing calibration outliers
Calibration	-- lack of sample weights for mercury
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Ash Samples

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IOJ0411

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
SDG#:	IOJ0411
Project Manager:	P. Costa
Matrix:	Solid
Analysis:	Metals
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 7, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels III and IV ICP Metals* (DVP-5, Rev. 2), SW-846 *Methods 6010B for ICP-AES and 7471A for Mercury (Manual Cold-Vapor Technique)*, and validation guidelines outlined in the USEPA CLP *National Functional Guidelines for Inorganic Data Review* (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Upstream001 Ash	WL001	IOJ0411-01	Ash	6010/6020/7471
Upstream001 Soil	WL002	IOJ0411-02	Soil	6010/6020/7471
Upstream002	WL004	IOJ0411-04	Soil	6010/6020/7471
Upstream002	WL005	IOJ0411-05	Ash	6010/6020/7471
RP-1	WL006	IOJ0411-06	Soil	6010/6020/7471

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All of the samples in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No qualifications were required. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the samples and analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The dates of collection recorded on the COC and the dates of analyses recorded in the raw data, documented that the sample analyses were performed within the specified holding times of six months for the ICP and ICP/MS metals and 28-days for mercury. No qualifications were required.

2.2 ICP-MS TUNING

The ICP-MS met the method specified tune criteria; therefore, no qualifications were required for ICP-MS tuning.

2.3 CALIBRATION

The ICV results showed acceptable recoveries, 90-110% for ICP and ICP/MS metals and 80-120% for mercury. The CCV results in association with the ICP-MS analysis for cadmium were above control limits; therefore, all detects for cadmium were qualified as detects, "J." The laboratory analyzed reporting limit check standards in association with this SDG and all recoveries were acceptable. No further qualifications were required.

2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were significantly below the sample detects so as not to result in qualification of the data with the exception of the ICB

associated with the analysis of nickel in sample WL002. WL002 was qualified as an estimated nondetect, "UJ," No further qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP and ICP/MS analyses. The recoveries were within the control limits and no qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP LCS samples, ICP/MS LCS samples and mercury LCS samples as reported on the LCS on the summary forms and in the raw data were within the laboratory-established control limits. No qualifications were required.

2.7 LABORATORY DUPLICATES

MS/MSD analyses were performed on sample WL004. All RPDs were within control limits. No qualification was required.

2.8 MATRIX SPIKE

MS/MSD analyses were performed on sample WL004. Iron and manganese were recovered outside of control limits; however, the amount of these target compounds present in the samples precluded accurate recovery of the spiked amount in the MD/MSD analysis. No qualification was required.

2.9 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of these samples; therefore, furnace atomic absorption QC is not applicable.

2.10 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the samples in this SDG; therefore, no assessment was made with respect to this criterion.

2.11 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP/MS, the ICP/MS internal standards were within established control limits. No qualifications were required.

2.12 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No sample weights were recorded for the mercury analysis; therefore, all mercury results were qualified as estimated, "J" for detects and "UJ" for nondetects. Some target analytes were reported from dilution analyses due to matrix interference. Reporting limits and MDLs were adjusted accordingly. No further qualifications were required.

2.13 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

2.13.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no associated field QC samples. No qualifications were required.

2.13.2 Field Duplicates

There were no field duplicate analyses performed in association with the site samples.

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

METALS

Analyte	Rev Qual	Qual Code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0411-01 (WL001 - Solid)											
Reporting Units: mg/kg dry											
Antimony	~~J~~		EPA 6020	5J07112	0.030	1.0	0.064	1	10/07/05	10/11/05	J
Arsenic	U		EPA 6010B	5J07101	1.2	4.0	ND	2	10/07/05	10/15/05	RL-1
Barium			EPA 6010B	5J07101	1.6	2.0	220	2	10/07/05	10/15/05	
Beryllium	U		EPA 6010B	5J07101	0.40	1.0	ND	2	10/07/05	10/15/05	RL-1
Boron			EPA 6010B	5J07101	2.0	10	58	2	10/07/05	10/15/05	
Cadmium	J	R	EPA 6020	5J07112	0.020	0.50	0.25	1	10/07/05	10/11/05	A-01, J
Chromium			EPA 6010B	5J07101	0.60	2.0	5.3	2	10/07/05	10/15/05	
Cobalt	~~J~~		EPA 6010B	5J07101	0.60	2.0	1.6	2	10/07/05	10/15/05	J, RL-1
Copper			EPA 6020	5J07112	0.20	1.0	21	1	10/07/05	10/11/05	
Iron			EPA 6010B	5J07101	3.0	10	5700	2	10/07/05	10/15/05	
Lead			EPA 6020	5J07112	0.020	0.50	18	1	10/07/05	10/11/05	
Manganese			EPA 6010B	5J07101	1.6	2.0	310	2	10/07/05	10/15/05	
Mercury	J	*10	EPA 7471A	5J11102	0.0063	0.020	0.032	1	10/11/05	10/12/05	
Nickel			EPA 6010B	5J07101	0.40	4.0	8.6	2	10/07/05	10/15/05	B
Selenium	~~J~~		EPA 6020	5J07112	0.20	1.0	0.40	1	10/07/05	10/11/05	J
Silver	~~J~~		EPA 6020	5J07112	0.020	0.50	0.075	1	10/07/05	10/11/05	J
Thallium	~~J~~		EPA 6020	5J07112	0.10	0.50	0.17	1	10/07/05	10/11/05	J
Vanadium			EPA 6010B	5J07101	0.60	2.0	11	2	10/07/05	10/15/05	
Zinc			EPA 6010B	5J07101	3.0	10	47	2	10/07/05	10/15/05	
Sample ID: IOJ0411-02 (WL002 - Solid)											
Reporting Units: mg/kg dry											
Antimony	J		EPA 6020	5J07112	0.030	1.0	0.030	1	10/07/05	10/11/05	J
Arsenic			EPA 6010B	5J07101	0.60	2.0	3.3	1	10/07/05	10/14/05	
Barium			EPA 6010B	5J07101	0.80	1.0	42	1	10/07/05	10/14/05	
Beryllium	J		EPA 6010B	5J07101	0.20	0.50	0.27	1	10/07/05	10/14/05	J
Boron	J		EPA 6010B	5J07101	1.0	5.0	1.8	1	10/07/05	10/14/05	J
Cadmium	J	R	EPA 6020	5J07112	0.020	0.50	0.066	1	10/07/05	10/11/05	A-01, J
Chromium			EPA 6010B	5J07101	0.30	1.0	7.0	1	10/07/05	10/14/05	
Cobalt			EPA 6010B	5J07101	0.30	1.0	3.1	1	10/07/05	10/14/05	
Copper			EPA 6020	5J07112	0.20	1.0	4.7	1	10/07/05	10/11/05	
Iron			EPA 6010B	5J07101	1.5	5.0	9300	1	10/07/05	10/14/05	
Lead			EPA 6020	5J07112	0.020	0.50	5.1	1	10/07/05	10/11/05	
Manganese			EPA 6010B	5J07101	0.80	1.0	180	1	10/07/05	10/14/05	
Mercury	UJ	*10	EPA 7471A	5J11102	0.0063	0.020	ND	1	10/11/05	10/12/05	
Nickel	UJ	B	EPA 6010B	5J07101	0.20	2.0	5.4	1	10/07/05	10/14/05	B
Selenium	J		EPA 6020	5J07112	0.20	1.0	0.23	1	10/07/05	10/11/05	J
Silver	U		EPA 6020	5J07112	0.020	0.50	ND	1	10/07/05	10/11/05	
Thallium	J		EPA 6020	5J07112	0.10	0.50	0.13	1	10/07/05	10/11/05	J
Vanadium			EPA 6010B	5J07101	0.30	1.0	14	1	10/07/05	10/14/05	
Zinc			EPA 6010B	5J07101	1.5	5.0	30	1	10/07/05	10/14/05	

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MM Rev1 1/25/06

MM Rev 3 2/22/06

MC 7.10.06 Rev 2

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

METALS

Analyte	Raw Qual	Qual code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ0411-04 (WL004 - Solid)											
Reporting Units: mg/kg dry											
Antimony	U		EPA 6020	5J07112	0.061	2.0	ND	2	10/07/05	10/11/05	M2, RL-1
Arsenic			EPA 6010B	5J07101	0.61	2.0	7.8	1	10/07/05	10/14/05	
Barium			EPA 6010B	5J07101	0.81	1.0	84	1	10/07/05	10/14/05	M2
Beryllium			EPA 6010B	5J07101	0.20	0.51	0.64	1	10/07/05	10/14/05	
Boron			EPA 6010B	5J07101	1.0	5.1	6.0	1	10/07/05	10/14/05	
Cadmium	Y		EPA 6020	5J07112	0.041	1.0	0.12	2	10/07/05	10/11/05	RL-1, J
Chromium			EPA 6010B	5J07101	0.31	1.0	23	1	10/07/05	10/14/05	
Cobalt			EPA 6010B	5J07101	0.31	1.0	11	1	10/07/05	10/14/05	
Copper			EPA 6020	5J07112	0.41	2.0	13	2	10/07/05	10/11/05	
Iron			EPA 6010B	5J07101	6.1	20	28000	4	10/07/05	10/17/05	M-HA
Lead			EPA 6020	5J07112	0.041	1.0	12	2	10/07/05	10/11/05	
Manganese			EPA 6010B	5J07101	0.81	1.0	490	1	10/07/05	10/14/05	M-HA
Mercury	J	*10	EPA 7471A	5J11102	0.0064	0.020	0.012	1	10/11/05	10/12/05	J
Nickel			EPA 6010B	5J07101	0.20	2.0	15	1	10/07/05	10/14/05	
Selenium	Y		EPA 6020	5J07112	0.41	2.0	0.54	2	10/07/05	10/11/05	RL-1, J
Silver	Y		EPA 6020	5J07112	0.041	1.0	0.041	2	10/07/05	10/11/05	RL-1, J
Thallium	Y		EPA 6020	5J07112	0.20	1.0	0.44	2	10/07/05	10/11/05	RL-1, J
Vanadium			EPA 6010B	5J07101	0.31	1.0	44	1	10/07/05	10/14/05	
Zinc			EPA 6010B	5J07101	1.5	5.1	74	1	10/07/05	10/14/05	M2
Sample ID: IOJ0411-05 (WL005 - Solid)											
Reporting Units: mg/kg dry											
Antimony	Y	J	EPA 6020	5J07112	0.030	1.0	0.085	1	10/07/05	10/11/05	J
Arsenic	Y	J	EPA 6010B	5J07101	1.2	4.0	2.3	2	10/07/05	10/15/05	RL-1, J
Barium			EPA 6010B	5J07101	1.6	2.0	240	2	10/07/05	10/15/05	
Beryllium	Y	J	EPA 6010B	5J07101	0.40	1.0	0.51	2	10/07/05	10/15/05	RL-1, J
Boron			EPA 6010B	5J07101	2.0	10	87	2	10/07/05	10/15/05	
Cadmium	J	R	EPA 6020	5J07112	0.020	0.50	0.15	1	10/07/05	10/11/05	A-01, J
Chromium			EPA 6010B	5J07101	0.60	2.0	14	2	10/07/05	10/15/05	
Cobalt			EPA 6010B	5J07101	0.60	2.0	4.0	2	10/07/05	10/15/05	
Copper			EPA 6020	5J07112	0.20	1.0	34	1	10/07/05	10/11/05	
Iron			EPA 6010B	5J07101	3.0	10	12000	2	10/07/05	10/15/05	
Lead			EPA 6020	5J07112	0.020	0.50	15	1	10/07/05	10/11/05	
Manganese			EPA 6010B	5J07101	1.6	2.0	440	2	10/07/05	10/15/05	
Mercury	J	*10	EPA 7471A	5J11102	0.0063	0.020	0.025	1	10/11/05	10/12/05	
Nickel			EPA 6010B	5J07101	0.40	4.0	13	2	10/07/05	10/15/05	
Selenium	Y	J	EPA 6020	5J07112	0.20	1.0	0.77	1	10/07/05	10/11/05	J
Silver	Y	J	EPA 6020	5J07112	0.020	0.50	0.075	1	10/07/05	10/11/05	J
Thallium	Y	J	EPA 6020	5J07112	0.10	0.50	0.18	1	10/07/05	10/11/05	J
Vanadium			EPA 6010B	5J07101	0.60	2.0	28	2	10/07/05	10/15/05	
Zinc			EPA 6010B	5J07101	3.0	10	140	2	10/07/05	10/15/05	

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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PM 1/25/06 Rev 1 MC 2.10.06 Rev 2

Del Mar Analytical

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The Boeing Company-SSFL
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148
Attention: Paul Costa

Project ID: Boeing SSFL-NPDES (ash)
TAS# MWH-1111
Report Number: IOJ0411

Sampled: 10/06/05
Received: 10/06/05

METALS

Sample ID: IOJ0411-06 (WL006 - Solid)
Reporting Units: mg/kg dry

Analyte	Rev Qual	Qual code	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Antimony	X		EPA 6020	5J07112	0.030	1.0	0.037	1	10/07/05	10/11/05	J
Arsenic			EPA 6010B	5J07101	0.60	2.0	4.0	1	10/07/05	10/14/05	
Barium			EPA 6010B	5J07101	0.81	1.0	58	1	10/07/05	10/14/05	
Beryllium	X		EPA 6010B	5J07101	0.20	0.50	0.39	1	10/07/05	10/14/05	J
Boron	U		EPA 6010B	5J07101	1.0	5.0	ND	1	10/07/05	10/14/05	
Cadmium		R	EPA 6020	5J07112	0.020	0.50	0.063	1	10/07/05	10/11/05	A-01, J
Chromium			EPA 6010B	5J07101	0.30	1.0	17	1	10/07/05	10/14/05	
Cobalt			EPA 6010B	5J07101	0.30	1.0	4.8	1	10/07/05	10/14/05	
Copper			EPA 6020	5J07112	0.20	1.0	7.3	1	10/07/05	10/11/05	
Iron			EPA 6010B	5J07101	1.5	5.0	14000	1	10/07/05	10/14/05	
Lead			EPA 6020	5J07112	0.020	0.50	6.0	1	10/07/05	10/11/05	
Manganese			EPA 6010B	5J07101	0.81	1.0	220	1	10/07/05	10/14/05	
Mercury	U	X10	EPA 7471A	5J11102	0.0063	0.020	ND	1	10/11/05	10/12/05	
Nickel			EPA 6010B	5J07101	0.20	2.0	11	1	10/07/05	10/14/05	B
Selenium	X		EPA 6020	5J07112	0.20	1.0	0.26	1	10/07/05	10/11/05	J
Silver	U		EPA 6020	5J07112	0.020	0.50	ND	1	10/07/05	10/11/05	
Thallium	X		EPA 6020	5J07112	0.10	0.50	0.21	1	10/07/05	10/11/05	J
Vanadium			EPA 6010B	5J07101	0.30	1.0	28	1	10/07/05	10/14/05	
Zinc			EPA 6010B	5J07101	1.5	5.0	44	1	10/07/05	10/14/05	

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Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Alta
Reviewer E. Wessling
Analysis/Method Dioxins by 1613

Package ID T713DF7
Task Order 313150010
SDG No. IOJ0739
No. of Analyses 9
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	-- estimated maximum possible concentration interferences
GC/MS Tune/Inst. Performance	-- lack of confirmation analysis of 2,3,7,8-TCDF
Calibration	-- method blank contamination
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.

[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Surface Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IOJ0739

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ0739
Project Manager:	A. Lenox
Matrix:	Solid
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	9
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 20, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National Functional Guidelines For Chlorinated Dioxin/Furan Data Review* (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample Identification

EPA ID	MWH ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
CF-1-Soil	WL008	IOJ0739-01	26805-001	Soil	1613
CF-1-Ash	WL009	IOJ0739-02	26805-002	Ash	1613
PCC-1-Soil	WL010	IOJ0739-03	26805-003	Soil	1613
PCC-1-Ash	WL011	IOJ0739-04	26805-004	Ash	1613
WC-1-Ash	WL014	IOJ0739-05	26820-001	Ash	1613
WC-1-Soil	WL015	IOJ0739-06	26820-002	Soil	1613
CRP-1-Soil	WL007	IOJ0739-07	26826-001	Soil	1613
SC-1-Soil	WL012	IOJ0739-08	26826-002	Soil	1613
SC-1-Ash	WL013	IOJ0739-09	26826-003	Ash	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received within temperature limits of 4°C ±2°C. No qualifications were required. According to the case narrative and laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 6/06/2005. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

Three method blanks (Blanks 7348-0-MB001, 7368-0-MB001, and 7352-0-MB001) were extracted and analyzed with the samples in this SDG. No target or total compounds were reported in the method blanks 7348-0-MB001 or 7352-0-MB001. Target compound 1,2,3,4,6,7,8-HpDCF was detected in method blank 7368-0-MB001. Detects for target compounds ≤ five times the concentration reported in the method blank were qualified as estimated, "UJ," in the site samples WL013 and WL015. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three blank spikes (7348-0-OPR001, 7368-0-OPR001, and 7352-0-OPR001) were extracted and analyzed with the samples in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no identified field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No further qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." Confirmation for 2,3,7,8-TCDF detected in samples WL008, WL010, and WL007 was not performed; therefore, 2,3,7,8-TCDF was qualified as estimated, "J." No further qualifications were required.

ALTA

Sample ID: IOJ0739-01 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26805-001	Date Received:	14-Oct-05
Project:	IOJ0739	Sample Size:	11.43 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	7-Oct-05	%Solids:	85.3	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1330						

Low Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U		2,3,7,8-TCDD	ND	0.0676		
U		1,2,3,7,8-PeCDD	ND	0.0699		
U		1,2,3,4,7,8-HxCDD	ND	0.106		
J		1,2,3,6,7,8-HxCDD	0.178			J
J		1,2,3,7,8,9-HxCDD	0.148			J
J		1,2,3,4,6,7,8-HpCDD	1.06			J
		OCDD	5.59			
J	* 1	2,3,7,8-TCDF	0.381			J
U	x15	1,2,3,7,8-PeCDF	ND		0.157	
J		2,3,4,7,8-PeCDF	0.137			J
U		1,2,3,4,7,8-HxCDF	ND	0.0589		
J		1,2,3,6,7,8-HxCDF	0.102			J
U		2,3,4,6,7,8-HxCDF	ND	0.0616		
		1,2,3,7,8,9-HxCDF	ND	0.0820		
		1,2,3,4,6,7,8-HpCDF	ND	0.0986		
		1,2,3,4,7,8,9-HpCDF	ND	0.0750		
J		OCDF	0.331			J
		Totals				
		Total TCDD	0.464			
U		Total PeCDD	ND		0.257	
		Total HxCDD	1.23			
		Total HpCDD	2.16			
		Total TCDF	3.57		4.52	
		Total PeCDF	0.867		1.15	
		Total HxCDF	0.301			
		Total HpCDF	0.174			

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	79.5	25 - 164	
	13C-1,2,3,7,8-PeCDD	82.4	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	88.7	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	84.2	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	88.8	23 - 140	
	13C-OCDD	67.1	17 - 157	
	13C-2,3,7,8-TCDF	78.6	24 - 169	
	13C-1,2,3,7,8-PeCDF	79.2	24 - 185	
	13C-2,3,4,7,8-PeCDF	79.1	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	80.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	79.6	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	85.7	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	91.3	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	82.7	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	92.9	26 - 138	
	13C-OCDF	78.4	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	78.1	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.166

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 12:05

810

ALTA

Sample ID: IOJ0739-02

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26805-002	Date Received:	14-Oct-05
Project:	IOJ0739	Sample Size:	5.05 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	7-Oct-05	%Solids:	99.5	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1335						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.187		
	1,2,3,7,8-PeCDD	ND	0.154		
	1,2,3,4,7,8-HxCDD	ND	0.419		
	1,2,3,6,7,8-HxCDD	ND	0.421		
	1,2,3,7,8,9-HxCDD	ND	0.422		
J	1,2,3,4,6,7,8-HpCDD	0.581			J
J	OCDD	3.64			J
U	2,3,7,8-TCDF	ND	0.189		
	1,2,3,7,8-PeCDF	ND	0.231		
	2,3,4,7,8-PeCDF	ND	0.212		
J	1,2,3,4,7,8-HxCDF	0.110			J
U	1,2,3,6,7,8-HxCDF	ND	0.0717		
	2,3,4,6,7,8-HxCDF	ND	0.0764		
	1,2,3,7,8,9-HxCDF	ND	0.112		
	1,2,3,4,6,7,8-HpCDF	ND	0.107		
	1,2,3,4,7,8,9-HpCDF	ND	0.153		
	OCDF	ND	0.441		
	Totals				
U	Total TCDD	ND	0.187		
U	Total PeCDD	ND	0.154		
U	Total HxCDD	ND	0.421		
	Total HpCDD	0.581			
U	Total TCDF	ND	0.189		
U	Total PeCDF	ND	0.221		
	Total HxCDF	0.110			
U	Total HpCDF	ND	0.127		

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	72.5	25 - 164	
	13C-1,2,3,7,8-PeCDD	72.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	87.3	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	84.1	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	84.8	23 - 140	
	13C-OCDD	56.0	17 - 157	
	13C-2,3,7,8-TCDF	70.5	24 - 169	
	13C-1,2,3,7,8-PeCDF	69.2	24 - 185	
	13C-2,3,4,7,8-PeCDF	67.7	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	81.4	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	80.0	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	83.7	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	85.9	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	77.2	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	83.2	26 - 138	
	13C-OCDF	62.5	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	71.8	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0204

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 12:05

ALTA

Sample ID: IOJ0739-03

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26805-003	Date Received:	14-Oct-05
Project:	IOJ0739	Sample Size:	9.31 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	7-Oct-05	%Solids:	98.6	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1420						

Lab Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U		2,3,7,8-TCDD	ND	0.106		
		1,2,3,7,8-PeCDD	ND	0.106		
		1,2,3,4,7,8-HxCDD	ND	0.253		
		1,2,3,6,7,8-HxCDD	ND	0.259		
		1,2,3,7,8,9-HxCDD	ND	0.257		
J		1,2,3,4,6,7,8-HpCDD	0.355			J
J		OCDD	2.40			J
J		2,3,7,8-TCDF	0.151			J
U		1,2,3,7,8-PeCDF	ND	0.142		
		2,3,4,7,8-PeCDF	ND	0.131		
		1,2,3,4,7,8-HxCDF	ND	0.0561		
		1,2,3,6,7,8-HxCDF	ND	0.0510		
		2,3,4,6,7,8-HxCDF	ND	0.0596		
		1,2,3,7,8,9-HxCDF	ND	0.0875		
		1,2,3,4,6,7,8-HpCDF	ND	0.112		
		1,2,3,4,7,8,9-HpCDF	ND	0.138		
		OCDF	ND	0.358		
		Totals				
U		Total TCDD	ND	0.106		
U		Total PeCDD	ND	0.106		
U		Total HxCDD	ND	0.257		
		Total HpCDD	0.760			
		Total TCDF	0.387		0.813	
U		Total PeCDF	ND	0.136		
		Total HxCDF	0.123			
U		Total HpCDF	ND	0.124		

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	77.5	25 - 164	
	13C-1,2,3,7,8-PeCDD	75.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	85.6	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	85.8	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	83.8	23 - 140	
	13C-OCDD	63.5	17 - 157	
	13C-2,3,7,8-TCDF	73.9	24 - 169	
	13C-1,2,3,7,8-PeCDF	70.5	24 - 185	
	13C-2,3,4,7,8-PeCDF	68.1	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	81.7	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	79.4	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	84.5	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	85.9	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	77.0	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	82.6	26 - 138	
	13C-OCDF	67.8	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	74.4	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0210

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 12:05

ALTA

Sample ID: IOJ0739-04 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26805-004	Date Received:	14-Oct-05
Project:	IOJ0739	Sample Size:	4.33 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	7-Oct-05	%Solids:	99.2	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1425						

Lab Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U		2,3,7,8-TCDD	ND	0.249		
		1,2,3,7,8-PeCDD	ND	0.207		
		1,2,3,4,7,8-HxCDD	ND	0.404		
		1,2,3,6,7,8-HxCDD	ND	0.397		
		1,2,3,7,8,9-HxCDD	ND	0.402		
J		1,2,3,4,6,7,8-HpCDD	0.833			J
J		OCDD	2.33			J
U		2,3,7,8-TCDF	ND	0.199		
		1,2,3,7,8-PeCDF	ND	0.225		
		2,3,4,7,8-PeCDF	ND	0.191		
		1,2,3,4,7,8-HxCDF	ND	0.0880		
		1,2,3,6,7,8-HxCDF	ND	0.0836		
		2,3,4,6,7,8-HxCDF	ND	0.104		
		1,2,3,7,8,9-HxCDF	ND	0.130		
		1,2,3,4,6,7,8-HpCDF	ND	0.150		
		1,2,3,4,7,8,9-HpCDF	ND	0.174		
		OCDF	ND	0.504		
		Totals				
U		Total TCDD	ND	0.249		
U		Total PeCDD	ND	0.207		
		Total HxCDD	0.319			
		Total HpCDD	1.85			
U		Total TCDF	ND	0.199		
		Total PeCDF	ND	0.207		
		Total HxCDF	ND	0.0999		
		Total HpCDF	ND	0.160		

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	81.0	25 - 164	
	13C-1,2,3,7,8-PeCDD	75.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	88.5	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	87.7	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	86.5	23 - 140	
	13C-OCDD	59.6	17 - 157	
	13C-2,3,7,8-TCDF	75.5	24 - 169	
	13C-1,2,3,7,8-PeCDF	72.6	24 - 185	
	13C-2,3,4,7,8-PeCDF	71.6	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	83.2	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	82.0	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	86.5	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	90.3	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	79.7	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	85.2	26 - 138	
	13C-OCDF	69.1	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	79.1	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0107

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 12:05

ALTA

Sample ID: IOJ0739-05 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26820-001	Date Received:	19-Oct-05
Project:	IOJ0739	Sample Size:	10.02 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	10-Oct-05	%Solids:	97.3	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1145						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
J	~~K10~~ 2,3,7,8-TCDD	3.57			
	1,2,3,7,8-PeCDD	9.61			
	1,2,3,4,7,8-HxCDD	6.67			
	1,2,3,6,7,8-HxCDD	10.2			
	1,2,3,7,8,9-HxCDD	12.4			
	1,2,3,4,6,7,8-HpCDD	95.1			
	OCDD	232			
U	K12 2,3,7,8-TCDF	ND		0.173	
J	1,2,3,7,8-PeCDF	0.198			J
	2,3,4,7,8-PeCDF	0.306			J
	1,2,3,4,7,8-HxCDF	0.357			J
	1,2,3,6,7,8-HxCDF	0.379			J
	2,3,4,6,7,8-HxCDF	0.433			J
U	1,2,3,7,8,9-HxCDF	ND	0.307		
J	1,2,3,4,6,7,8-HpCDF	1.83			J
U	1,2,3,4,7,8,9-HpCDF	ND	0.220		
J	OCDF	2.28			J

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	85.8	25 - 164	
	13C-1,2,3,7,8-PeCDD	83.3	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	87.4	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	87.2	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	91.0	23 - 140	
	13C-OCDD	57.2	17 - 157	
	13C-2,3,7,8-TCDF	84.1	24 - 169	
	13C-1,2,3,7,8-PeCDF	83.7	24 - 185	
	13C-2,3,4,7,8-PeCDF	83.1	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	82.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	80.1	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	87.3	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	91.8	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	79.0	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	85.1	26 - 138	
	13C-OCDF	64.2	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	79.6	35 - 197	

Totals	
Total TCDD	74.5
Total PeCDD	117
Total HxCDD	196
Total HpCDD	253
Total TCDF	8.97
Total PeCDF	4.52
Total HxCDF	6.27
Total HpCDF	4.93

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 12.8

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 10:15

ALTA

Sample ID: IOJ0739-06

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26820-002	Date Received:	19-Oct-05
Project:	IOJ0739	Sample Size:	10.35 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	10-Oct-05	%Solids:	99.6	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1145						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND		0.179	
1,2,3,7,8-PeCDD	0.379			J
1,2,3,4,7,8-HxCDD	0.286			J
1,2,3,6,7,8-HxCDD	0.535			J
1,2,3,7,8,9-HxCDD	0.565			J
1,2,3,4,6,7,8-HpCDD	5.27			
OCDD	20.6			
2,3,7,8-TCDF	ND	0.0895		
1,2,3,7,8-PeCDF	ND	0.0934		
2,3,4,7,8-PeCDF	ND	0.0863		
1,2,3,4,7,8-HxCDF	ND	0.0598		
1,2,3,6,7,8-HxCDF	ND	0.0560		
2,3,4,6,7,8-HxCDF	ND	0.0630		
1,2,3,7,8,9-HxCDF	ND	0.0895		
1,2,3,4,6,7,8-HpCDF	ND	0.0661		
1,2,3,4,7,8,9-HpCDF	ND	0.0708		
OCDF	ND	0.413		
Totals				
Total TCDD	2.52		3.32	
Total PeCDD	3.66		4.48	
Total HxCDD	8.62			
Total HpCDD	13.4			
Total TCDF	ND		0.276	
Total PeCDF	0.124			
Total HxCDF	ND	0.0659		
Total HpCDF	ND	0.0680		

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	85.6	25 - 164	
	13C-1,2,3,7,8-PeCDD	87.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	88.5	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	82.9	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	89.8	23 - 140	
	13C-OCDD	60.9	17 - 157	
	13C-2,3,7,8-TCDF	79.7	24 - 169	
	13C-1,2,3,7,8-PeCDF	83.9	24 - 185	
	13C-2,3,4,7,8-PeCDF	82.0	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	82.2	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	80.4	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	86.2	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	89.0	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	74.1	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	88.1	26 - 138	
	13C-OCDF	67.6	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	82.5	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.402

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 10:15

ALTA

Sample ID: IOJ0739-07

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26826-001	Date Received:	20-Oct-05
Project:	IOJ0739	Sample Size:	9.95 g	QC Batch No.:	7368	Date Extracted:	30-Oct-05
Date Collected:	7-Oct-05	%Solids:	99.5	Date Analyzed DB-5:	1-Nov-05	Date Analyzed DB-225:	NA
Time Collected:	1215						

Raw Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U		2,3,7,8-TCDD	ND	0.185		
		1,2,3,7,8-PeCDD	ND	0.277		
		1,2,3,4,7,8-HxCDD	ND	0.164		
J		1,2,3,6,7,8-HxCDD	0.331			J
U		1,2,3,7,8,9-HxCDD	ND	0.155		
		1,2,3,4,6,7,8-HpCDD	3.41			
		OCDD	14.8			
J	*	2,3,7,8-TCDF	0.213			J
U		1,2,3,7,8-PeCDF	ND	0.231		
		2,3,4,7,8-PeCDF	ND	0.215		
		1,2,3,4,7,8-HxCDF	ND	0.119		
		1,2,3,6,7,8-HxCDF	ND	0.110		
		2,3,4,6,7,8-HxCDF	ND	0.128		
		1,2,3,7,8,9-HxCDF	ND	0.198		
UJ	B	1,2,3,4,6,7,8-HpCDF	0.360			J,B
U		1,2,3,4,7,8,9-HpCDF	ND	0.0951		
UJ	* 10	OCDF	ND		0.425	
		Totals				
		Total TCDD	0.519		0.801	
U		Total PeCDD	ND	0.277		
		Total HxCDD	3.07		3.22	
		Total HpCDD	7.32			
		Total TCDF	1.65			
U		Total PeCDF	ND		0.664	
		Total HxCDF	0.390			
		Total HpCDF	0.360		0.629	B

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	95.4	25 - 164	
	13C-1,2,3,7,8-PeCDD	102	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	97.0	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	88.5	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	82.3	23 - 140	
	13C-OCDD	54.7	17 - 157	
	13C-2,3,7,8-TCDF	85.4	24 - 169	
	13C-1,2,3,7,8-PeCDF	101	24 - 185	
	13C-2,3,4,7,8-PeCDF	98.3	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	102	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	105	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	101	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	97.8	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	89.5	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	91.6	26 - 138	
	13C-OCDF	65.4	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	96.6	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): **0.107**

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 02-Nov-2005 10:17

1427

ALTA

Sample ID: IOJ0739-08 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26826-002	Date Received:	20-Oct-05
Project:	IOJ0739	Sample Size:	10.25 g	QC Batch No.:	7368	Date Extracted:	30-Oct-05
Date Collected:	10-Oct-05	%Solids:	98.9	Date Analyzed DB-5:	2-Nov-05	Date Analyzed DB-225:	NA
Time Collected:	1041						

Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U		2,3,7,8-TCDD	ND	0.129		
		1,2,3,7,8-PeCDD	ND	0.108		
		1,2,3,4,7,8-HxCDD	ND	0.204		
		1,2,3,6,7,8-HxCDD	ND	0.201		
		1,2,3,7,8,9-HxCDD	ND	0.191		
J		1,2,3,4,6,7,8-HpCDD	0.957			J
		OCDD	5.91			
UJ	* 10	2,3,7,8-TCDF	ND		0.130	
U		1,2,3,7,8-PeCDF	ND	0.149		
		2,3,4,7,8-PeCDF	ND	0.141		
		1,2,3,4,7,8-HxCDF	ND	0.0555		
		1,2,3,6,7,8-HxCDF	ND	0.0517		
		2,3,4,6,7,8-HxCDF	ND	0.0564		
		1,2,3,7,8,9-HxCDF	ND	0.0893		
UJ	* 10	1,2,3,4,6,7,8-HpCDF	ND		0.234	
U		1,2,3,4,7,8,9-HpCDF	ND	0.0859		
U		OCDF	ND	0.545		
		Totals				
U		Total TCDD	ND	0.129		
U		Total PeCDD	ND	0.108		
		Total HxCDD	0.250			
		Total HpCDD	2.31			
U		Total TCDF	ND		0.130	
U		Total PeCDF	ND		0.493	
		Total HxCDF	0.551		0.639	
U		Total HpCDF	ND		0.553	

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	90.0	25 - 164	
	13C-1,2,3,7,8-PeCDD	96.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	95.6	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	87.7	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	81.8	23 - 140	
	13C-OCDD	55.1	17 - 157	
	13C-2,3,7,8-TCDF	83.8	24 - 169	
	13C-1,2,3,7,8-PeCDF	98.1	24 - 185	
	13C-2,3,4,7,8-PeCDF	94.0	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	102	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	104	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	102	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	98.0	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	86.5	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	90.9	26 - 138	
	13C-OCDF	67.2	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	98.1	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): **0.0155**

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 02-Nov-2005 10:17

1428

ALTA

Sample ID: IOJ0739-09 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26826-003	Date Received:	20-Oct-05
Project:	IOJ0739	Sample Size:	10.07 g	QC Batch No.:	7368	Date Extracted:	30-Oct-05
Date Collected:	10-Oct-05	%Solids:	100	Date Analyzed DB-5:	2-Nov-05	Date Analyzed DB-225:	NA
Time Collected:	1055						

Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.208		
	1,2,3,7,8-PeCDD	ND	0.227		
	1,2,3,4,7,8-HxCDD	ND	0.174		
	1,2,3,6,7,8-HxCDD	ND	0.367		
UJ *10	1,2,3,7,8,9-HxCDD	ND		0.266	
	1,2,3,4,6,7,8-HpCDD	2.88			
	OCDD	13.6			
U	2,3,7,8-TCDF	ND	0.162		
	1,2,3,7,8-PeCDF	ND	0.277		
	2,3,4,7,8-PeCDF	ND	0.248		
	1,2,3,4,7,8-HxCDF	ND	0.115		
	1,2,3,6,7,8-HxCDF	ND	0.107		
	2,3,4,6,7,8-HxCDF	ND	0.126		
	1,2,3,7,8,9-HxCDF	ND	0.195		
UJ B	1,2,3,4,6,7,8-HpCDF	0.412			J,B
U	1,2,3,4,7,8,9-HpCDF	ND	0.0675		
UJ *10	OCDF	ND		0.709	

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	88.1	25 - 164	
	13C-1,2,3,7,8-PeCDD	93.2	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	94.1	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	85.3	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	78.9	23 - 140	
	13C-OCDD	55.7	17 - 157	
	13C-2,3,7,8-TCDF	79.8	24 - 169	
	13C-1,2,3,7,8-PeCDF	92.0	24 - 185	
	13C-2,3,4,7,8-PeCDF	89.7	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	100	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	102	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	98.0	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	96.9	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	90.0	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	87.6	26 - 138	
	13C-OCDF	66.7	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	92.2	35 - 197	

Totals			
Total TCDD	0.408		
Total PeCDD	0.607	0.901	
Total HxCDD	2.47	2.73	
Total HpCDD	6.38		
Total TCDF	1.14	1.35	
Total PeCDF	0.300	0.766	
Total HxCDF	0.230	0.626	
Total HpCDF	0.840		B

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0465

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH

Approved By: Martha M. Maier 02-Nov-2005 10:17

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T713DF5
Task Order 313150010
SDG No. IOJ1120
No. of Analyses 2

Laboratory Alta
Reviewer E. Wessling
Analysis/Method Dioxins by 1613

Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
	-- estimated maximum possible concentration interferences
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Surface Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IOJ1120

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ120
Project Manager:	A. Lenox
Matrix:	Solid
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 20, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National Functional Guidelines For Chlorinated Dioxin/Furan Data Review* (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample Identification

EPA ID	MWH ID	Laboratory ID (Del Mar)	Laboratory ID (Pace)	Matrix	COC Method
WL022	SMM-1-Soil	IOJ1120-01	26819-001	Soil	1613
WL023	SMM-1-Ash	IOJ1120-02	26819-002	Ash	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received within temperature limits of 4°C ±2°C. No qualifications were required. According to the case narrative and laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 6/06/2005. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

One method blank (Blank 7352-0-MB001) was extracted and analyzed with the samples in this SDG. No target or total compounds were reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (7352-0-OPR001) was extracted and analyzed with the samples in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no identified field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No further qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." No further qualifications were required.

ALTA

Sample ID: IOJ1120-01

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26819-001	Date Received:	19-Oct-05
Project:	IOJ1120	Sample Size:	10.37 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	13-Oct-05	%Solids:	98.9	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1636						

Rev Qual	Qual code	Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
U		2,3,7,8-TCDD	ND	0.107		
↓		1,2,3,7,8-PeCDD	ND	0.0887		
↓		1,2,3,4,7,8-HxCDD	ND	0.286		
J		1,2,3,6,7,8-HxCDD	0.145			J
U		1,2,3,7,8,9-HxCDD	ND	0.274		
J		1,2,3,4,6,7,8-HpCDD	1.40			J
		OCDD	8.65			
U		2,3,7,8-TCDF	ND	0.109		
↓		1,2,3,7,8-PeCDF	ND	0.145		
↓		2,3,4,7,8-PeCDF	ND	0.125		
J		1,2,3,4,7,8-HxCDF	0.0790			J
U		1,2,3,6,7,8-HxCDF	ND	0.0674		
UJ	*10	2,3,4,6,7,8-HxCDF	ND		0.0630	
U		1,2,3,7,8,9-HxCDF	ND	0.101		
UJ	*10	1,2,3,4,6,7,8-HpCDF	ND		0.244	
U		1,2,3,4,7,8,9-HpCDF	ND	0.139		
U		OCDF	ND	0.527		
		Totals				
U		Total TCDD	ND	0.107		
U		Total PeCDD	ND		0.133	
		Total HxCDD	0.942			
		Total HpCDD	3.01			
		Total TCDF	0.287			
		Total PeCDF	0.119			
		Total HxCDF	0.251		0.464	
U		Total HpCDF	ND		0.491	

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	79.3	25 - 164	
	13C-1,2,3,7,8-PeCDD	78.3	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	84.4	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	81.8	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	86.1	23 - 140	
	13C-OCDD	65.3	17 - 157	
	13C-2,3,7,8-TCDF	78.0	24 - 169	
	13C-1,2,3,7,8-PeCDF	76.7	24 - 185	
	13C-2,3,4,7,8-PeCDF	76.7	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	75.9	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	75.4	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	81.9	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	87.1	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	76.8	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	86.6	26 - 138	
	13C-OCDF	74.4	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	80.0	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0450

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 10:49

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ALTA

Sample ID: IOJ1120-02

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26819-002	Date Received:	19-Oct-05
Project:	IOJ1120	Sample Size:	10.08 g	QC Batch No.:	7352	Date Extracted:	26-Oct-05
Date Collected:	13-Oct-05	%Solids:	98.0	Date Analyzed DB-5:	30-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1646						

Qual code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
U	2,3,7,8-TCDD	ND	0.141		
	1,2,3,7,8-PeCDD	ND	0.110		
	1,2,3,4,7,8-HxCDD	ND	0.242		
	1,2,3,6,7,8-HxCDD	ND	0.263		
	1,2,3,7,8,9-HxCDD	ND	0.254		
J	1,2,3,4,6,7,8-HpCDD	1.97			J
	OCDD	9.52			
U	2,3,7,8-TCDF	ND	0.112		
	1,2,3,7,8-PeCDF	ND	0.159		
	2,3,4,7,8-PeCDF	ND	0.139		
	1,2,3,4,7,8-HxCDF	ND	0.0687		
	1,2,3,6,7,8-HxCDF	ND	0.0654		
	2,3,4,6,7,8-HxCDF	ND	0.0698		
	1,2,3,7,8,9-HxCDF	ND	0.101		
	1,2,3,4,6,7,8-HpCDF	ND	0.0913		
	1,2,3,4,7,8,9-HpCDF	ND	0.109		
	OCDF	ND	0.470		

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	83.3	25 - 164	
	13C-1,2,3,7,8-PeCDD	81.6	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	82.7	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	78.0	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	85.1	23 - 140	
	13C-OCDD	60.4	17 - 157	
	13C-2,3,7,8-TCDF	75.9	24 - 169	
	13C-1,2,3,7,8-PeCDF	75.7	24 - 185	
	13C-2,3,4,7,8-PeCDF	75.3	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	74.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	73.8	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	80.2	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	84.7	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	72.3	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	84.5	26 - 138	
	13C-OCDF	67.1	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	83.3	35 - 197	

Totals				
Total TCDD	0.179			
U Total PeCDD	ND		0.121	
Total HxCDD	0.966			
Total HpCDD	3.72			
U Total TCDF	ND	0.112		
Total PeCDF	ND	0.148		
Total HxCDF	ND		0.0755	
Total HpCDF	ND	0.0994		

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0292

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By: Martha M. Maier 02-Nov-2005 10:49

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Alta
Reviewer E. Wessling
Analysis/Method Dioxins by 1613

Package ID T713DF3
Task Order 313150010
SDG No. IOJ0411
No. of Analyses 5
Date: December 20, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
Holding Times	--Blank contamination
GC/MS Tune/Inst. Performance	--estimated maximum possible concentration interferences
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

Topanga Fire Surface Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IOJ0411

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ0411
Project Manager:	A. Lenox
Matrix:	Solid
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	December 20, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National Functional Guidelines For Chlorinated Dioxin/Furan Data Review* (8/02). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample Identification

EPA ID	MWH ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
WL001	Upstream001 Ash	IOJ0411-01	26782-001	Ash	1613
WL002	Upstream001 Soil	IOJ0411-02	26782-002	Soil	1613
WL004	Upstream002	IOJ0411-04	26782-003	Soil	1613
WL005	Upstream002	IOJ0411-05	26782-004	Ash	1613
WL006	RP-1	IOJ0411-06	26782-005	Soil	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits of 4°C ±2°C at 1.6°C. The samples were not qualified as solid dioxin samples may be frozen for up to one year prior to analysis. According to the case narrative and laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 6/06/2005. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

One method blank (Blank 7234-0-MB001) was extracted and analyzed with the samples in this SDG. Two compounds, 1,2,3,4,7,8-HxCDF and total HXCDF were reported in the method blank. Detects for target compounds ≤ five times the concentration reported in the method blank were qualified as estimated, "UJ," in the site samples of this SDG. Detects for total dioxin and furan isomers at concentrations ≤ five times the concentration reported in the method blank were qualified as estimated, "UJ," in the associated samples. In instances where the total concentration included peaks not present in the method blank as well as the method blank contamination, the total concentration was considered estimated, "J," as a portion of the total concentration was considered blank contamination. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (7234-0-OPR001) was extracted and analyzed with the samples in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no identified field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No further qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." No further qualifications were required.

ALTA

Sample ID: IOJ0411-01 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26782-001	Date Received:	8-Oct-05
Project:	IOJ0411	Sample Size:	9.89 g	QC Batch No.:	7324	Date Extracted:	14-Oct-05
Date Collected:	6-Oct-05	%Solids:	100	Date Analyzed DB-5:	17-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1125						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
2,3,7,8-TCDD	ND	0.155			IS 13C-2,3,7,8-TCDD	74.3	25 - 164	
1,2,3,7,8-PeCDD	0.235			J	13C-1,2,3,7,8-PeCDD	91.6	25 - 181	
1,2,3,4,7,8-HxCDD	0.129			J	13C-1,2,3,4,7,8-HxCDD	80.4	32 - 141	
1,2,3,6,7,8-HxCDD	0.264			J	13C-1,2,3,6,7,8-HxCDD	81.5	28 - 130	
1,2,3,7,8,9-HxCDD	0.262			J	13C-1,2,3,4,6,7,8-HpCDD	77.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	2.33			J	13C-OCDD	54.7	17 - 157	
OCDD	10.4				13C-2,3,7,8-TCDF	71.0	24 - 169	
2,3,7,8-TCDF	0.361			J	13C-1,2,3,7,8-PeCDF	98.1	24 - 185	
1,2,3,7,8-PeCDF	ND		0.0948		13C-2,3,4,7,8-PeCDF	100	21 - 178	
2,3,4,7,8-PeCDF	0.173			J	13C-1,2,3,4,7,8-HxCDF	73.2	26 - 152	
1,2,3,4,7,8-HxCDF	0.101			J,B	13C-1,2,3,6,7,8-HxCDF	81.6	26 - 123	
1,2,3,6,7,8-HxCDF	ND		0.0777		13C-2,3,4,6,7,8-HxCDF	80.3	28 - 136	
2,3,4,6,7,8-HxCDF	0.0883			J	13C-1,2,3,7,8,9-HxCDF	84.6	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.0707			13C-1,2,3,4,6,7,8-HpCDF	70.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.365			J	13C-1,2,3,4,7,8,9-HpCDF	80.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.118			13C-OCDF	62.3	17 - 157	
OCDF	ND		0.499		CRS 37Cl-2,3,7,8-TCDD	78.8	35 - 197	

Totals			
Total TCDD	1.04	1.57	
Total PeCDD	2.72	2.92	
Total HxCDD	4.84		
Total HpCDD	5.73		
Total TCDF	1.69	1.99	
Total PeCDF	0.727	0.897	
Total HxCDF	0.281	0.775	B
Total HpCDF	0.629		

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.362

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: MAS

Approved By: William J. Luksemburg 18-Oct-2005 08:40

ALTA

Sample ID: IOJ0411-02 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26782-002	Date Received:	8-Oct-05
Project:	IOJ0411	Sample Size:	10.09 g	QC Batch No.:	7324	Date Extracted:	14-Oct-05
Date Collected:	6-Oct-05	%Solids:	99.3	Date Analyzed DB-5:	17-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1125						

Lab Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
U		2,3,7,8-TCDD	ND	0.133			IS 13C-2,3,7,8-TCDD	77.7	25 - 164	
U		1,2,3,7,8-PeCDD	ND	0.149			13C-1,2,3,7,8-PeCDD	91.0	25 - 181	
U		1,2,3,4,7,8-HxCDD	ND	0.138			13C-1,2,3,4,7,8-HxCDD	82.3	32 - 141	
J		1,2,3,6,7,8-HxCDD	0.159			J	13C-1,2,3,6,7,8-HxCDD	82.4	28 - 130	
J	* 10	1,2,3,7,8,9-HxCDD	ND		0.133		13C-1,2,3,4,6,7,8-HpCDD	78.3	23 - 140	
		1,2,3,4,6,7,8-HpCDD	2.71				13C-OCDD	62.0	17 - 157	
		OCDD	18.9				13C-2,3,7,8-TCDF	72.7	24 - 169	
U		2,3,7,8-TCDF	ND	0.112			13C-1,2,3,7,8-PeCDF	105	24 - 185	
		1,2,3,7,8-PeCDF	ND	0.0886			13C-2,3,4,7,8-PeCDF	104	21 - 178	
		2,3,4,7,8-PeCDF	ND	0.0805			13C-1,2,3,4,7,8-HxCDF	74.2	26 - 152	
		1,2,3,4,7,8-HxCDF	ND	0.126			13C-1,2,3,6,7,8-HxCDF	88.2	26 - 123	
		1,2,3,6,7,8-HxCDF	ND	0.0945			13C-2,3,4,6,7,8-HxCDF	83.1	28 - 136	
		2,3,4,6,7,8-HxCDF	ND	0.126			13C-1,2,3,7,8,9-HxCDF	84.3	29 - 147	
		1,2,3,7,8,9-HxCDF	ND	0.0694			13C-1,2,3,4,6,7,8-HpCDF	70.2	28 - 143	
		1,2,3,4,6,7,8-HpCDF	0.431			J	13C-1,2,3,4,7,8,9-HpCDF	82.2	26 - 138	
		1,2,3,4,7,8,9-HpCDF	ND	0.123			13C-OCDF	68.4	17 - 157	
		OCDF	0.980			J	CRS 37Cl-2,3,7,8-TCDD	79.4	35 - 197	

Totals			
Total TCDD	ND	0.123	
Total PeCDD	1.00	1.35	
Total HxCDD	2.67	2.94	
Total HpCDD	8.14		
Total TCDF	0.211		
Total PeCDF	0.188	0.302	
Total HxCDF	0.651		B
Total HpCDF	1.34		

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): **0.0672**

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: MAS

Approved By: William J. Luksemburg 18-Oct-2005 08:40

ALTA

Sample ID: IOJ0411-04 — **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26782-003	Date Received:	8-Oct-05
Project:	IOJ0411	Sample Size:	10.31 g	QC Batch No.:	7324	Date Extracted:	14-Oct-05
Date Collected:	6-Oct-05	%Solids:	97.5	Date Analyzed DB-5:	17-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1220						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.151		
1,2,3,7,8-PeCDD	ND		0.0947	
1,2,3,4,7,8-HxCDD	ND	0.158		
1,2,3,6,7,8-HxCDD	0.207			J
1,2,3,7,8,9-HxCDD	0.245			J
1,2,3,4,6,7,8-HpCDD	2.46			J
OCDD	18.3			
2,3,7,8-TCDF	ND	0.109		
1,2,3,7,8-PeCDF	ND	0.0709		
2,3,4,7,8-PeCDF	0.0852			J
1,2,3,4,7,8-HxCDF	ND		0.0823	
1,2,3,6,7,8-HxCDF	ND		0.0719	
2,3,4,6,7,8-HxCDF	0.0752			J
1,2,3,7,8,9-HxCDF	ND	0.0790		
1,2,3,4,6,7,8-HpCDF	0.324			J
1,2,3,4,7,8,9-HpCDF	ND	0.0838		
OCDF	0.590			J

Totals			
Total TCDD	0.107	0.286	
Total PeCDD	1.45	1.85	
Total HxCDD	3.55	3.69	
Total HpCDD	6.59		
Total TCDF	0.375		
Total PeCDF	0.462		
Total HxCDF	0.566	0.720	B
Total HpCDF	0.727		

Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS 13C-2,3,7,8-TCDD	76.4	25 - 164	
13C-1,2,3,7,8-PeCDD	97.7	25 - 181	
13C-1,2,3,4,7,8-HxCDD	88.4	32 - 141	
13C-1,2,3,6,7,8-HxCDD	82.5	28 - 130	
13C-1,2,3,4,6,7,8-HpCDD	80.1	23 - 140	
13C-OCDD	60.0	17 - 157	
13C-2,3,7,8-TCDF	72.9	24 - 169	
13C-1,2,3,7,8-PeCDF	103	24 - 185	
13C-2,3,4,7,8-PeCDF	107	21 - 178	
13C-1,2,3,4,7,8-HxCDF	76.8	26 - 152	
13C-1,2,3,6,7,8-HxCDF	85.1	26 - 123	
13C-2,3,4,6,7,8-HxCDF	83.0	28 - 136	
13C-1,2,3,7,8,9-HxCDF	85.0	29 - 147	
13C-1,2,3,4,6,7,8-HpCDF	68.5	28 - 143	
13C-1,2,3,4,7,8,9-HpCDF	84.1	26 - 138	
13C-OCDF	68.1	17 - 157	
CRS 37Cl-2,3,7,8-TCDD	78.3	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.142

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: MAS

Approved By: William J. Luksemburg 18-Oct-2005 08:40

ALTA

Sample ID: IOJ0411-05 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26782-004	Date Received:	8-Oct-05
Project:	IOJ0411	Sample Size:	10.08 g	QC Batch No.:	7324	Date Extracted:	14-Oct-05
Date Collected:	6-Oct-05	%Solids:	99.2	Date Analyzed DB-5:	17-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1228						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
2,3,7,8-TCDD	0.303			J	IS 13C-2,3,7,8-TCDD	76.0	25 - 164	
1,2,3,7,8-PeCDD	1.02			J	13C-1,2,3,7,8-PeCDD	94.1	25 - 181	
1,2,3,4,7,8-HxCDD	0.846			J	13C-1,2,3,4,7,8-HxCDD	84.0	32 - 141	
1,2,3,6,7,8-HxCDD	2.11			J	13C-1,2,3,6,7,8-HxCDD	80.8	28 - 130	
1,2,3,7,8,9-HxCDD	1.60			J	13C-1,2,3,4,6,7,8-HpCDD	80.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	48.5				13C-OCDD	63.2	17 - 157	
OCDD	230				13C-2,3,7,8-TCDF	73.9	24 - 169	
2,3,7,8-TCDF	ND		0.165		13C-1,2,3,7,8-PeCDF	106	24 - 185	
1,2,3,7,8-PeCDF	0.209			J	13C-2,3,4,7,8-PeCDF	109	21 - 178	
2,3,4,7,8-PeCDF	ND		0.231		13C-1,2,3,4,7,8-HxCDF	77.1	26 - 152	
1,2,3,4,7,8-HxCDF	0.286			J,B	13C-1,2,3,6,7,8-HxCDF	87.0	26 - 123	
1,2,3,6,7,8-HxCDF	0.243			J	13C-2,3,4,6,7,8-HxCDF	82.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND		0.265		13C-1,2,3,7,8,9-HxCDF	83.8	29 - 147	
1,2,3,7,8,9-HxCDF	0.125			J	13C-1,2,3,4,6,7,8-HpCDF	73.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	1.65			J	13C-1,2,3,4,7,8,9-HpCDF	86.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND		0.167		13C-OCDF	69.8	17 - 157	
OCDF	4.63			J	CRS 37Cl-2,3,7,8-TCDD	76.6	35 - 197	

Totals			
Total TCDD	10.7	10.8	
Total PeCDD	18.1		
Total HxCDD	33.7		
Total HpCDD	98.2		
Total TCDF	3.99	4.49	
Total PeCDF	3.40	3.79	
Total HxCDF	3.13	3.39	B
Total HpCDF	4.25	4.42	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 2.08

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: MAS

Approved By: William J. Luksemburg 18-Oct-2005 10:25

ALTA

Sample ID:	IOJ0411-06							EPA Method 1613
Client Data		**Sample Data**		**Laboratory Data**				
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26782-005	Date Received:	8-Oct-05	
Project:	IOJ0411	Sample Size:	10.11 g	QC Batch No.:	7324	Date Extracted:	14-Oct-05	
Date Collected:	6-Oct-05	%Solids:	99.6	Date Analyzed DB-5:	17-Oct-05	Date Analyzed DB-225:	NA	
Time Collected:	1554							

Per Qual	Qual code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers		Labeled Standard	%R	LCL-UCL [d]	Qualifiers
U		2,3,7,8-TCDD	ND	0.0609			IS	13C-2,3,7,8-TCDD	81.2	25 - 164	
U		1,2,3,7,8-PeCDD	ND	0.0869				13C-1,2,3,7,8-PeCDD	99.7	25 - 181	
U		1,2,3,4,7,8-HxCDD	ND	0.0826				13C-1,2,3,4,7,8-HxCDD	86.7	32 - 141	
J		1,2,3,6,7,8-HxCDD	0.221			J		13C-1,2,3,6,7,8-HxCDD	79.9	28 - 130	
J		1,2,3,7,8,9-HxCDD	0.232			J		13C-1,2,3,4,6,7,8-HpCDD	81.9	23 - 140	
J		1,2,3,4,6,7,8-HpCDD	0.694			J		13C-OCDD	61.1	17 - 157	
J		OCDD	4.81			J		13C-2,3,7,8-TCDF	74.3	24 - 169	
U		2,3,7,8-TCDF	ND	0.0791				13C-1,2,3,7,8-PeCDF	96.1	24 - 185	
U		1,2,3,7,8-PeCDF	ND	0.0942				13C-2,3,4,7,8-PeCDF	100	21 - 178	
U		2,3,4,7,8-PeCDF	ND	0.0830				13C-1,2,3,4,7,8-HxCDF	80.3	26 - 152	
U		1,2,3,4,7,8-HxCDF	ND	0.0492				13C-1,2,3,6,7,8-HxCDF	85.8	26 - 123	
J		1,2,3,6,7,8-HxCDF	0.0668			J		13C-2,3,4,6,7,8-HxCDF	85.2	28 - 136	
U		2,3,4,6,7,8-HxCDF	ND	0.0516				13C-1,2,3,7,8,9-HxCDF	88.0	29 - 147	
U		1,2,3,7,8,9-HxCDF	ND	0.0433				13C-1,2,3,4,6,7,8-HpCDF	73.1	28 - 143	
UJ	* 10	1,2,3,4,6,7,8-HpCDF	ND		0.182			13C-1,2,3,4,7,8,9-HpCDF	87.4	26 - 138	
U		1,2,3,4,7,8,9-HpCDF	ND	0.0614				13C-OCDF	68.1	17 - 157	
U		OCDF	ND	0.595			CRS	37Cl-2,3,7,8-TCDD	85.1	35 - 197	

		Totals					Toxic Equivalent Quotient (TEQ) Data [e]
U		Total TCDD	ND	0.0609			TEQ (Min): 0.0637
U		Total PeCDD	ND	0.0869			
		Total HxCDD	0.602		0.795		a. Sample specific estimated detection limit.
		Total HpCDD	1.50				b. Estimated maximum possible concentration.
U		Total TCDF	ND	0.0791			c. Method detection limit.
		Total PeCDF	0.0916				d. Lower control limit - upper control limit.
J	B	Total HxCDF	0.176			B	e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).
U		Total HpCDF	ND		0.182		

Analyst: MAS

Approved By: William J. Luksemburg 18-Oct-2005 08:40

36

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T713WC6
Task Order 313150010
SDG No. Multiple
No. of Analyses 4

Laboratory Del Mar Analytical - Irvine
Reviewer E. Wessling
Analysis/Method General Minerals

Date: December 7, 2005
Reviewer's Signature

ACTION ITEMS[a]	
. **Case Narrative Deficiencies**	
2. **Out of Scope Analyses**	
3. **Analyses Not Conducted**	
4. **Missing Hardcopy Deliverables**	
5. **Incorrect Hardcopy Deliverables**	
6. **Deviations from Analysis Protocol, e.g.,**	Qualifications were assigned for the following:
	-- J values annotated as DNQ per the permit requirements
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	

COMMENTS[b]

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOJ1234, IOJ1235, IOJ1236, IOJ1337

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
Sample Delivery Group #:	IOJ1234, IOJ1235, IOJ1236, and IOJ1337
Project Manager:	P. Costa
Matrix:	Water
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	4
Reviewer:	E. Wessling
Date of Review:	December 6, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 413.1, 300.0, and 160.2, Standard Methods for the Examination of Water and Wastewater Method SM2540C*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
PCC-1	WL034	IOJ1234-01	Water	General Minerals
CF-1	WL033	IOJ1235-01	Water	General Minerals
SSM-1	WL032	IOJ1236-01	Water	General Minerals
WC-1	WL035	IOJ1337-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at the laboratory within the temperature limits of 4°C ± 2°C with the exception of with the exception of WC-1 that was received at 17°C. As the samples were couriered directly from the site to the laboratory, this sampled did not have sufficient time to cool. No preservation problems were noted by the laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel and accounted for the samples and all analyses presented in these SDGs. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analysis. The analytical holding times for total cyanide and MBAS were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995. Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. No qualifications were required.

2.3 BLANKS

Neither MBAS nor total cyanide was detected in the three associated method blanks, (5J21096-BLK1, 5J24085-BKL1 or 5J19122-BLK1). Raw data was reviewed to verify the blank data. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample (MBAS and total cyanide) recoveries were within the laboratory-established control limits. Raw data was reviewed to verify the values reported for the LCS recoveries. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Results reported by the laboratory between the MDL and reporting limit were qualified as "J" values with the annotation of "DNQ" in accordance with the requirements of the NPDES permit. No further qualifications were required.

2.11 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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MWH-Pasadena/Boeing	Project ID:	Offsite Storm Water Samples	
300 North Lake Avenue, Suite 1200		Palo Comado Canyon	Sampled: 10/18/05
Pasadena, CA 91101	Report Number:	1OJ1234	Received: 10/18/05
Attention: Bronwyn Kelly			

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: 1OJ1234-01 (WL034 - Water) - cont.											
Reporting Units: mg/l											
Total Cyanide	EPA 335.2	5J21096	0.0022	0.0050	**0.0061**	1	10/21/05	10/21/05			
Surfactants (MBAS)	SM5540-C	5J19122	0.044	0.10	**0.16**	1	10/19/05	10/19/05			

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-Pasadena/Boeing	Project ID:	Offsite Storm Water Samples	
300 North Lake Avenue, Suite 1200		China Flat	Sampled: 10/18/05
Pasadena, CA 91101	Report Number:	IOJ1235	Received: 10/18/05
Attention: Bronwyn Kelly			

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOJ1235-01 (WL033 - Water) - cont.									Key Qual / Qual Code
Reporting Units: mg/l									
Total Cyanide	EPA 335.2	5J21096	0.0022	0.0050	**0.0058**	1	10/21/05	10/21/05	
Surfactants (MBAS)	SM5540-C	5J19122	0.044	0.10	**0.24**	1	10/19/05	10/19/05	

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Santa Susana Mts
Report Number: IOJ1236

Sampled: 10/18/05
Received: 10/18/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rep Qual	Qual Code
Sample ID: IOJ1236-01 (WL032 - Water) - cont.											
Reporting Units: mg/l											
Total Cyanide	EPA 335.2	5J21096	0.0022	0.0050	**0.0064**	1	10/21/05	10/21/05			
Surfactants (MBAS)	SM5540-C	5J19122	0.22	0.50	**0.24**	5	10/19/05	10/19/05	RL-1, J	J	DNQ

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MWH-Pasadena/Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Offsite Storm Water Samples
Wildwood Canyon
Report Number: IOJ1337

Sampled: 10/18/05
Received: 10/19/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual code
Sample ID: IOJ1337-01 (WL035 - Water) - cont.											
Reporting Units: mg/l											
Total Cyanide	EPA 335.2	5J24085	0.0022	0.0050	**0.0046**	1	10/24/05	10/24/05	J	J	DNQ
Surfactants (MBAS)	SM5540-C	5J19122	0.044	0.10	**0.11**	1	10/19/05	10/19/05			

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Project Manager

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