Report

Group 1B – Southern Portion of Area I RCRA Facility Investigation Report Santa Susana Field Laboratory, Ventura County, California

Volume III

Appendix D
Area I Burn Pit RFI Site Report

Prepared for:

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Contents

Section Page

Tables

Figures

Attachments

Acronyms and Abbreviations

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
AIBP	Area I Burn Pit
AOC	Area of Concern
APTF	Advanced Propulsion Test Facility RFI Site
AST	aboveground storage tank
bgs	below ground surface
BMP	best management practice
Boeing	The Boeing Company
BTEX	benzene, toluene, ethylbenzene and xylenes
Cal-EPA	California Environmental Protection Agency
CCR	Current Conditions Report
CF	Chatsworth Formation
CFOU	Chatsworth Formation Operable Unit
CMS	Corrective Measures Study
COC	chemical of concern
COEC	chemical of ecological concern
COPC	chemical of potential concern
CPEC	chemical of potential ecological concern
CSM	conceptual site model
CTE	Central Tendency Exposure
CTL-III	Component Test Laboratory-III RFI Site
CTL-V	Component Test Laboratory-V RFI Site
DCA	dichloroethane
DCE	dichloroethene
DHS	California Department of Health Services
DOE	United States Department of Energy
DQO	data quality objective
DTSC	Department of Toxic Substances Control
ELCR	excess lifetime cancer risk

EPA Ag PRG	United States Environmental Protection Agency Agriculture Preliminary Remediation Goal
EPC	exposure point concentration
ERA	ecological risk assessment
ESL	Ecological Screening Level
ETEC	Energy Technology Engineering Center
ft msl	feet above mean sea level
ft/ft	feet per foot
GWS	gamma walkover survey
HAR	Hydrogeologic Assessment Report
HI	hazard index
HMX	cyclotetramethylene-tetranitramine
HQ	hazard quotient
HRA	human health risk assessment
IEL	Instrument and Equipment Laboratories
ILCR	incremental lifetime cancer risk
LARWQCB	Los Angeles Regional Water Quality Control Board
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter
NA	not applicable
ND	not detected
NDMA	N-nitrosodimethylamine
NFA	no further action
NORM	naturally occurring radioactive material
NPDES	National Pollutant Discharge Elimination System
NSGW	near-surface groundwater
OU	operable unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
pCi/g	picocuries per gram

pg/g	picograms per gram
PP	Perimeter Pond
ppb	parts per billion (µg/kg or µg/L)
ppm	parts per million (mg/kg or mg/L)
PRG	preliminary remediation goal
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RA	risk assessment
RBSL	risk-based screening level
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RME	reasonable maximum exposure
Rocketdyne	Rocketdyne Propulsion and Power
RP1	Rocket Propellant 1 (refined kerosene)
RWQCB	Los Angeles Regional Water Quality Control Board
SMOU	Surficial Media Operable Unit
SOP	Standard Operating Procedure
SRAM	Standardized Risk Assessment Methodology
SSFL	Santa Susana Field Laboratory
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TCA	trichlorethane
TCDD-TEQ	2,3,7,8-tetrachlorodibenzodioxin toxicity equivalency quotient
TCE	trichloroethene
TDS	total dissolved solids
TEA	triethylaluminum
TEB	triethylboron
TEQ	toxicity equivalency quotient
TIC	tentatively identified compound
TPH	total petroleum hydrocarbons
TRV	toxicity reference value

TTF	Thermal Treatment Facility
UCL	upper confidence limit
UDMH	unsymmetrical dimethyl hydrazine
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VCAPCD	Ventura County Air Pollution Control District
VOC	volatile organic compound
WPA	Work Plan Addendum
WPAA	Work Plan Addendum Amendments

Definition of dioxin/furan congeners

PCDD/PCDDs	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
TEQ	toxicity equivalency quotient (normalized to 2,3,7,8 TCDD)

Definition of hydrocarbon ranges

Analytical Method Performed	*Classification used in Area I Burn Pit RFI Report*
C21-C30 Lubricant	Lubricant Oil Range Hydrocarbons (C21-C30)
Diesel Range Organics (C12-C14)	Kerosene Range Hydrocarbons (C12-C14)
Diesel Range Organics (C15-C20)	Diesel Range Hydrocarbons (C15-C20)
Diesel Range Organics (C21-C30)	Lubricant Oil Range Hydrocarbons (C21-C30)
Diesel Range Organics (C7-C28)	Diesel Range Hydrocarbons (C15-C20)
Diesel Range Organics (C8-C11)	Jet Fuel Range Hydrocarbons (C8-C11)
Fuel Hydrocarbons, C12-C28	Diesel Range Hydrocarbons (C15-C20)
Fuel Hydrocarbons, C16-C28	Diesel Range Hydrocarbons (C15-C20)
Fuel Hydrocarbons, C7-C24, as heavy Hydrocarbons	Hydrocarbons
Gasoline Range Organics	Gasoline Range Hydrocarbons (C4-C12)
Gasoline Range Organics (C5-C12)	Gasoline Range Hydrocarbons (C4-C12)
Gasoline Range Organics (C8-C11)	Jet Fuel Range Hydrocarbons (C8-C11)
Kerosene (C12-C14)	Kerosene Range Hydrocarbons (C12-C14)
Petroleum Hydrocarbons	Hydrocarbons
Total Petroleum Hydrocarbons	Hydrocarbons

D.1 Introduction

This appendix to the Group 1B Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report presents findings and recommendations based on the results of the investigation conducted at the Area I Burn Pit RFI Site of the Santa Susana Field Laboratory (SSFL). The Area I Burn Pit RFI Site contains one solid waste management unit (SWMU)—SWMU 4.8, also called Area I Burn Pit. The RFI was performed in accordance with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC)-approved RFI Work Plan for the Area I Burn Pit (Haley & Aldrich [H&A], 2006b) and the RFI Work Plan Draft Addendum (WPA) for the Area I Burn Pit (H&A, 2008d).

The RCRA Corrective Action Program at the SSFL is being conducted under the oversight of the DTSC. The portion of SWMU 4.8 referred to as the "Interim Status Facility" and/or "Thermal Treatment Facility" (TTF) (Burn Pit 2 and Concrete Pad 2) was historically identified as a separate administrative unit by regulating agencies (then the Department of Health Services [DHS], Toxic Substances Control Division). A Closure Plan for the TTF was submitted by Rockwell International to DHS in November of 1990. After several revisions, the TTF Closure Plan was revised and conditionally approved by the DTSC in December 1992 (Rocketdyne, 1992, Rocketdyne, 1993a, DTSC, 1992a, DTSC, 1992c). Since the early 1990s, investigation activities have been performed pursuant to the Closure Plan, the RFI program, and Consent Order for Corrective Action, Docket No. P3-07/08-003 (DTSC, 2007).

The Area I Burn Pit RFI Site is one of six RFI sites included in the Group 1B RFI Report. The location of the Area I Burn Pit RFI Site within the SSFL and the Group 1B Reporting Area is shown in Figure 1-2 of the Group 1B RFI Report (Volume I). Features at the Area I Burn Pit RFI Site are presented in Figure D.1-1. An RFI Site is an area that includes at least one SWMU and/or an area of concern (AOC), and some adjacent land for the purpose of characterization. The other five Group 1B RFI sites are:

- Bowl Area
- Component Test Laboratory III (CTL-III)
- Component Test Laboratory V (CTL-V)
- Perimeter Pond
- R-1 Pond

The Area I Burn Pit RFI Site is located in the southern portion of the Group 1B Reporting Area, south and west of the CTL-V and CTL-III RFI Sites, respectively.

The SSFL RFI was conducted to (1) characterize the presence of SSFL-operation-related chemicals in environmental media; (2) estimate risks to human health and the environment (in other words, the ecosystem); and (3) gather data for the next phase of RCRA Corrective Action, supporting the recommendations included in this RFI report regarding areas recommended for no further action (NFA), corrective measures study (CMS) areas, and interim stabilization.

The SSFL has been divided into two operable units (OUs)—the Surficial Media Operable Unit (SMOU) and the Chatsworth Formation Operable Unit (CFOU). The Area I Burn Pit RFI Site characterization presented in this appendix comprises data for the SMOU and summaries of the CFOU groundwater data. The SMOU includes soil, sediment, surface water, air, biota, and near-surface groundwater (NSGW) at the SSFL. NSGW is defined as groundwater occurring within alluvium or weathered bedrock of the Chatsworth Formation. The CFOU includes Chatsworth Formation bedrock and deeper groundwater that occurs within the unweathered bedrock of the Chatsworth Formation.

D.1.1 Report Organization

This Area I Burn Pit RFI Site Report provides detailed sampling data and evaluation pertaining to the Area I Burn Pit RFI Site, including a summary of the site history, a summary of the RFI sampling and analyses, risk assessment results, and recommendations. This information is presented in sections organized as follows:

- **Section D.2 – Site History, Chemical Use, and Current Conditions.** Presents the site history, chemicals used, and the current conditions including geology and groundwater conditions. Changes in site conditions and soil disturbance areas are also described.
- **Section D.3 – Nature and Extent of Chemical Impacts.** Presents a summary of SMOU and CFOU groundwater characterization information for Area I Burn Pit RFI Site.
- **Section D.4 – Summary of Risk Assessment Findings**. Presents the results of the human health risk assessment (HRA) and ecological risk assessment (ERA) for Area I Burn Pit RFI Site. The complete risk assessment is included in Appendix A of the Group 1B RFI Report.
- **Section D.5 – Area I Burn Pit RFI Site Actions Recommendations**. Presents a summary of Area I Burn Pit RFI Site areas recommended for either NFA or further evaluation in the CMS. CMS Areas recommended for interim measures to prevent contaminant migration are also identified, if any.
- **Section D.6 – References.** Includes a list of cited references.

Site-specific additional information is provided in the following attachments:

- **D1:** Site-specific regulatory agency documents and correspondence.
- **D2:** Subsurface information (soil boring, trench, piezometer, and well logs).
- **D3:** Data quality, validation and laboratory reports.
- **D4:** Report on the Gamma Walkover Survey performed at the Area I Burn Pit RFI Site in 2008/2009

Information regarding characterization for the Area I Burn Pit RFI Site is provided in the following figures and tables:

- Figure D.1-1: Presents the location of features within the Area I Burn Pit RFI Site.

- Figure D.2-1: Presents a plan view of Area I Burn Pit RFI Site, showing the Chemical Use Area identified. Tables D.2-1 through D.2-4 present summaries of buildings, tanks, transformers, and other features at the Area I Burn Pit RFI Site.
- Figures D.2-2A, D.2-2B, D.2-2C, D.2-2D, and D.2-2E: Present a plan view of the Area I Burn Pit RFI Site, showing soil and soil vapor sampling locations and nearby monitoring wells.
- Figures D.2-3A, D.2-3B, D.2-3C, and D.2-3D: Present geologic cross sections across the Area I Burn Pit RFI Site.
- Figure D.2-4: Presents soil disturbance areas across the Area I Burn Pit RFI Site.
- Figures D.3-1 through D.3-15: Summarize soil and soil vapor sampling at the Area I Burn Pit RFI Site. Soil and soil vapor sampling results are shown on these maps and are also listed in Tables D.3-2A, D.3-3A, and D.3-3B.

Information regarding Group 1B area-wide conditions, transport and fate of chemicals between RFI sites, and other evaluations of area-wide issues are contained in the Group 1B RFI Report and appendices. Pertinent appendices to this Group 1B RFI Report are:

- **Appendix A:** Presents risk assessment information, including risk calculations, results tables, transport-and-fate modeling (except groundwater), and a description of any methodology variances from the Standardized Risk Assessment Methodology (SRAM) Work Plan (Montgomery Watson Harza [MWH], 2005).
- **Appendix B:** Presents information regarding groundwater conditions in the Group 1B Reporting Area, including the Area I Burn Pit RFI Site. Information includes groundwater occurrence and quality, chemical transport, data set representativeness, and supporting data (such as monitoring results, time-series plots, and hydrographs), as well as an evaluation of naturally occurring constituents.

D.1.2 Historical Reference Documents

A searchable, historical document database for the Group 1B Reporting Area is being submitted to DTSC along with this Group 1B RFI Report (Boeing, 2009). Included are facility records, maps and drawings, correspondence, and reports relevant to the RFI for each of the Group 1B RFI sites. Documents pertaining to the entire SSFL are also included if they are relevant to Group 1B. The Group 1B document database includes documents relevant to the Area I Burn Pit RFI Site. Information presented in this Area I Burn Pit RFI Site report is supplemented by background documents that contain information about the RFI site and SSFL background, SMOU Program background, and methodologies/procedures. Key historical documents are listed below with brief descriptions:

- RCRA Facility Assessment (RFA) (Science Applications International Corporation [SAIC], 1994). This report contains:
  - A brief description of the SSFL facility, including an operational history, physical setting information, and regulatory programs and oversight during the late 1980s and early 1990s

  - Visual inspection records performed at facility operations
  - Definition and description of SWMUs and AOCs identified during the assessment
- Current Conditions Report (CCR) (ICF Kaiser Engineers [ICF], 1993). This report contains:
  - A general description of the SSFL facility, including an operational history, physical setting information, and regulatory programs and oversight during the late 1980s and early 1990s
  - Description of SWMUs and AOCs, including presentation of results from environmental sampling performed to assess current conditions
  - A draft work plan for further investigation during the RFI for selected SWMUs and AOCs
- RFI Work Plan, Area I Burn Pit – SWMU 4.8 (H&A, 2006), RFI WPA, Area I Burn Pit – SWMU 4.8 (H&A, 2008d). These reports contain:
  - Sampling procedures and rationale
  - RFI site description and operational history
  - SMOU sampling and analysis plan for the Area I Burn Pit RFI Site
- RFI WPA (Ogden Environmental and Energy Services Company, Inc. [Ogden], 1996), Shallow Groundwater Investigation Work Plan (Ogden, 2000). These reports contain:
  - Sampling procedures and rationale
  - RFI site descriptions and operational history
  - Shallow groundwater characterization sampling and analysis plan for the SSFL
- RFI Program Report (MWH, 2004). This report contains:
  - A general description of the SSFL facility, including an operational history, physical setting information, and regulatory programs and oversight
  - A summary of the RCRA Corrective Action Program being conducted at the SSFL and a description of the OUs
  - A comprehensive description of the SMOU field sampling program, including work plans followed, overall sampling scope, sampling methods, subcontractors used, and protocol followed
  - Details of the analytical program for the SMOU RFI, including laboratories used, data validation findings, and Data Quality Assessment findings
  - Programmatic key decision points or significant issues that influenced sampling, laboratory procedures, methodologies, or step-out requirements
- SRAM Work Plan, Revision 2 (MWH, 2005). This report contains:
  - Procedures for completing HRAs and ERAs
  - Background soil concentrations and groundwater comparison concentrations

  - Biological conditions report for the SSFL

- Near-Surface Groundwater Characterization Report (MWH, 2003). This report contains:
  - Nature and extent of near-surface groundwater at the SSFL
  - Distribution, transport, and fate of trichloroethene (TCE) and other chemicals of concern (COCs), and the relationship of NSGW to CFOU groundwater
- CFOU Characterization Reports (MWH, 2000; MWH, 2003). These reports contain:
  - Geologic framework at the SSFL and hydrogeologic conditions of both NSGW and CFOU groundwater
  - Transport and fate of TCE, and the occurrence and transport of other COCs in the CFOU groundwater.
- Annual and quarterly groundwater monitoring reports, including:
  - First Quarter 2008 Groundwater Monitoring Report (H&A, 2008a)
  - Second Quarter 2008 Groundwater Monitoring Report (H&A, 2008b)
  - Third Quarter 2008 Groundwater Monitoring Report (H&A, 2008c)
  - Annual 2008 Groundwater Monitoring Report (H&A, 2009)
- Debris Area Survey and Sampling Methodology (CH2M HILL and MWH 2008b). This Standard Operating Procedure (SOP) provides general guidelines for performing the following activities:
  - Visual inspections of the SSFL for surficial evidence of solid waste disposal (referred to herein as debris areas)
  - Sampling for chemical analytes at debris areas
- Quality Assurance Project Plan (QAPP) (MECx, 2006). The QAPP provides general guidelines, which include:
  - Quality assurance/quality control (QA/QC) procedures to ensure that field and laboratory data quality and project work meet the data quality objectives (DQOs)
  - Ensure the project work performed is in accordance with professional standards and regulatory guidelines
- Building Feature Evaluation and Sampling (CH2M HILL and MWH, 2008a). This SOP presents the procedures for evaluating environmental conditions associated with existing buildings, concrete pads, and supporting infrastructure under the following scenarios:
  - Environmental assessment prior to building demolition
  - Environmental assessment during/after building demolition
  - Environmental assessment for buildings not planned for demolition

D.2 Site History, Chemical Use, and Current Conditions

The Area I Burn Pit RFI Site is located in the southern portion of SSFL in Area I. The operational area of the Area I Burn Pit RFI Site is approximately 11 acres.[1] The Area I Burn Pit RFI Site location within the SSFL is shown in Figure 1-2 of the Group 1B RFI Report (Volume I), which also shows the Group 1B Reporting Area boundary. The Area I Burn Pit RFI Site features are shown in Figure D.1-1. The Area I Burn Pit RFI Site layout and the location of the Chemical Use Area are shown in Figure D.2-1. The sampling locations across the Area I Burn Pit RFI Site are shown in Figures D.2-2A, D.2-2B (Western Area), D.2-2C (Eastern Area), D.2-2D (Southern Area), D.2-2E (Air Deposition), and D.2-2F (Radiological).

During the RCRA Facility Assessment (RFA), various SMWUs and AOCs within the SSFL were identified. The RFI boundary of the Area I Burn Pit was identified as SWMU 4.8 in the CCR (ICF, 1993). No other SMWUs or AOCs were identified within the boundary of the Area I Burn Pit RFI Site as it is defined in this report (Figure D.1-1). The identified Chemical Use Area at the Area I Burn Pit RFI Site is shown in Figure D.2-1 and is described in Tables D.2-1 through D.2-4. A list of chemicals reportedly spilled at the Area I Burn Pit RFI Site is included in Table D.2-5 (H&A, 2006b).

The following sections describe the history and operations, chemicals used, and current conditions at the Area I Burn Pit RFI Site.

D.2.1 SWMUs and AOCs at the Area I Burn Pit RFI Site

The Area I Burn Pit RFI Site contains one SWMU (SWMU 4.8, Area I Burn Pit) (H&A, 2006b). A brief description of this SWMU is presented below.

D.2.1.1 Area I Burn Pit (SWMU 4.8)

The Area I Burn Pit (SWMU 4.8) was established in 1958 for the destruction of chemicals by combustion and detonation. The Area I Burn Pit was operated by Rocketdyne personnel until 1971. Thereafter, a portion of the TTF was used for occasional destruction of small quantities of energetic materials (including triethylaluminum [TEA] and triethylboron [TEB]) until use of the TTF was discontinued in 1990.

Operational features at SWMU 4.8 consisted of Burn Pit 1, Burn Pit 2, three earthen ponds, three concrete-lined ponds including an acid pit (Rocketdyne, 1969), a Former Fire Department Demonstration Area, an entrance shack and related storage area, a control center, and two storage sheds for explosives. Burn Pits 1 and 2 also contained burn cages. The six ponds ranged from 200 to 10,000 gallons in capacity. Additional areas onsite might

[1] While the operational area of the Area I Burn Pit RFI Site is approximately 11 acres, the entire Area I Burn Pit RFI Site investigation area including the drainages south of SWMU 4.8 (area within the RFI Site buffer shown in Figure D.1-1) is approximately 26 acres. "Area I Burn Pit RFI Site" refers to all areas within the RFI Site buffer shown in Figure D.1-1.

also be associated with burning, storage, and/or burial of wastes or other debris, as identified during a historical document review (H&A, 2006b). These features are shown in Figure D.2-2A.

The former TTF Interim Status Facility lies within the central eastern portion of the Area I Burn Pit RFI Site. The TTF Interim Status Facility consisted of two concrete pads (Burn Pit 2 and Concrete Pad 2) surrounded by earthen berms and was used for the evacuation of pressurized cylinders, and destruction of energetic wastes, plasticizers, and binders (H&A, 2006b).

Two hummocky areas were identified within the SWMU 4.8 boundary in aerial photographs included in Appendix C of the RFI WPA for the Area I Burn Pit (H&A, 2008d). Aerial photographs dated from approximately 1959 to 1967 contain a graded area at the Western Hummocky Area, and several operational features (pits and roads) in the southern portion of the Eastern Hummocky Area. Historical photographs show a drum storage area, an aboveground tank, and several temporary structures in the Eastern Hummocky Area (Rocketdyne, 1961).

Additional details on the features associated with SWMU 4.8 are presented in Tables D.2-1 through D.2-4.

D.2.1.2 Other Features

In addition to the features included in SWMU 4.8, the southward-trending drainages within and south (downgradient) of the SWMU were identified as potential contaminant migration pathways associated with the Area I Burn Pit (H&A, 2006b). These drainages and potential migration pathways are shown in Figure D.2-2D and are evaluated as part of the Area I Burn Pit RFI Site. In addition, Debris Location 3037 (empty 30-gallon metal drum and file cabinet drawer located down slope of the Area I Road) was identified near the northern portion of SWMU 4.8 during the debris survey.

D.2.2 Area I Burn Pit RFI Site History

A summary of the site chronology, including descriptions of operations and investigation activities for the Area I Burn Pit RFI Site, is presented below. Facility correspondence, investigation reports, waste disposal records, facility maps, drawings, photographs, and personnel interview records were reviewed and evaluated to compile the information presented below. Primary sources of information are summarized Section D.1.2.

D.2.2.1 Site Chronology

A summary of key historical investigation and soil disturbance activities are presented in Tables D.2-6 and D.2-7 and in Figure D.2-4. A summary description of the Area I Burn Pit RFI Site is presented below.

D.2.2.1.1 1958 to 1971

From 1958 to 1971, the Area I Burn Pit RFI Site was used for the destruction of waste chemicals and high-energy compounds. During this time, the Area I Burn Pit RFI Site received waste (largely solvents and fuels) from other areas of the SSFL, in addition to waste

from other, offsite Rocketdyne locations (such as Canoga, Vanowen, DeSoto, and Science Center) (H&A, 2006b). A summary of disposal activities indicates the following materials were disposed of at the Area I Burn Pit RFI Site (Rockwell, 1981a):

- 450,000 gallons of fuels
- 6,924 igniters
- 21,300 gallons of process chemicals
- 13,810 pounds of reactive metals
- 31,717 gallons of organic solvents
- 5,121 pounds of explosives
- 32,932 cubic feet of toxic gases
- 191 gallons of heavy metal toxics

Aerial photographs dated from approximately 1959 to 1967 contain a large area of graded soil in the Western Hummocky Area, and several operational features in the southern portion of the Eastern Hummocky Area.

D.2.2.1.2 1981 to 1982

In 1981-1982, approximately 1,600 cubic yards of debris (including empty cylinders and drums, concrete, rebar, ash, and steel fragments/pipes) (Unknown, 1982; Rocketdyne, 1981a; Rocketdyne, 1993) and soil from six locations in the central portion of the Area I Burn Pit RFI Site were excavated where wastes and materials were buried or disposed of. The work was completed with supervision from the Los Angeles Regional Water Quality Control Board (RWQCB) and DHS. The locations of the six excavations are shown in Figure D.1-1. Soil samples were collected from Excavations 1 through 4 (H&A, 2006b).

D.2.2.1.3 1982 to 1990

Between 1982 and 1990 the TTF was used sporadically for destruction of small quantities of high-energy materials (primarily TEA and TEB) and kerosene fuel (Rocket Propellant 1 [RP1]). During this time, the Area I Burn Pit RFI Site potentially received waste from the Advanced Propulsion Test Facility (APTF) RFI Site, CTL-III RFI Site, Happy Valley RFI Site, Building 359 RFI Site, and the Building 1300 Chemistry Laboratory located within the Instrument and Equipment Laboratories (IEL) RFI Site (Rocketdyne, 1998).

In February 1990, two ash samples were collected from the Area I Burn Pit RFI Site; however, exact sampling locations were not reported. After 1990, the Area I Burn Pit RFI Site was inactive with the exception of investigation, remediation, and closure activities (H&A, 2006b).

D.2.2.1.4 1993 to 1998

In June 1993, ICF Kaiser Engineers conducted a geophysical survey of the Area I Burn Pit RFI Site to locate and remove metallic anomalies (Figure D.1-1). Soil samples were collected in June 1993 from locations throughout SWMU 4.8.

All remaining operational structures including the Burn Cage, Control Center and Cylinder Treatment Area were removed in June and July 1993.

In May 1994, soil samples were collected from Earth Pond 2 and analyzed for dioxins at the request of DTSC. Ogden collected soil samples from the drainages between the Area I Burn Pit RFI Site and Outfall 001 for screening purposes (H&A, 2006b).

D.2.2.1.5 2000 to 2005

Between 2000 and 2005, soil, soil leachate, and surface water samples were collected from Burn Pit 2 and the drainage channels surrounding the Area I Burn Pit RFI Site (H&A, 2006b).

D.2.2.1.6 2006

Soil screening samples were collected from key features in the Area I Burn Pit RFI Site (Earth Ponds 1, 2, and 3; Burn Pits 1 and 2; and the Former Fire Department Demonstration Area) to facilitate the development of an Interim Measures Plan (H&A, 2006a). In addition, soil samples were collected from proposed excavation areas and analyzed for radiological constituents (H&A, 2006b).

D.2.2.2 Site Inventories

Inventories of buildings, tanks, transformers, and chemicals used at the Area I Burn Pit RFI Site were compiled during preparation of this report. Historical reports and facility drawings were reviewed, and visual site inspections were conducted. The locations of identified buildings, tanks, transformers, and other site features are shown in Figure D.2-1. The inventories are included in the following tables:

- Building inventory – Table D.2-1
- Storage tank inventory – Table D.2-2
- Transformer inventory – Table D.2-3
- Inventory of other site features – Table D.2-4
- Spill inventory – Table D.2-5

D.2.3 Area I Burn Pit RFI Site Chemical Use Areas

Chemical Use Areas are locations where chemicals were documented to have been (or potentially have been) used, stored, spilled, discharged, and/or disposed of. Based on the review of historical documents and the complexity of operations at the Area I Burn Pit, the entirety of SWMU 4.8 was identified as a single Chemical Use Area. Chemicals that were potentially used, stored, or generated onsite include volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), metals, inorganics (including perchlorate), dioxins, and energetics. The Chemical Use Area for the Area I Burn Pit RFI Site is shown in Figure D.2-1 and described in further detail in Table D.2-8.

D.2.4 Site Condition

This section provides summaries of conditions near the Area I Burn Pit RFI Site, including topography, geology, soil, groundwater, surface water, and biology.

D.2.4.1 General Conditions and Topography

The Area I Burn Pit RFI Site is located within the southern portion of Area I and is currently inactive. Topography of the Area I Burn Pit RFI Site generally slopes to the southeast. Current surface elevations at the Area I Burn Pit RFI Site range from a low of approximately 1730 feet above mean sea level (feet msl) in the southeastern portion of the Area I Burn Pit RFI Site to a high of approximately 1800 feet msl at a rock outcrop in the northwestern portion of the Area I Burn Pit RFI Site. A summary conceptual site model is presented in Table D.2-9. Figures D.2-3B through D.2-3D present cross sections for the Area I Burn Pit RFI Site (Cross Sections J-J', K-K', and L-L'), detailing topography, sample locations, depths of alluvium along with weathered and unweathered Chatsworth Formation, and the most recent available groundwater elevations. The locations of the cross sections are shown in Figure D.2-3A.

D.2.4.2 Geology

Based on current available data, the Area I Burn Pit RFI Site is located south of the Coca Fault in the Lower Chatsworth Formation. Figure B-1 of Appendix B (Volume II) shows the Coca Fault and the geologic units represented within the RFI site. The Lower Chatsworth consists of interbedded sandstone, siltstone, and shale in the Area I Burn Pit RFI Site. The attitude of the main trace of the Coca Fault is N76^{o}W with an approximate vertical dip (MWH, 2007). Additional geologic information is presented in Appendix B of Group 1B RFI Report.

D.2.4.3 Soil

Throughout most of the Area I Burn Pit RFI Site, soil ranges from less than 1 foot thick in the western portion of SWMU 4.8 to approximately 30 feet thick in the central-eastern portion of SWMU 4.8 (in the area southwest of Concrete Pond 2). Soil in the undisturbed areas of the Area I Burn Pit RFI Site consist of alluvium and weathered Chatsworth Formation materials, which are primarily fine-grained silty sands, clayey sands, lean clays, and poorly graded sand with clay, and silts. Soil boring logs and trench logs are included as Attachment D2 to this appendix.

D.2.4.4 Groundwater

The groundwater system and monitoring network in RFI Group 1B is discussed in detail in Appendix B of the Group 1B RFI Report. In that appendix, Figure B-5 shows the locations of wells and piezometers that are used to monitor groundwater at and near the Area I Burn Pit RFI Site. Figure D.2-2C shows well locations in and around the Area I Burn Pit RFI Site.

At the Area I Burn Pit RFI Site, two monitoring wells (RS-06 and RS-07) were installed to monitor groundwater conditions in alluvium and weathered bedrock (near-surface groundwater [NSGW]), and one monitoring well (RD-03) was installed to monitor groundwater conditions in the unweathered bedrock (CFOU groundwater). Construction details for the monitoring wells are shown in Tables B-2 and B-3 in Appendix B of the

Group 1B RFI Report. The average depth to groundwater is approximately 17, 5, and 10 feet below ground surface (bgs) for wells RS-06, RS-07, and RD-03, respectively.[2]

A conceptual cross-sectional diagram of NSGW and CFOU groundwater occurrence is shown in Figure B-6 in Appendix B of the Group 1B RFI Report. NSGW is encountered at an elevation ranging from 1725 feet msl at Well RS-07 (August 1997) to 1749 feet msl at Well RS-06 (March 1993). Based on current available data, NSGW flows to the southwest with a hydraulic gradient of approximately 0.0038 feet per foot (ft/ft). The NSGW in the Area I Burn Pit RFI Site area is continuous with the CFOU groundwater. The occurrence of NSGW in the Area I Burn Pit RFI Site area is shown in Figure B-8 in Appendix B of the Group 1B RFI Report.

CFOU groundwater occurs at elevations ranging from 1723 feet msl to 1744 feet msl at well RD-03 (based on data collected from August 1999 to October 2008). Based on current available data, CFOU groundwater in the vicinity of the Area I Burn Pit RFI Site flows to the south. The CFOU groundwater elevations in the Area I Burn Pit RFI Site area are shown in Figure B-9 in Appendix B of the Group 1B RFI Report. Further information related to CFOU groundwater at the Area I Burn Pit RFI Site is presented in Appendix B.

D.2.4.5 Surface Water

Surface water flow in the Area I Burn Pit RFI Site area is shown in Figure 2-7 of the Group 1B RFI Report (Volume I). Surface water might exist intermittently at the Area I Burn Pit RFI Site as the result of seasonal precipitation events. While there are no perennial bodies of surface water at the Area I Burn Pit RFI Site, surface water runoff generally flows south/southeast in the central and eastern portions of the Area I Burn Pit RFI Site (east of the north-south trending road), and to the west in the western portion of the Area I Burn Pit RFI Site (west of the north-south trending road). The following sections further describe surface water flow patterns at the Area I Burn Pit RFI Site during and following site operations.

D.2.4.5.1 Historical Surface Water Flow Patterns

Historical surface water flow patterns can generally be inferred from the topography and design drawings of major features within the Area I Burn Pit RFI Site (such as burn pits and concrete ponds) and their associated drainage pathways.

Earth Ponds 1 and 2 and the potential burn pit located west of the ponds do not appear in historical aerial photographs prior to 1964. After that time, Earth Ponds 1 and 2 could have drained either (1) towards the eastern boundary of the Area I Burn Pit RFI Site, bypassing Earth Pond 3 and exiting SWMU 4.8 in the far southeastern corner; (2) towards the western potential migration pathway from the southeast corner of Earth Pond 2; (3) towards the west/northwest to the western drainage channel. The potential burn pit identified in aerial photographs located west of Earth Ponds 1 and 2 could have drained west or west-southwest towards the western drainage channel. The western drainage channel flows

[2] The depth to groundwater is based on data collected from February 2005 to August 2006 at Well RS-06, from May 2006 to February 2009 at Well RS-07, and from May 2006 to February 2009 at Well RD-03. Groundwater has not been detected at Well RS-06 since August 2006.

south and connects with the drainage channel extending from Outfall 011 south of SWMU 4.8.

In the central portion of SWMU 4.8, flow patterns indicate that during historical burn, dilution, and disposal events, liquid contained in Burn Pits 1 and 2, and/or Concrete Pad 2 (collectively the Interim Status Facility/TTF) was graded to drain to the southeast corner of SWMU 4.8 (Rocketdyne, 1981b), collecting in the area now referred to as Earth Pond 3. Concrete Pond 1 (located in the northern-central portion of SWMU 4.8) and Concrete Pond 2 (located downslope of the control center) also drained to Earth Pond 3 (Rocketdyne, 1963). From Earth Pond 3, liquid could have drained into Perimeter Pond through an underground pipeline extending between Earth Pond 3 and Perimeter Pond (Rocketdyne, 1963; ICF Kaiser, 1993) or drained by surface water flow towards Outfall 011 (Rocketdyne, 1981b).

Surface water run-off in the Eastern Hummocky Area drained south towards Perimeter Pond. Surface water run-off in the Western Hummocky Area drained either towards the southeast or west into minor drainage channels, flowed south in the western drainage channel, and ultimately connected with the drainage channel extending from Outfall 011 south of SWMU 4.8.

D.2.4.5.2 Recent Surface Water Flow Patterns

Since all the major features of the Area I Burn Pit RFI Site have been removed and the area partially graded for placement of a gravel access road to Outfall 011, surface water in the eastern portion of the Area I Burn Pit RFI Site (all land east of the north-south trending road in the center of SWMU 4.8) generally flows to Outfall 011 (located near the southeast corner of SWMU 4.8). All other areas of SWMU 4.8 are assumed to drain in patterns similar to when the Area I Burn Pit RFI Site was active.

Surface water in Area I Burn Pit RFI Site drainage channels ultimately flows south to Outfall 001 (located south of Group 1B in the Group 10 RFI Reporting Area), as shown in Figure 1-5 of the Group 1B RFI Report. Drainage pathways that trend toward Outfall 001 are shown in Figure 2-6 of the Group 1B RFI Report. Outfalls 001 and 011 are regularly monitored as part of the National Pollutant Discharge Elimination System (NPDES) monitoring program under the oversight of the RWQCB.

D.2.4.6 Biology

A biological survey was conducted at the Area I Burn Pit RFI Site in June 2006 (SWCA, 2006). In April 2008, an additional reconnaissance-level biological survey was conducted at the Area I Burn Pit RFI Site. Biological conditions at the Area I Burn Pit RFI Site, including habitat/vegetation types, are shown in Figure 2-10 of the Group 1B RFI Report (Volume I), and were consistent with the previous biological survey. The results of the biological survey and a qualitative plant evaluation for the Area I Burn Pit RFI Site are presented in Appendix A (Human Health and Ecological Risk Assessment), Attachment A7 (Ecological Surveys Conducted in April 2008).

D.3 Nature and Extent of Chemical Impacts

This section describes the data used to define the nature and extent of chemical impacts to environmental media at the Area I Burn Pit RFI Site. The presentation includes sampling objectives, scope, key decision points related to characterization activities, and findings.

Transport-and fate-evaluations are discussed in the following sections of the report:

- Group 1B RFI Report (Volume I), Section 5, Contaminant Transport and Fate – Potential migration via surface water flow
- Group 1B RFI Report (Volume II), Appendix A, Risk Assessment – Potential VOC migration from groundwater to soil, soil to indoor air
- Group 1B RFI Report (Volume II), Appendix B, Groundwater Characterization – Potential migration from soil to groundwater and groundwater migration

D.3.1 Sampling Objectives

Soil, soil vapor, surface water, and NSGW samples were collected as part of the previous RFA, CCR, and preliminary RFI sample collection events (ICF, 1993; MWH, 2004). Based on the historical document review summarized in Section D.1.2, additional soil and soil vapor samples were collected in 2008 and 2009 to further characterize the Area I Burn Pit RFI Site based on the RFI DQOs. The sampling performed in 2008 and 2009 was performed in accordance with the DTSC-approved RFI Work Plan for Area I Burn Pit (H&A, 2006b) and the RFI WPA for Area I Burn Pit (H&A, 2008d). The process of selecting sampling locations, depths, and analytical methods considered objectives established in the Group 1B DQOs as summarized in the Group 1B RFI Report, Section 4.0 (Volume I).

To achieve these objectives, recent soil sampling was conducted as described in Table D.3-1A with consideration to the following:

- Additional information regarding site use and observed site conditions
- Site sampling results and data trends
- Knowledge of chemical properties (such as mobility, volatility, and association with other chemicals)
- SSFL SRAM-based screening concentrations for human health and ecological receptors
- Risk assessment results and knowledge of areas recommended to require further evaluation during the CMS

Groundwater has been sampled to satisfy SSFL routine monitoring requirements and additional characterization objectives according to regulatory agency-approved work plans (see Section D.3.2). Based on detected RFI site chemicals, chemical distribution, and site conditions, additional groundwater sampling and analysis were also conducted to complete

characterization of individual RFI sites and provide data sufficient for risk assessment. Groundwater sampling was conducted as described in the Sampling Analysis Plans (GRC, 1995a and 1995b) and the Shallow Zone Groundwater Investigation Work Plan (Ogden, 2000).

D.3.2 Sampling Scope

A total of approximately 797 soil matrix samples (collected from 382 soil boring locations and 45 trench locations), 98 soil vapor samples, and 5 surface water samples were collected between October 1981 and February 2009 to assess potential impacts associated with the Chemical Use Area at the Area I Burn Pit RFI Site. Sampling locations and analytical suites were based on DTSC requests, sampling results from previous investigations, additional facility information obtained from historical records, site inspections, personnel interviews, and historical and/or aerial photographs. Sampling schedules are presented in Tables D.3-1A, D.3-1B, and D.3-1C. Sample locations are shown in Figures D.2-2A through D.2-2E.

Both CFOU groundwater and NSGW at SSFL have been sampled and analyzed according to agency-approved work plans (GRC, 1995a and 1995b; Ogden, 2000). At the Area I Burn Pit RFI Site, two NSGW wells (RS-06 and RS-07) are used to characterize the NSGW. One CFOU groundwater monitoring well (RD-03) is used to characterize the CFOU groundwater. Groundwater characterization data for the Area I Burn Pit RFI Site are presented with the Group 1B groundwater data set in Appendix B of the Group 1B RFI Report, and in Section D.3.5.2. The sampling schedules for NSGW and CFOU groundwater are presented in Tables D.3-1D and D.3-1E.

Soil samples collected in 2008 and 2009, were submitted to two California-certified environmental laboratories—GEL Engineering Laboratories in Atlanta, Georgia, and Test America Inc. in Arvada, Colorado. As an ongoing, additional QA measure, the field sampling effort consisted of collecting blind duplicates and split samples at the frequency of approximately 5 percent of primary samples. Blind duplicates were submitted along with the primary samples to the two environmental laboratories. Split samples were submitted for analyses to Lancaster Laboratories in Lancaster, Pennsylvania, a California-certified environmental laboratory. Soil vapor samples were analyzed in an onsite mobile lab operated by Microbac Laboratories, Inc. of Riverside, California.

Based on a QA review conducted on soil, soil vapor, surface water, and well sampling results, data have been deemed usable and in compliance with RFI Program requirements as defined by the QAPP (MECx, 2008). The RFI QA program included individual sample data validation, assessment of the performance of each laboratory, and a qualitative review of the parameters for precision, accuracy, representativeness, reliability, and completeness for the data sets. Historical samples (collected prior to the beginning of the RFI in 1996) were typically not validated for the subsequent RFI, but are deemed useable for the RFI because they were collected and reviewed according to the QA protocols for those programs and were used by agencies to make decisions for the Area I Burn Pit RFI Site cleanup actions. Overall data quality is described in the RFI Program Report (MWH, 2004). Site-specific data quality summaries for the Area I Burn Pit RFI Site are described by media in the sections below.

This report presents the results of sampling conducted during the RFI and previous investigations at the Area I Burn Pit RFI Site, including results for the following media:

- Soil vapor
- Soil matrix
- Groundwater
- Surface water

D.3.2.1 Scope of Air Deposition Sampling

Air dispersion modeling was performed to estimate the cumulative spatial extent of metals and particulate deposition resulting from open burn/open detonation events at the Area I Burn Pit RFI Site. This modeling was performed in accordance with *Proposed Air Modeling Protocol for the Area I Burn Pit, Santa Susana Field Laboratory* (CH2M HILL, 2008b). The modeling results predicted that the greatest deposition would have occurred within approximately 500 meters (1,640 feet) of the centroid of the Area I Burn Pit RFI Site. Higher levels of potential deposition would be expected in the northwest and east-southeast directions due to prevailing wind directions and local topography.

The modeling results were used to identify surface soil sampling locations to assess the potential for deposition of metals and particulates from the Area I Burn Pit RFI Site. Soil sampling locations were selected at distances approximately 200, 400, and 600 meters away from the approximate center of the Area I Burn Pit RFI Site. In addition to the alignment of sampling locations in the prevailing wind directions at the site (that is, northwest and east-southeast), sampling was also performed in the northeast and southwest directions for geographic coverage purposes. The recommended surface soil sample locations were submitted to DTSC on September 10, 2008 (Boeing, 2008). However, the middle sample location along the northwest transect had to be repositioned due to the presence of a steep cliff and large rock outcrops that prevented the safe collection of that sample. That sample was relocated to be as close to the original location as possible. In addition, select sample locations were repositioned to be away from roadways based on a DTSC request.

The locations that were sampled to evaluate potential air deposition from the Area I Burn Pit RFI Site are presented in Figure D.2-2E. Samples collected from these locations were submitted for analysis of metals, the sampling results of which are discussed in Section D.3.4.3.

D.3.2.2 Sampling of Potential Historical Burial Location

A historical planning drawing dated August 28, 1963 suggests that material excavated from the existing disposal pits may have been buried at a location near the Area I Burn Pit RFI Site (Rocketdyne, 1963). The note on the drawing reads:

> "The existing burn pits shall be stripped of the surface material (top 9" min.) and the material buried a min. 5' deep at a spot designated by the North American Field Representative within ½ mile of the job site. Care shall be taken by personnel to avoid direct contact with this material due to the possible presence of contaminants."

The burn pits referenced in the figure appear to be Concrete Ponds 2 and 3 (Figure D.1-1). The drawing also indicates the existing earth dike of Earth Pond 3 should be removed and

replaced. Available historical records did not provide additional information regarding the planned soil excavation and disposal activities described in the August 28, 1963 planning drawing. As such, it is unknown whether the planned soil excavation and burial activities were performed.

Several activities have been performed as part of the RFI process that address this data gap. During development of the RFI Work Plan for the Area I Burn Pit (H&A, 2006b), historical aerial photographs were reviewed for evidence of disturbed soil at the Area I Burn Pit RFI Site. Actual and suspected disturbed soil areas were identified during this review (refer to Figure D.2-2A), and sampling was performed at these areas during the RFI.

In addition, systematic visual inspections were performed in 2008 and 2009 as part of the SSFL-wide debris survey. The purpose of the survey, was to identify areas with surficial debris present, including areas with disturbed surface soil (such as areas with soil mounds present). The debris survey consisted of a pedestrian survey inspection of the visible ground surface. The debris areas identified in Group 1B are shown in Figure J-1 (Appendix J of the Group 1B RFI Report). Sampling was performed, as appropriate, at the debris features identified in Group 1B during the RFI. No evidence of subsurface soil or debris disposal was encountered at any of the debris areas identified in Group 1B. Information on debris areas identified in other SSFL RFI groups is presented in the respective RFI reports. Sampling of debris features in these groups has been completed for some RFI groups and is pending at others.

The Group 10 Reporting Area (the undeveloped land south of the Area I Burn Pit RFI Site) was acquired by Rockwell in 1968 (five years after the 1963 planning drawing was prepared). However, as part of the RFI and based on its proximity to the Area I Burn Pit RFI Site, the Group 10 Reporting Area was evaluated for locations of potential debris burial. Historical aerial photographs were reviewed for evidence of disturbed soil at the Group 10 Reporting Area. Suspect disturbed soil areas identified during the review of aerial photographs and during the SSFL-wide pedestrian debris survey described above were sampled during the RFI. In addition, a location of suspected debris identified by a community member in the Group 10 Reporting Area was investigated. No evidence of buried debris or soil was found in the Group 10 Reporting Area.

Exploratory trenches were advanced at the Area I Burn Pit RFI Site during the 2008 – 2009 field investigation, as presented in the following section. Subsurface debris was observed in several of those trenches, as noted in the trench logs presented in Attachment D2. In particular, debris was observed at the following trenches and subsequently sampled during the RFI:

- TTTS1004/TTTS1005 (located at Former Fire Department Demonstration Area 4, approximately 400 feet west of Concrete Ponds 2 and 3) - Metal debris, glass, ash, and burned materials observed at 0 to 4 feet bgs.
- TTTS1008/TTTS1009 (located at Burn Pit 1, approximately 150 feet northwest of Concrete Ponds 2 and 3) – Burned material observed from 0 to 9 feet bgs.
- TTTS1012/TTTS1013 (located at Earth Pond 3, approximately 50 feet south of Concrete Ponds 2 and 3) – Black burned material with solvent smell observed at 2.5 to 5 feet bgs.

- TTTS1041/TTTS1042 (located potential burial area based on review of historical documents, approximately 200 feet northeast of Concrete Ponds 2 and 3) – Metal debris observed at 2.5 feet bgs.
- TTTS1043/TTTS1044 (located within a few feet and northeast of Concrete Pond 2) – Burned material with minor trash and debris observed at 0 to 6 feet bgs.

It is possible that the debris observed at these locations may represent material that was planned to be excavated from Concrete Ponds 2 and 3. Each of the areas described above has been adequately evaluated as part of the RFI field investigation activities. Therefore, the potential soil burial issue noted in the 1963 planning drawing has been adequately addressed for the Area I Burn Pit RFI Site and no further investigation is warranted.

D.3.2.3 Exploratory Trench Sampling

As part of the 2008 – 2009 field investigation at the Area I Burn Pit RFI Site, 22 exploratory trenches were advanced to bedrock to gain a better understanding of subsurface conditions. The locations of trenches are presented on Figure D.1-1. Trench logs are presented in Attachment D2. Soil samples were collected from the top and bottom of the trenches, and at additional depths if indications of debris or staining were observed.

Soil removed from each trench was segregated from soil removed from other trenches. For the majority of the trenches, soil removed from the trenches was placed in bins and transported off-site to the Clean Harbors Buttonwillow Facility. Soil in one of 22 bins transported to Buttonwillow was characterized as hazardous waste and soil in the remaining 21 bins was characterized as non-hazardous waste. Two additional bins (containing soil from one trench) are planned to be transported to Energy Solutions as low level radiological waste. The low level radiological waste was segregated from the remaining investigation derived waste.

Based on approval provided by DTSC on January 20, 2009 (DTSC, 2009), soil at nine trenches advanced after January 20, 2009 was returned to the trench from which it was excavated.

D.3.3 Key Decision Points

Site assessment was performed to address revised, DTSC-approved requirements for risk assessment and to evaluate new potential Chemical Use Areas. Sampling of new Chemical Use Areas and step-out sampling procedures followed the DTSC-approved work plan protocols for the RFI (MWH, 2005).

Site-specific characterization decision points are described in Table D.3-2A. These decision points represent either assumptions upon which sampling was based, or decisions made during step-out sampling or data evaluation. Programmatic decision points (those common to all RFI sites) are described and included in the RFI Program Report (MWH, 2004).

D.3.4 Soil Matrix and Soil Vapor Findings

All soil and soil vapor sampling results and characterization findings are summarized in Table D.3-2A. The goals of the table are to:

1. Present summaries of sampling results, including the nature and extent of impacts.
2. Describe adequacy of soil and soil vapor characterization and whether sampling is warranted.
3. For areas recommended for CMS evaluation, indicate that soil and soil vapor volumes can be estimated within a factor of 10 for comparison of remedial alternatives.

Goals 2 and 3 are achieved through an iterative evaluation process that takes into account the risk assessment results and CMS recommendations, as well as the soil and soil vapor analytical data. For example, if detected concentrations are sufficiently high to indicate that further evaluation in the CMS will be necessary, the data are considered to be adequate for the purpose of risk assessment. Similarly, the risk assessment results can be used along with the soil and soil vapor analytical results to delineate CMS areas, and to estimate soil and soil vapor volumes within an order of magnitude (Goal 3). Other criteria used to evaluate characterization completeness include the sampling results compared to screening levels, the presence and magnitude of concentration gradients, the types of historical operations and chemical uses, and analytical detection limits.

The evaluation of site characterization soil and soil vapor data for the Area I Burn Pit RFI Site is provided in Tables D.3-3A and D.3-3B.

D.3.4.1 Soil and Soil Vapor Data Presentation

Relevant site information, sampling rationale, analytical results, and evaluation of results are presented in Table D.3-2A, which refers to chemical results that are shown by chemical group category in Figures D.3-1A through D.3-15C. For ease of data evaluation in Table D.3-2A, the Area I Burn Pit RFI Site was split into the following three areas of evaluation, each of which includes its associated down-slope drainages and migration pathways—(1) Earth Ponds 1 and 2, including the western hummocky area; (2) TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3; and (3) eastern hummocky area north of Perimeter Pond. The boundaries for these areas are lines drawn to facilitate data evaluation and are not intended to indicate separate chemical use areas.

- Column 1 – Area of Evaluation Number.
- Column 2 – Area of Evaluation Name.
- Column 3 – Chemical group sampled in a particular Area of Evaluation.
- Column 4 – Sampling scope and rationale for each chemical group in a particular Area of Evaluation.
- Column 5 – Abbreviated summary of sampling results for soil and soil vapor each chemical group in a particular Area of Evaluation. A more detailed RFI sitewide

summary is presented in Section D.3.4.2 below. As appropriate, sample results are compared to established SSFL background concentrations (metals and dioxins only) and/or SSFL RBSLs.[3] The screening levels are displayed in Tables D.3-3A and D.3-3B.

- Column 6 – Assess whether characterization of chemical concentration gradients is sufficient such that the risk assessment reflects the approximate maximum analyte concentration or a concentration sufficiently high to result in risk requiring a recommendation for evaluation during CMS.
- Column 7 – Assess whether the nature and extent of chemicals is defined sufficiently to estimate soil volumes (within a factor of 10) for areas that require further consideration in the CMS (if needed).

D.3.4.2 Soil and Soil Vapor Data Summary

A summary of the chemicals that were detected above screening criteria is provided below by chemical analytical group. Concentrations denoted with a "J" flag indicate the results are estimated below the method reporting limits.

An evaluation of the lateral extent of contamination is presented in this section for the analytes that have been detected in soil and soil vapor at concentrations exceeding RBSLs (and background concentrations for metals and dioxins). The presence of samples with analyte concentrations below screening levels, the presence of bedrock outcrops, and significant elevation changes are used to define the lateral extent of contamination. Where appropriate based on detected concentrations and where sufficient soil thickness is present, the vertical extent of chemical impacts were defined by soil data – either non-detect results or results below background concentrations and/or RBSLs. In most instances, the vertical extent of soil contamination was defined by bedrock (refusal).

D.3.4.2.1 Volatile Organic Compounds

VOCs in Soil Vapor

Ninety-seven soil vapor samples were collected at 62 locations and analyzed for VOCs. Of the 97 samples collected, 83 had detectable levels of VOCs, and results are shown in Figures D.3-1A, D.3-1B, and D.3-9A.

The following 11 VOCs were detected in soil vapor at concentrations exceeding their respective screening levels:

- 1,1,1-Trichloroethane (1,1,1-TCA) was detected in soil vapor above its Residential RBSL of 640 milligrams per cubic meter (mg/m^3) and/or its Ecological RBSL of 38 mg/m^3 in 15 samples at concentrations up to 4,700 mg/m^3 at TTSV1070 (Earth Pond 3) at 4 to 5 feet bgs.
- 1,1,2-Trichloro-1,2,2-trifluoroethane was detected above its Ecological RBSL of 91 mg/m^3 in seven samples collected as follows:

[3] The use of the SRAM-based screening levels for comparison purposes does not serve as a risk assessment. These screening levels are not used to determine the significance of detected chemical concentrations or if a chemical use area will be recommended for further consideration in the CMS, but only to provide the reader another tool to evaluate the characterization data. The SRAM-based screening levels represent conservative concentrations that pose a low level of risk. See Appendix A.

  - TTSV1063 (Earth Pond 3) at 9 to 10 feet bgs (950 mg/m^3)
  - TTSV1070 (Earth Pond 3) at 4 to 5 feet bgs (300 J mg/m^3)
  - TTSV1065 (Earth Pond 3) at 2 to 3 feet bgs (110 mg/m^3)
  - TTSV1059 (Potential former burn pit identified in historical documents located southwest of Concrete Pond 2) at 9 to 10 feet bgs (120 mg/m^3) and 14 to 15 feet bgs (180 mg/m^3)
  - TTSV1026 (Burn Pits 1 and 2) at 9 to 10 feet bgs (110 mg/m^3)
  - TTSV1035 (west of Burn Pit 2) at 11.9 to 12.9 feet bgs (100 mg/m^3)

- 1,1-Dichloroethane (1,1-DCA) was detected above its Residential RBSL of 1.7 mg/m^3 and/or its Ecological RBSL of 36 mg/m^3 in 11 samples collected as follows:
  - TTSV1059 (potential former burn pit identified in historical documents located southwest of Concrete Pond 2) at:
    - 4 to 5 feet bgs (4 mg/m^3)
    - 9 to 10 feet bgs (26 mg/m^3)
    - 14 to 15 feet bgs (76 mg/m^3)
  - TTSV1060 (Concrete Pond 2) at 4 to 5 feet bgs (12 mg/m^3) and 9 to 10 feet bgs (52 mg/m^3)
  - TTSV1016 (geophysical anomalies west of 1982 Excavations 1 through 3) at 5.6 to 6.6 feet bgs (9.6 mg/m^3)
  - TTSV1088 (northwest of geophysical anomalies west of 1982 Excavations 1 through 3) at 8.5 to 9.5 feet bgs (2.7 mg/m^3)
  - TTSV1030 (1982 excavation 4) at 5 to 6 feet bgs (7.5 mg/m^3) and 6.3 to 7.3 feet bgs (3.2 mg/m^3)
  - TTSV1057 (Control Center) at 9 to 10 feet bgs (6.9 mg/m^3)
  - TTSV1063 (Earth Pond 3) at 9 to 10 feet bgs (3.7 mg/m^3)
- 1,1-Dichloroethene (1,1-DCE) was detected in soil vapor above its Residential RBSL of 58 mg/m^3 and/or its Ecological RBSL of 0.6 mg/m^3 in 50 samples at concentrations up to 410 mg/m^3 at TTSV1070 (Earth Pond 3) at 4 to 5 feet bgs.
- Benzene was detected above its Residential RBSL of 0.095 mg/m^3 and its Ecological RBSL of 0.57 mg/m^3 in one sample collected from the central portion of SWMU 4.8 at TTSV1060 (Concrete Pond 2) at 4 to 5 feet bgs (0.58 mg/m^3).
- Carbon tetrachloride was detected above its Residential RBSL of 0.063 mg/m^3 and its Ecological RBSL of 0.63 mg/m^3 in one sample collected from Earth Pond 3 at TTSV1065 at 2 to 3 feet bgs (3.4 mg/m^3).

- Chloroform was detected above its Residential RBSL of 0.5 mg/m^3 and its Ecological RBSL of 0.24 mg/m^3 in three samples collected as follows:
  - TTSV1065 (Earth Pond 3) at 2 to 3 feet bgs (2.5 mg/m^3)
  - TTSV1057 (Control Center) at 9 to 10 feet bgs (1.2 mg/m^3)
  - TTSV1059 (potential former burn pit identified in historical documents located southwest of Concrete Pond 2) at 9 to 10 feet bgs (1.1 J mg/m^3)
- Cis-1,2-Dichloroethene (cis-1,2-DCE) was detected above its Residential RBSL of 10 mg/m^3 and/or its Ecological RBSL of 1.9 mg/m^3 in 10 samples collected from the central portion of SWMU 4.8 as follows:
  - TTSV1060 (Concrete Pond 2) at 4 to 5 feet bgs (190 mg/m^3) and 9 to 10 feet bgs (950 mg/m^3)
  - TTSV1059 (potential former burn pit identified in historical documents located southwest of Concrete Pond 2) at 9 to 10 feet bgs (4.4 mg/m^3) and 14 to 15 feet bgs (13 mg/m^3)
  - TTSV1057 (Control Center) at 9 to 10 feet bgs (6.7 mg/m^3)
  - TTSV1042 (potential former drum and equipment storage area identified in aerial photographs located northeast of Concrete Pad 2) at 8 to 9 feet bgs (4.8 mg/m^3)
  - TTSV1030 (1982 Excavation 4) at 5 to 6 feet bgs (88 mg/m^3) and 6.3 to 7.3 feet bgs (34 mg/m^3)
  - TTSV1016 (three geophysical anomalies located northwest of 1982 Excavations 1 through 3) at 5.6 to 6.6 feet bgs (2.9 mg/m^3)
  - TTSV1063 (southwest corner of Earth Pond 3 area) at 9 to 10 feet bgs (2.2 mg/m^3)
- Tetrachloroethene (PCE) was detected in soil vapor above its Residential RBSL of 0.45 mg/m^3 and/or its Ecological RBSL of 24 mg/m^3 in 10 samples at concentrations up to 56 mg/m^3 at TTSV1060 (Concrete Pond 2) at 9 to 10 feet bgs.
- Toluene was detected in soil vapor above its Ecological RBSL of 0.084 mg/m^3 in three samples collected from TTSV1047 (potential migration pathway west of Concrete Pond 2) as follows:
  - 9 to 10 feet bgs (0.13 mg/m^3)
  - 14 to 15 feet bgs (0.14 mg/m^3)
  - 24 to 25 feet bgs (0.11 mg/m^3)
- TCE was detected above its Residential RBSL of 1.4 mg/m^3 and/or its Ecological RBSL of 6.4 mg/m^3 in 44 samples at concentrations up to 9,400 mg/m^3 at Earth Pond 3 at TTSV1070 (4 to 5 feet bgs). Staining and chemical odors were encountered at 3.4 to 5 feet bgs at TTSV1070, and weathered bedrock was encountered at 5 feet bgs.

  In addition to Earth Pond 3, TCE was detected in soil vapor at concentrations above its RBSLs at the following Area I Burn Pit RFI Site features:
  - Earth Pond 1 (TTSV1005)

  - Former Fire Demonstration Area 4 (TTSV1014 and TTSV1015)
  - Potential drum and equipment storage area identified in aerial photographs located west of Burn Pits 1 and 2 (TTSV1034, TTSV1035)
  - Potential drum and equipment storage area identified in aerial photographs located north of Concrete Pad 2 (TTSV1042)
  - Three geophysical anomalies located northwest of 1982 Excavations 1 through 4 (TTSV1015, TTSV1016, TTSV1017, TTSV1018)
  - 1982 Excavations 1 through 4 (TTSV1024, TTSV1025, TTSV1026, TTSV1030, TTSV1031, TTSV1033)
  - Northwest of three geophysical anomalies located northwest of 1982 Excavations 1 through 4 (TTSV1088)
  - 1982 Excavation 5 (TTSV1058)
  - Control Center (TTSV1057)
  - Concrete Pond 2 (TTSV1060)
  - Potential migration pathway west of Concrete Pond 2 (TTSV1047)
  - Potential former burn pit identified in historical documents located southwest of Concrete Pond 2 (TTSV1059)
  - Earth Pond 3 (TTSV1065, TTSV1066, TTSV1069, TTSV1070)
  - Potential former burn pit identified in historical documents located west of Earth Pond 3 (TTSV1061, TTSV1062, TTSV1063)

- Vinyl chloride was detected above its Residential RBSL of 0.035 mg/m^3 in two samples collected as follows:
  - TTSV1088 (northwest of three geophysical anomalies located northwest of 1982 Excavations 1 through 4) 8.5 to 9.5 feet bgs (0.18 mg/m^3)
  - TTSV1016 (three geophysical anomalies located northwest of 1982 Excavations 1 through 3) at 5.6 to 6.6 feet bgs (0.13 J mg/m^3)

The following VOCs were detected in soil vapor at concentrations that did not exceed their respective RBSLs.

- dichlorodifluoromethane
- trans-1,2-dichloroethene (trans-1,2-DCE)
- trichlorofluoromethane

Further information on results of VOCs detected in soil vapor at the Area I Burn Pit RFI Site is presented in Table 3-3B.

Soil vapor sampling was also attempted at 27 additional locations during the RFI sampling event in 2008-2009. However, no vapor samples could be collected at these locations due to the presence of shallow weathered bedrock (less than 3 feet bgs) or insufficient flow from

the soil vapor wells to allow sample collection. Attempted soil vapor samples are shown in Figures D.3-1A and D.3-1B. Attempted soil vapor samples were located throughout the Area I Burn Pit RFI Site but were particularly prevalent in the eastern hummocky area and far southern portion of SWMU 4.8 where weathered bedrock was extremely shallow.

Volatile Organic Compounds in Soil

A total of 630 soil samples was collected at 333 locations and analyzed for VOCs. Of the 630 samples, 271 samples had detectable levels of VOCs. Results are shown in Figures D.3-1C through D.3-1E and D.3-9B through D.3-9J.

The following 23 VOCs were detected in soil at concentrations exceeding their respective screening levels:

- 1,1,1,2-Tetrachloroethane was detected in soil above its Residential RBSL of 0.00196 milligrams per kilogram (mg/kg) in one sample collected from Earth Pond 3 at TTBS1102 at 4 to 4.5 feet bgs (0.027 J mg/kg).
- 1,1,1-TCA was detected in soil above its Residential RBSL of 1.1 mg/kg in five samples collected as follows:
  - SB_TTF-28 (Earth Pond 3) at 4 to 4.5 feet bgs (110 mg/kg)
  - TTBS1102 (Earth Pond 3) at 4 to 4.5 feet bgs (37 J mg/kg)
  - TTBS1029 (1982 Excavation 2) at 7 to 8 feet bgs (28 J mg/kg)
  - TTBS1090 (Concrete Pond 2) at 9.5 to 10.5 feet bgs (5.1 J mg/kg)
  - TTTS1044 (Concrete Pond 2) at 17 to 17.5 feet bgs (1.4 J mg/kg)
- 1,1,2-Trichloroethane was detected in soil above its Residential RBSL of 0.0012 mg/kg in seven samples collected as follows:
  - TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs (1.7 J mg/kg)
  - TTTS1043 (Concrete Pond 2) at 16 to 16.5 feet bgs (0.004 mg/kg)
  - TTBS1095 (Concrete Pond 2) at 12 to 13 feet bgs (0.0025 mg/kg)
  - TTBS1029 (1982 Excavation 2) at 7 to 8 feet bgs (0.021 mg/kg)
  - TTTS1012 (Earth Pond 3) at 0 to 0.5 foot bgs (0.00219 mg/kg) and 3.5 to 4 feet bgs (0.0189 mg/kg)
  - TTBS1102 (Earth Pond 3) at 0 to 0.5 foot bgs (0.0014 J mg/kg)
- 1,1-DCA was detected in soil above its Residential RBSL of 0.0016 mg/kg in 15 samples at concentrations up to 10 mg/kg at TR_TTF_0229-15 (1982 Excavation 4) at 2 to 3 feet bgs.
- 1,1-DCE was detected in soil above its Residential RBSL of 0.008 mg/kg in eight samples at concentrations up to 2.1 mg/kg at Earth Pond 3 (SB_TTF-28 at 4 to 4.5 feet bgs).
- 1,2,4-Trimethylbenzene was detected in soil above its Residential RBSL of 0.041 mg/kg in three samples collected from Concrete Pond 2:
  - TTTS1044 at 8 to 8.5 feet bgs (3.2 J mg/kg) and 17 to 17.5 feet bgs (4.1 J mg/kg)

  - TTBS1090 at 9.5 to 10.5 feet bgs (1.4 J mg/kg)

- 1,2-Dibromoethane was detected in soil above its Residential RBSL of 0.00024 mg/kg in four samples collected from Earth Pond 3:
  - TTBS1102 at 4 to 4.5 feet bgs (9.7 J mg/kg)
  - TTTS1012 at 0 to 0.5 foot bgs (0.0662 mg/kg) and 3.5 to 4 feet bgs (1.77 mg/kg)
  - TTBS85 at 3 to 3.5 feet bgs (0.033 mg/kg)
- 1,2-Dichloroethane (1,2-DCA) was detected in soil above its Residential RBSL of 0.0005 mg/kg in seven samples as follows:
  - TTBS1102 (Earth Pond 3) at 4 to 4.5 feet bgs (0.026 J mg/kg)
  - TTTS1012 (Earth Pond 3) at 3.5 to 4 feet bgs (0.00146 mg/kg)
  - TTBS1175 (east of Earth Pond 3 in Perimeter Pond spillway) at 0.5 to 1 foot bgs (0.002 J mg/kg)
  - TTTS1044 (Concrete Pond 2) at 17 to 17.5 feet bgs (0.015 J mg/kg)
  - TTTS1043 (Concrete Pond 2) at 16 to 16.5 feet bgs (0.0078 mg/kg)
  - TTBS1095 (Concrete Pond 2) at 7.5 to 8 feet bgs (0.0011 J mg/kg) and 12 to 13 feet bgs (0.0024 mg/kg)
- 1,3,5-Trimethylbenzene was detected in soil above its Residential RBSL of 0.036 mg/kg in three samples collected from Concrete Pond 2:
  - TTTS1044 at 8 to 8.5 feet bgs (1.5 J mg/kg) and 17 to 17.5 feet bgs (2.2 J mg/kg)
  - TTBS1090 at 9.5 to 10.5 feet bgs (0.65 J mg/kg)
- Benzene was detected in soil above its Residential RBSL of 0.00013 mg/kg in 12 samples at concentrations up to 0.029 J mg/kg at TTTS1044 (Concrete Pond 2) at 17 to 17.5 feet bgs.
- Bromodichloromethane was detected in soil above its Residential RBSL of 0.00031 mg/kg in two samples collected from Earth Pond 3:
  - TTBS1102 at 4 to 4.5 feet bgs (0.0049 J mg/kg)
  - TTTS1012 at 3.5 to 4 feet bgs (0.000413 J mg/kg)
- Carbon disulfide was detected in soil above its Residential RBSL of 0.068 mg/kg in one sample collected from Earth Pond 2 at TR_TTF_0229-6 at 1 foot bgs (1 mg/kg).
- Carbon tetrachloride was detected in soil above its Residential RBSL of 0.000042 mg/kg in three samples collected from Earth Pond 3:
  - SB_TTF-28 at 4 to 4.5 feet bgs (1.2 mg/kg)
  - TTTS1012 at 0 to 0.5 feet bgs (0.000779 J mg/kg) and at 3.5 to 4 feet bgs (0.0118 mg/kg)

- Chloroform was detected in soil above its Residential RBSL of 0.00077 mg/kg in 10 samples at concentrations up to 0.093 J mg/kg at TTBS1102 (Earth Pond 3) at 4 to 4.5 feet bgs.
- Cis-1,2-DCE was detected in soil above its Residential RBSL of 0.014 mg/kg in eight samples collected from the Concrete Pond 2 area as follows:
  - TTBS1090 (Concrete Pond 2) at 9.5 to 10.5 feet bgs (2.8 J mg/kg)
  - TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs (0.097 J mg/kg) and 17 to 17.5 feet bgs (0.14 J mg/kg)
  - TTTS1043 (Concrete Pond 2) at 16 to 16.5 feet bgs (0.11 mg/kg)
  - TTBS1092 (south of Concrete Pond 2) at 6.3 to 7.3 feet bgs (0.0381 mg/kg)
  - TTBS1095 (Concrete Pond 2) at 7.5 to 8 feet bgs (0.026 mg/kg) and 12 to 13 feet bgs (0.037 mg/kg)
  - TTTS1010 (between Concrete Pond 2 and Earth Pond 3) at 15 to 15.5 feet bgs (0.019 mg/kg)
- Ethylbenzene was detected in soil above its Residential RBSL of 0.0046 mg/kg in five samples collected as follows:
  - TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs (0.21 J mg/kg) and 17 to 17.5 feet bgs (0.12 J mg/kg)
  - TTBS1090 (Concrete Pond 2) at 9.5 to 10.5 feet bgs (0.091 J mg/kg)
  - TTBS1095 (Concrete Pond 2) at 7.5 to 8 feet bgs (0.0048 mg/kg)
  - TTBS1102 (Earth Pond 3) at 4 to 4.5 feet bgs (0.1 J mg/kg)
- Methylene chloride was detected in soil above its Residential RBSL of 0.004 mg/kg in 18 samples at concentrations up to 2 mg/kg TR_TTF_0229-9 (west of Concrete Pad 2) at 1 foot bgs and TR_TTF_0229-15 (1982 Excavation 4) at 2 to 3 feet bgs.
- m-Xylene and p-Xylene were detected in soil above the Residential RBSL of 0.15 mg/kg in four samples collected from the Concrete Pond 2 area:
  - TTTS1044 at 8 to 8.5 feet bgs (1.1 J mg/kg) and 17 to 17.5 feet bgs (1.6 J mg/kg)
  - TTBS1090 at 9.5 to 10.5 feet bgs (0.61 J mg/kg)
  - TTBS1102 at 4 to 4.5 feet bgs (0.17 J mg/kg)
- o-Xylene was detected in soil above its Residential RBSL of 0.19 mg/kg in three samples collected from the Concrete Pond 2 area:
  - TTTS1044 at 8 to 8.5 feet bgs (0.68 J mg/kg) and 17 to 17.5 feet bgs (1.2 J mg/kg)
  - TTBS1090 at 9.5 to 10.5 feet bgs (0.53 J mg/kg)
- n-Propylbenzene was detected in soil above its Residential RBSL of 0.2 mg/kg in one sample collected from Concrete Pond 2 at TTTS1044 at 8 to 8.5 feet bgs (0.44 J mg/kg).

- PCE was detected in soil above its Residential RBSL of 0.00043 mg/kg in 15 samples at concentrations up to 4.8 mg/kg at Earth Pond 3 (SB_TTF-28 at 4 to 4.5 feet bgs).

  In addition to Earth Pond 3, PCE was also detected in soil at concentrations above its RBSLs at the following Area I Burn Pit RFI Site features:

  – Concrete Pond 2 (TTBS1090 and TTBS1095)

  – Potential former burn pit identified in historical documents located southwest of Concrete Pond 2 (TTTS1010)

  – 1982 Excavations 1 and 2 (TTBS1028 and TTBS1029)

  – southwest of Concrete Pad 2 (TTBS1084)

  – Earth Pond 2 (TTBS1013)

- Toluene was detected in soil above its Residential RBSL of 0.23 mg/kg and/or its Ecological RBSL of 3.4 mg/kg in four samples collected as follows:

  – TR_TTF_0229-19 (1982 Excavation 4) at 3 feet bgs (4 mg/kg)
  – TR_TTF_0229-17 (1982 Excavation 4) at 3 feet bgs (3 mg/kg)
  – TR_TTF_0229-20 (1982 Excavation 4) at 3 feet bgs (2 mg/kg)
  – SB_TTF-28 (Earth Pond 3) at 4 to 4.5 feet bgs (0.34 mg/kg)

- TCE was detected in soil above its Residential RBSL of 0.0022 mg/kg and/or its Ecological RBSL of 3 mg/kg in 77 samples at concentrations up to 190 mg/kg at Earth Pond 3 at SB_TTF-28 (4 to 4.5 feet bgs).

  In addition to Earth Pond 3, TCE was detected in soil at concentrations above its RBSLs at the following Area I Burn Pit RFI Site features:

  – Control Center (TTBS1057)

  – Between Control Center and Concrete Ponds 2 and 3 (TTBS1097)

  – Concrete Pond 2 (SB_TTF-24, SB_TTF-25, TTBS1090, TTBS1095, TTTS1043, TTTS1044)

  – Potential former burn pit identified in historical documents located southwest of Concrete Pond 2 (TTTS1010 and TTTS1011)

  – Between Concrete Pond 2 and Earth Pond 3 (TTBS1092 and TTBS1094)

  – Potential migration pathway west of Concrete Pond 2 (TTBS1148 and TTBS1180)

  – Earth Pond 3 (TTBS1101, TTBS1102, TTBS85, TTTS1012, TTTS1013, TTTS1014, TTTS1015, TTTS1016)

  – Potential migration pathway east of Earth Pond 3 (TTBS1154)

  – 1982 Excavations 1 through 4 (TTBS1028, TTBS1029, TTBS1030, TTBS1031, TTBS1035, TTBS1036, TTBS1037, TTBS1038, TTBS1039, TTBS1105, TR_TTF_0229-15)

- 1982 Excavation 5 (TTBS1040)
- Potential former burn pit identified in aerial photographs located in the central portion of SWMU 4.8 near the southern boundary (TTBS1041)
- Geophysical anomaly located east of 1982 Excavation 4 (TTBS1044)
- Southwest of Concrete Pad 2 (TTBS1045 and TTBS1084),
- North of Earth Pond 1 (TTBS1255)

The following VOCs were detected in soil at concentrations that did not exceed their respective RBSLs.

- 1,1,2-Trichloro-1,2,2-trifluoroethane
- 1,2,3-Trichlorobenzene
- 1,4-Dioxane
- Acetone
- Trichlorofluoromethane
- Methyl ethyl ketone
- styrene
- sec-Butylbenzene
- Methyl isobutyl ketone
- Chlorobenzene
- Cumene
- trans-1,2-DCE
- Formaldehyde
- p-Cymene

In addition, the following VOCs were detected, but RBSLs have not been established:

- Bromobenzene
- Bromoform
- Dibromochloromethane
- Dibromomethane
- n-Butylbenzene

Further information on results of VOCs detected in soil at the Area I Burn Pit RFI Site is presented in Table 3-3A.

VOCs were detected in soil and soil vapor above RBSLs in four general areas at the Area I Burn Pit RFI Site.

- Earth Ponds 1 and 2 –The lateral extent of VOCs in soil vapor is defined to the south by samples with non-detect results for VOCs. Concentrations of VOCs in soil decrease to values below RBSLs in samples collected outside the Earth Pond 2 boundary and to non-detect values in samples collected from the drainages down slope of Earth Ponds 1 and 2. Lateral step-out soil vapor sampling was attempted to the north, east, and west of Earth Pond 1; however, soil vapor probes could not be installed due to shallow weathered bedrock (less than 3 feet bgs). Soil vapor probe refusal locations are shown in Figures D.3-1A and D.3-1B. Burned material was identified in several locations during trenching in this area.
- Former Fire Demonstration Area 4 (including 1982 Excavations 1 through 3 and three geophysical anomalies) – The lateral extent of VOCs in soil and soil vapor (1,1,1-TCA, 1,1,2-TCA; 1,1-DCA; 1,1-DCE; benzene; chloroform; PCE; and/or TCE) in this area is defined by surrounding samples with results below RBSLs or with no detectable VOCs. In addition, three additional lateral step-out soil vapor probes were attempted to better define the extent of VOCs in soil vapor west and southwest of this area, but could not be installed due to refusal on shallow weathered bedrock (Figures D.3-1A and D.3-1B). Partially melted metal debris, ash, glass, black stained soil, and a solvent odor were

encountered during trenching in this area (TTTS1004, TTTS1005, TTTS1006, and TTTS1007).

- Burn Pits 1 and 2 and Concrete Pads 1 and 2 (including 1982 Excavations 4 and 5, and northern SWMU 4.8 boundary area) – The lateral extent of VOCs in soil in this area is defined by surrounding and down slope samples with results below RBSLs or with no detectable VOCs. In addition, several additional soil vapor probes were attempted to better define the extent of VOCs in soil vapor north and south of this area, but could not be installed due to refusal on shallow weathered bedrock (Figures D.3-1A and D.3-1B). Burned debris was encountered during trenching at Burn Pit 1 in the southwest corner of the trench.

- Concrete Pond 2 and Earth Pond 3 (including the Control Center and three geophysical anomalies east of Earth Pond 3) – The lateral extent of VOCs in soil in this area is defined by up slope and down slope samples with results below RBSLs or with no detectable VOCs. The lateral extent of VOCs in soil vapor in this area is defined to the south and west (down slope) by samples with results below RBSLs or with no detectable VOCs. Although the lateral extent of VOCs in soil vapor is not defined to the east and north, many attempts were made to install additional soil vapor probes in these directions. Soil vapor probes could not be installed due to refusal on shallow weathered bedrock. Stained soil, burned material/trash, wire, plastic, glass debris, and burned material with solvent odor were encountered during trenching in this area (TTTS1012 through TTTS1016, TTTS1043 and TTTS1044).

VOCs in soil are not migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by surface soil samples collected throughout the major western and eastern drainages south of SWMU 4.8 (Figure D.3-1E) at locations extending into the RFI Group 10 Reporting Area. VOCs were generally not detected in downstream drainage samples. VOCs were detected in one surface soil sample collected from the drainages south of the RFI site (TTBS1195). In this sample, collected approximately 300 to 500 feet south of the SWMU 4.8 southern boundary in the far western drainage channel, total xylenes were detected at a concentration of 0.0053 mg/kg, and 1,1-DCE was detected at a concentration of 0.00074 J mg/kg. Both of these concentrations are significantly below their corresponding Residential and Ecological RBSLs.

Further characterization of VOCs is not recommended at the Area I Burn Pit RFI Site.

D.3.4.2.2 Semivolatile Organic Compounds

A total of 644 soil samples was collected at 340 locations and analyzed for SVOCs. Of the 644 samples, 292 samples had detectable levels of SVOCs, and results are shown in Figures D.3-2A through D.3-2C, and D.3-10A through D.3-10M.

The following five SVOCs were detected in soil at concentrations exceeding their respective screening levels:

- 1,2-Dichlorobenzene was detected in soil above its Residential RBSL of 1.8 mg/kg and/or its Ecological RBSL of 370 mg/kg in two samples collected from Earth Pond 3:
  - SB_TTF-28 at 4 to 4.5 feet bgs (460 mg/kg)

  - TTBS1102 at 4 to 4.5 feet bgs (2.3 mg/kg)

- 1,4-Dichlorobenzene was detected in soil above its Residential RBSL of 0.006 mg/kg in six samples as follows:
  - SB_TTF-28 (Earth Pond 3) at 4 to 4.5 feet bgs (8.2 mg/kg)
  - TTBS1102 (Earth Pond 3) at 4 to 4.5 feet bgs (1 mg/kg)
  - TTBS1090 (Concrete Pond 2) at 9.5 to 10.5 feet bgs (0.14 J mg/kg)
  - TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs (0.047 J mg/kg) and 17 to 17.5 feet bgs (0.034 J mg/kg)
  - TTBS1095 (Concrete Pond 2) at 7.5 to 8 feet bgs (0.036 mg/kg)
- bis(2-Ethylhexyl) phthalate was detected in soil above its Ecological RBSL of 4.9 mg/kg in seven samples as follows:
  - TTBS1161 (migration pathway in southwestern portion of the eastern hummocky area) at 0 to 0.5 foot bgs (29 J mg/kg)
  - TTTS1012 (Earth Pond 3) at 0 to 0.5 foot bgs (20.8 mg/kg)
  - TTBS1029 (1982 Excavation 2) at 7 to 8 foot bgs (9.5 mg/kg)
  - TTBS1028 (1982 Excavation 1) at 5 to 6 feet bgs (6.2 mg/kg)
  - TTBS1014 (Earth Pond 2) at 0 to 0.5 foot bgs (8.9 J mg/kg)
  - TTBS1192 (Perimeter Pond RFI Site northern spillway) at 0.5 to 1 foot bgs (5.3 mg/kg)
  - TTBS1073 (Burn Pit 2) at 0 to 0.5 foot bgs (5.2 J mg/kg)
- Di-n-butyl phthalate was detected in soil above its Ecological RBSL of 0.49 mg/kg in two samples as follows:
  - TR_TTF_0229-18 (1982 Excavation 4) at 2 feet bgs (1 mg/kg)
  - TR_TTF_0229-9 (northeast of 1982 Excavation 4) at 1 foot bgs (1 mg/kg)
- Pentachlorophenol was detected in soil above its Residential RBSL of 8.8 mg/kg and Ecological RBSL of 6 mg/kg in one sample collected from SB_TTF-4 (Concrete Pad 2) at 0 to 0.5 foot bgs (4,000 mg/kg).
- Various polynuclear aromatic hydrocarbon (PAH) compounds exceeded Residential RBSLs and/or Ecological RBSLs:
  - Acenaphthene was detected in soil above its Ecological RBSL of 2.5 mg/kg in one sample collected from TTBS1120[4] at 0 to 0.5 foot bgs (3.8 mg/kg).

[4] TTBS1120 is located south of Concrete Pad 2 in the central portion of the Area I Burn Pit RFI Site, just north of the SWMU 4.8 southern boundary. Most PAHs exceeding RBSLs were detected in soil samples collected in this shallow-bedrock area.

- Anthracene was detected in soil above its Ecological RBSL of 2.4 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (8.5 mg/kg).
- Benzo(a)anthracene was detected in soil above its Residential RBSL of 0.6 mg/kg and its Ecological RBSL of 1.4 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (16 mg/kg).
- Benzo(a)pyrene was detected in soil above its Residential RBSL of 0.06 mg/kg and its Ecological RBSL of 5.6 mg/kg in 14 samples at concentrations up to 16 mg/kg at TTBS1120 (0 to 0.5 foot bgs).
- Benzo(b)fluoranthene was detected in soil above its Residential RBSL of 0.6 mg/kg and its Ecological RBSL of 4.4 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (19 mg/kg).
- Benzo(g,h,i)perylene was detected in soil above its Ecological RBSL of 6.4 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (9.8 mg/kg). Residential RBSLs for benzo(g,h,i)perylene have not been established.
- Benzo(k)fluoranthene was detected in soil above its Residential RBSL of 0.6 mg/kg and its Ecological RBSL of 5.8 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (8.5 mg/kg).
- Chrysene was detected in soil above its Residential RBSL of 6 mg/kg and its Ecological RBSL of 2.4 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (16 mg/kg).
- Dibenzo(a,h)anthracene was detected in soil above its Residential RBSL of 0.17 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (2.5 mg/kg).
- Fluoranthene was detected in soil above its Ecological RBSL of 38 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (39 mg/kg).
- Fluorene was detected in soil above its Ecological RBSL of 1.6 mg/kg in two samples collected from TTBS1120 at 0 to 0.5 foot bgs (4.1 mg/kg) and TR_TTF_0229-17 (1982 Excavation 4) at 3 feet bgs (2 mg/kg).
- Indeno(1,2,3-cd)pyrene was detected in soil above its Residential RBSL of 0.6 mg/kg and its Ecological RBSL of 5.8 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (8.9 mg/kg).
- Phenanthrene was detected in soil above its Ecological RBSL of 1.3 mg/kg in two samples collected from TTBS1120 at 0 to 0.5 foot bgs (35 mg/kg) and TR_TTF_0229-19 (1982 Excavation 4) at 3 feet bgs (2 mg/kg).
- Pyrene was detected in soil above its Ecological RBSL of 18 mg/kg in one sample collected from TTBS1120 at 0 to 0.5 foot bgs (31 mg/kg).

The following SVOCs were detected in soil at concentrations that did not exceed their respective RBSLs:

- 1,2,4-Trichlorobenzene
- 1,3-Dichlorobenzene
- 1-Methyl naphthalene
- 2,4-Dimethylphenol
- n-Nitrosodimethylamine (NDMA)
- 2-Methylnaphthalene
- Acenaphthylene
- Benzoic acid
- Naphthalene
- Phenol
- Butyl benzyl phthalate
- Dibenzofuran
- Diethyl phthalate
- Benzyl alcohol
- p-Cresol
- Dimethyl phthalate
- o-Cresol
- p-Chloro-m-cresol
- Hexachlorobutadiene
- Di-n-octyl phthalate

The following SVOCs were detected, but RBSLs have not been established:

- NDMA as Diphenylamine
- Mercaptans
- Tetrachlorophenol

Further information on results of SVOCs detected in soil at the Area I Burn Pit RFI Site is presented in Table 3-3A.

SVOCs were detected in soil above RBSLs in seven areas at the Area I Burn Pit RFI Site.

- Western Hummocky Area – The lateral extent of benzo(a)pyrene in the western hummocky area is defined to the east, south, and west by 13 surrounding and down slope soil samples with results below RBSLs. Additional characterization is recommended in the western hummocky area to define the lateral extent of benzo(a)pyrene to the north of TTBS1189.

- Earth Pond 2 – The lateral extent of SVOCs in Earth Pond 2 is defined by 23 surrounding and down slope soil samples with results below RBSLs or with no detectable SVOCs.. Burned material was identified in several locations during trenching in this area on both sides of the trenches.

- 1982 Excavations 1 and 2 – The lateral extent of SVOCs in this area is defined by 13 surrounding and down slope samples with results below RBSLs or with no detectable SVOCs.

- Potential former drum and storage area in central portion of the Area I Burn Pit RFI Site, north of southern SWMU 4.8 boundary (TTBS1120) – The lateral extent of SVOCs in soil at TTBS1120 is defined by seven surrounding and one down slope soil samples with results below RBSLs or no detectable SVOCs.

- Burn Pit 2 and Concrete Pad 2 (including 1982 Excavation 4) – The lateral extent of SVOCs in this area is defined by approximately 31 surrounding and down slope soil samples with results below RBSLs or with no detectable SVOCs.

- Concrete Pond 2 and Earth Pond 3 – The lateral extent of SVOCs in this area is defined by approximately 25 surrounding and down slope soil samples with results below RBSLs or with no detectable SVOCs.

- Eastern Hummocky Area- The lateral extent of SVOCs in this area is generally defined to the north, south, east, and west by samples with results below RBSLs or with no detectable SVOCs. Soil samples collected downslope of the eastern hummocky area in the Perimeter Pond spillway did not contain detectable concentrations of SVOCs.

SVOCs in soil are not migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by surface soil samples collected from the western and eastern drainages south of SWMU 4.8. SVOCs were not detected in downstream drainage samples (Figure D.3-2C).

With the exception of benzo(a)pyrene at TTBS1189, further characterization of SVOCs is not recommended at the Area I Burn Pit RFI Site. Additional characterization is recommended in the western hummocky area to define the lateral extent of benzo(a)pyrene to the north of TTBS1189.

D.3.4.2.3 Total Petroleum Hydrocarbons/Terphenyls

A total of 636 soil samples was collected at 319 locations and analyzed for TPHs. Of the 636 samples, 377 samples contained detectable levels of TPH, and results are shown in Figures D.3-3A through D.3-3C and in Figures D.3-11A through D.3-11F.

The following petroleum hydrocarbons were detected in soil at concentrations exceeding their respective screening levels:

- Gasoline-range hydrocarbons (C4-C12) were detected above the Residential RBSL of 1.1 mg/kg in 13 samples at concentrations up to 840 mg/kg at TTTS1044 (Concrete Pond 2) at 17 to 17.5 feet bgs.
- Jet fuel-range hydrocarbons (C8-C11) were detected above the Residential RBSL of 1.1 mg/kg in 31 samples collected from 18 locations at concentrations up to 1,900 mg/kg at TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs.
- Kerosene-range hydrocarbons (C12-C14) were detected above the Residential RBSL of 1,400 mg/kg in four samples collected as follows:
  - TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs (5,100 J mg/kg) and 17 to 17.5 feet bgs (2,400 J mg/kg)
  - TTTS1010 (Potential former burn pit identified in historical documents located southwest of Concrete Pond 2) at 15 to 15.5 feet bgs (2,700 mg/kg)
  - TTBS1090 (Concrete Pond 2) at 9.5 to 10.5 feet bgs (2,300 mg/kg)
- Diesel-range hydrocarbons (C15-C20) were detected above the Residential RBSL of 1,400 mg/kg in one sample collected from SB_TTF-28 (Earth Pond 3) at 4 to 4.5 feet bgs (4,400 mg/kg).

Lubricant oil-range hydrocarbons (C21-C30) were detected at concentrations that did not exceed the Residential RBSL of 1,400 mg/kg.

Further information on results of TPH detected in soil at the Area I Burn Pit RFI Site is presented in Table 3-3A.

TPH concentrations were detected in soil above RBSLs in five areas at the Area I Burn Pit RFI Site.

- Earth Pond 1 – The lateral extent of jet fuel-range hydrocarbons is defined to the north, south, east, and downslope/west by 16 soil samples with concentrations below RBSLs. Burned material was identified in several locations during trenching in this area on both sides of the trenches.
- 1982 Excavations 1 and 2 – The lateral extent of gasoline-range hydrocarbons in this area is defined by surrounding and down slope samples with results below RBSLs or with no detectable TPH.
- 1982 Excavation 4 – The lateral extent of TPH in this area is defined by surrounding and down slope soil samples with results below RBSLs or with no detectable SVOCs.
- Concrete Pond 2 and Earth Pond 3 – The lateral extent of TPH in this area is defined by approximately 30 surrounding and down slope samples with results below RBSLs.
- Eastern Hummocky Area – The lateral extent of TPH in this area is generally defined to the west, north, east, and south/southeast by samples with results below RBSLs. Although the lateral extent of TPH is not defined to the north of the northernmost exceedance (TTBS1129), the detected concentration (2.2 mg/kg) is not significantly above the RBSL (1.4 mg/kg) and benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected, indicating that hydrocarbon impacts to soil are limited.

TPH concentrations in soil are not migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by soil samples collected from the western and eastern drainages south of SWMU 4.8. TPHs were not detected or were detected at concentrations that do not exceed RBSLs in downstream drainage samples (Figure D.3-3C). Gasoline-range hydrocarbons (C4-C12) were detected at TTBS1200 (in the eastern drainage south of SWMU 4.8) at concentrations of 0.0583 J mg/kg (surface soil) and 0.0184 J mg/kg (4 to 5 feet bgs). Both of these concentrations are significantly below the Residential RBSL of 1.1 mg/kg. Diesel-range hydrocarbons (C15-C20) were detected in the southern drainages at concentrations of 1.6 J mg/kg at TTBS1195 (surface soil), 1.7 J mg/kg at TTBS1198 (surface soil), 2 J mg/kg at TTBS1194 (0.5 to 1.5 feet bgs), 2 J mg/kg at TTBS1204 (0.5 to 1.5 feet bgs), 2.1 J mg/kg at TTBS1194 (0.5 to 1.5 feet bgs), 4.6 J mg/kg at TTBS1204 (surface soil), 5.49 mg/kg at TTBS1200 (4 to 5 feet bgs), and 11.1 mg/kg at TTBS1200 (surface soil). These concentrations are significantly below the corresponding Residential RBSL of 1,400 mg/kg.

Further characterization of TPH is not recommended at the Area I Burn Pit RFI Site.

D.3.4.2.4 Polychlorinated Biphenyls

A total of 545 samples was collected at 264 locations and analyzed for PCBs. Of the 545 samples, 199 had detectable concentrations of PCBs. Results are presented in Figures D.3-4A through D.3-4C, and D.3-11A through D.3-11F.

- Aroclor 1248 was detected in soil above its Residential RBSL of 0.14 mg/kg and/or its Ecological RBSL of 0.011 mg/kg in seven samples collected as follows:

  - TTBS1027 (Former Fire Department Demonstration Area 4) at 0 to 0.5 foot bgs (3.08 J mg/kg)
  - TTBS1039 (1982 Excavation 4) at 4 to 5 feet bgs (0.52 J mg/kg)
  - TTBS1002 (Earth Ponds 1 and 2) at 4 to 5 feet bgs (0.112 mg/kg)
  - TTBS1009 (migration pathway east of Earth Pond 2) at 0 to 0.5 foot bgs (0.0589 mg/kg)
  - TTBS1119 (northern SWMU 4.8 boundary area) at 0 to 0.5 foot bgs (0.08 mg/kg)
  - TTBS1068 (former nitrogen tetroxide tank) at 1.5 to 2 (0.0316 mg/kg)
  - TTTS1011 (Potential former burn pit identified in historical documents located southwest of Concrete Pond 2) at 19 to 19.5 (0.0418 mg/kg)
- Aroclor 1254 was detected above its Residential RBSL of 0.14 mg/kg and/or its Ecological RBSL of 0.078 mg/kg in 65 samples at concentrations up to 8.9 mg/kg at Concrete Pond 2 (TTBS1095, 0 to 0.5 foot bgs).
- Aroclor 1260 was detected above its Residential RBSL of 0.14 mg/kg and/or its Ecological RBSL of 0.078 mg/kg in 14 samples at concentrations up to 1.04 mg/kg at TTBS1040 (1982 Excavation 5) at 0 to 0.5 foot bgs.
- Aroclor 1242 was detected in soil at concentrations below its RBSLs.

PCBs were detected in soil above their respective RBSLs in seven areas at the Area I Burn Pit RFI Site.

- Western Hummocky Area – The lateral extent of Aroclor 1254 and Aroclor 1260 in the western hummocky area is defined to the south, east, and west by 10 surrounding and down slope samples with results below RBSLs. Additional characterization is recommended to define the lateral extent of Aroclor 1254 and Aroclor 1260 north of TTTS1025.
- Earth Ponds 1 and 2 – The lateral extent of Aroclor 1248, Aroclor 1254, and Aroclor 1260 around Earth Ponds 1 and 2 is defined by 15 surrounding and downslope samples with no detectable concentration of PCBs. Burned material was identified in several locations during trenching in this area on both sides of the trenches.
- Former Fire Department Demonstration Area 4 – The lateral extent of PCBs in this area is defined by nine surrounding and down slope soil samples with no detectable concentration of PCBs. Partially melted metal debris, ash, glass, and black stained soil were encountered during trenching in this area.
- 1982 Excavation 4 – The lateral extent of PCBs in this area is defined by eight surrounding and down slope soil samples with results below RBSLs or with no detectable PCBs.
- Concrete Ponds 2 and 3, Earth Pond 3, and 1982 Excavation 5 – The lateral extent of PCBs in this area is defined by approximately 22 surrounding and down slope soil samples with results below RBSLs or with no detectable PCBs.

- Northern SWMU 4.8 Boundary Area – The lateral extent of PCBs in the northern SWMU 4.8 boundary area (TTBS1119 and TTBS1068) is generally defined by nine surrounding soil samples with results below RBSLs or with no detectable PCBs.
- Eastern Hummocky Area – The lateral extent of PCBs in the eastern hummocky area is generally defined to the east, west, and south by approximately 12 samples with results below RBSLs or with no detectable PCBs. While the lateral extent of PCB impacts are not defined north of TTBS1129, north is the upslope direction. Downslope samples had results below RBSLs.

PCBs in soil are not migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by soil samples collected from the western and eastern drainages south of SWMU 4.8. PCBs were not detected or were detected at concentrations that do not exceed RBSLs in downstream drainage samples (Figure D.3-4C). PCBs were detected at concentrations significantly below the corresponding RBSLs in surface soil samples collected from the eastern drainage south of SWMU 4.8 (at TTBS1200, TTBS1201, TTBS1202, and TTBS1203).

With the exception of PCBs at TTTS1025, further characterization of PCBs is not recommended at the Area I Burn Pit RFI Site. Additional characterization is recommended to define the lateral extent of PCBs north of TTTS1025.

D.3.4.2.5 Metals/Inorganic Compounds

A total of 697 soil samples was collected at 387 locations and analyzed for metals. Of the 697 samples, 695 had detectable concentrations of metals and results are shown in Figures D.3-5A through D.3-5D and D.3-12A through D.3-12I.

- Twenty metals were detected above their respective background concentrations and Residential and/or Ecological RBSLs:
  - Aluminum (background concentration of 20,000 mg/kg and Ecological RBSL of 12 mg/kg) was detected above its background concentration and Ecological RBSL in 30 soil samples with concentrations up to 37,000 mg/kg at TTBS1097 (between the Control Center and Concrete Ponds 2 and 3) at 4 to 5 feet bgs.
  - Antimony (background concentration of 8.7 mg/kg and Ecological RBSL of 0.095 mg/kg) was detected above its background concentration and Ecological RBSL in one sample collected from TTBS1149 (potential migration pathway located west of Earth Pond 3) at 1.75 to 2.75 feet bgs (29 mg/kg).
  - Arsenic (background concentration of 15 mg/kg, Residential RBSL of 0.095 mg/kg, and Ecological RBSL of 1.9 mg/kg) was detected above its background concentration, Residential RBSL, and Ecological RBSL in three samples collected as follows:
    - TTBS1064 (Potential former drum and/or equipment storage area located north of the Control Center) at 2 to 3 feet bgs (21 mg/kg)
    - TTTS1000 (Earth Pond 2) at 0 to 0.5 foot bgs (20.4 mg/kg)
    - TTBS1040 (1982 Excavation 5) at 3.5 to 4 feet bgs (16 mg/kg)

- Barium (background concentration of 140 mg/kg and Ecological RBSL of 15 mg/kg) was detected above its background concentration and Ecological RBSL in eight samples with concentrations up to 372 mg/kg at TTTS1044 (Concrete Pond 2) at 0 to 0.5 foot bgs.
- Boron (background concentration of 9.7 mg/kg and Ecological RBSL of 6.8 mg/kg) was detected above its background concentration and Ecological RBSL in 49 samples with concentrations up to 120 mg/kg at SB_TTF_RR-8 (Former Fire Department Demonstration Area 4) at 0 to 0.5 foot bgs.
- Cadmium (background concentration of 1 mg/kg and Ecological RBSL of 0.021 mg/kg) was detected above its background concentration and Ecological RBSL in 66 samples with concentrations up to 21 mg/kg at SB_TTF-2 (Earth Pond 1) at 0 to 0.5 foot bgs.
- Cobalt (background concentration of 21 mg/kg, Residential RBSL of 23 mg/kg, and Ecological RBSL of 8.9 mg/kg) was detected above its background concentration and Residential RBSL and/or Ecological RBSL in 24 samples with concentrations up to 57 mg/kg at TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs.
- Copper (background concentration of 29 mg/kg and Ecological RBSL of 1.1 mg/kg) was detected above its background concentration and Ecological RBSL in 76 samples with concentrations up to 906 mg/kg at TTBS1149 (potential migration pathway located west of Earth Pond 3) at 1.75 to 2.75 feet bgs.
- Hexavalent chromium (Ecological RBSL of 0.2 mg/kg) was detected above its Ecological RBSL in 23 samples with concentrations up to 1.8 mg/kg at TTTS1044 (Concrete Pond 2) at 0 to 0.5 foot bgs. Background concentrations have not been established for hexavalent chromium.
- Lead (background concentration of 34 mg/kg, Residential RBSL of 150 mg/kg, and Ecological RBSL of 0.063 mg/kg) was detected above its background concentration and Residential RBSL and/or Ecological RBSL in 22 samples with concentrations up to 320 J mg/kg at TTBS1075 (southwestern Burn Pit 2 area) at 0 to 0.5 foot bgs.
- Lithium (background concentration of 37 mg/kg, Residential RBSL of 152 mg/kg, and Ecological RBSL of 10 mg/kg) was detected above its background concentration and Residential RBSL and/or Ecological RBSL in 41 samples with concentrations up to 174 mg/kg at TTBS1007 (Earth Pond 1) at 0 to 0.5 foot bgs.
- Manganese (background concentration of 495 mg/kg and Ecological RBSL of 72 mg/kg) was detected above its background concentration and Ecological RBSL in 34 samples with concentrations up to 1,600 mg/kg at TTTS1004 (Former Fire Department Demonstration Area 4) at 0 to 0.5 foot bgs.
- Mercury (background concentration of 0.09 mg/kg, Residential RBSL of 23 mg/kg, and Ecological RBSL of 0.1 mg/kg) was detected above its background concentration and Residential RBSL and/or Ecological RBSL in 61 samples with concentrations up to 110 mg/kg at TTBS1180 (potential migration pathway located west of Concrete Pond 2) at 0 to 0.5 foot bgs.

- Molybdenum (background concentration of 5.3 mg/kg and Ecological RBSL of 0.11 mg/kg) was detected above its background concentration and its Ecological RBSL in nine samples with concentrations up to 73 mg/kg at TTBS1149 (potential migration pathway located west of Earth Pond 3) at 1.75 to 2.75 feet bgs.

- Nickel (background concentration of 29 mg/kg, Residential RBSL of 1,500 mg/kg, and Ecological RBSL of 0.1 mg/kg) was detected above its background concentration and Residential RBSL and/or Ecological RBSL in 85 samples with concentrations up to 2,310 mg/kg at TTBS1149 (potential migration pathway located west of Earth Pond 3) at 1.75 to 2.75 feet bgs.

- Selenium (background concentration of 0.655 mg/kg and Ecological RBSL of 0.17 mg/kg) was detected above its background concentration and Ecological RBSL in 87 samples with concentrations up to 5.1 mg/kg at TTBS1194 (western drainage from SWMU 4.8, located between the southern SWMU 4.8 boundary and the northern Group 10 RFI Site boundary) at 0.5 to 1.5 feet bgs.

- Silver (background concentration of 0.79 mg/kg and Ecological RBSL of 0.54 mg/kg) was detected above its background concentration and its Ecological RBSL in 18 samples with concentrations up to 15.6 mg/kg at TTTS1018 (western hummocky area) at 0 to 0.5 feet bgs.

- Vanadium (background concentration of 62 mg/kg and Ecological RBSL of 1.5 mg/kg) was detected above its background concentration and its Ecological RBSL in 30 samples with concentrations up to 140 mg/kg at TTTS1044 (Concrete Pond 2) at 8 to 8.5 feet bgs.

- Zinc (background concentration of 110 mg/kg and Ecological RBSL of 21 mg/kg) was detected above its background concentration and its Ecological RBSL in 28 samples with concentrations up to 1,420 mg/kg at TTBS1184 (potential drum and equipment storage area identified in aerial photographs located west of Burn Pit 2) at 0 to 0.5 foot bgs.

- Zirconium (background concentration of 8.6 mg/kg and Ecological RBSL of 7.4 mg/kg) was detected above its background concentration and its Ecological RBSL in three samples collected as follows:

  - TTTS1004 (Former Fire Department Demonstration Area 4) at 2.5 to 3 feet bgs (17 J mg/kg)
  - TTBS1262 (south of the southern SWMU 4.8 boundary at 1982 Excavation 4) at 0 to 0.5 foot bgs (13 J mg/kg)
  - TTBS1016 (southwest of Earth Pond 2) at 3.5 to 4.5 feet bgs (8.92 mg/kg)

- Metals detected above background concentrations (but below their respective RBSLs) include beryllium, chromium, and thallium. Background concentrations for metals are included in Table D.3-3A. Sodium and iron were detected in soil samples, but RBSLs for sodium and iron have not been established.

A total of 709 soil samples was collected at 383 locations and analyzed for inorganics (including nitrogen-containing compounds and perchlorate). Of the 709 samples, 686 samples had detectable levels of inorganics, and results are shown in Figures D.3-13A through D.3-13I.

- Cyanides (Residential RBSL of 1,500 mg/kg, Ecological RBSL of 290 mg/kg) were detected at concentrations up to 14 J mg/kg at TTBS1060 (Entrance Shack and potential former burn pit identified in aerial photographs).
- Fluoride (background concentration of 6.7 mg/kg, Residential RBSL of 4,600 mg/kg) was detected in concentrations that did not exceed its Residential RBSL up to 76 mg/kg at SB_TTF-32 (Burn Pit 1) at 0 to 0.5 feet bgs. Concentrations of fluoride in 47 soil samples were above its background concentration.
- Nitrate (as nitrogen) was detected at concentrations up to 93 mg/kg at TTBS1090 (Concrete Pond 2). RBSLs have not been established for nitrate.
- Perchlorate (Residential RBSL of 53 mg/kg, Ecological RBSL of 0.000024 mg/kg) was detected above its Ecological RBSL in 95 samples with concentrations up to 1.13 mg/kg at TTTS1003 (Earth Pond 1). Perchlorate was not detected above the Residential RBSL in any samples.

Metals were detected in soil above their respective RBSLs in three general areas at the Area I Burn Pit RFI Site (these three areas generally encompass the entirety of SWMU 4.8).

- Western Area I Burn Pit RFI Site – The lateral extent of metals is generally defined by surrounding samples with results below background concentrations. Additional characterization is recommended in the western hummocky area to define the extent of mercury north of TTTS1025. Burned metal material was identified in several locations during trenching in this area.
- Central Area I Burn Pit RFI Site – The lateral extent of metals in this area is generally defined by surrounding samples with results below RBSLs. Additional characterization is recommended to define the extent of hexavalent chromium north of SWBS1007. Although the northern extent of selenium and zinc is not defined to their respective background concentrations near the northern SWMU 4.8 boundary (at CTBS1107 and SWBS1007, respectively), they were detected at concentrations only slightly above the background concentrations and are likely naturally occurring. Burned metal material was identified in several locations during trenching in this area.
- Eastern Hummocky Area – The lateral extent of metals in this area is generally defined by surrounding and downslope samples with results below RBSLs. Although the northern extent of nickel is not defined to its background concentration near the northern SWMU 4.8 boundary (at TTBS1129), it was detected at a concentration only slightly above its background concentration and is likely naturally occurring. Gravel, concrete rubble, trash and debris, and wires were encountered during trenching in this area (TTTS1028 through TTTS1041).

Metals in soil are not likely migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by soil samples collected from the western and eastern

drainages south of SWMU 4.8. While metals were detected at concentrations that exceed background concentrations in samples collected from the drainages (Figure D.3-5C), the exceedances in surface soil samples were not significantly above background concentrations and are likely consistent with naturally occurring concentrations. Selenium was detected at a concentration of 5.1 mg/kg in a sample collected at 0.5 to 1.5 bgs at TTBS1194. Although this concentration is approximately eight times greater than the background concentration, the selenium concentration in the surface soil sample collected at this location was only slightly greater than background (0.7 mg/kg). Similarly, sodium was detected at a concentration approximately twice that of background (251 mg/kg) in a sample collected from 4 to 5 feet bgs at TTBS1200 but was detected below the background concentration in the surface sample collected from this location.

With the exception of mercury at TTTS1025 and hexavalent chromium at SWBS1007, further characterization of metals is not recommended at the Area I Burn Pit RFI Site. Additional characterization is recommended to define the extent of copper and mercury north of TTTS1026 and the extent of hexavalent chromium north of SWBS1007.

Perchlorate was detected in soil above its RBSLs in five areas at the Area I Burn Pit RFI Site.

- Earth Pond 1 and Earth Pond 2 (including Explosive Shed 1 and southern SWMU 4.8 boundary area) – The lateral extent of perchlorate is defined to the south, east, and west by approximately 18 surrounding samples with no detectable perchlorate. Additional characterization is recommended to define the lateral extent of perchlorate south of TTBS1253 and north of TTBS1022.
- Former Fire Demonstration Area 4 – The lateral extent of perchlorate in this area is defined by eight surrounding and down slope samples with no detectable perchlorate.
- 1982 Excavation 4 – The lateral extent of perchlorate in this area is defined by approximately 10 surrounding and down slope samples with no detectable perchlorate.
- TTF (including Burn Pits 1 and 2, Concrete Pads/Ponds, and Earth Pond 3) – The lateral extent of perchlorate in this area is defined by approximately 22 surrounding and down slope samples with no detectable perchlorate. Additional characterization is recommended to define the lateral extent of perchlorate north of TTBS1117, north/east of TTBS1060, and east of Earth Pond 3.
- Eastern Hummocky Area – Along the drainage extending to Perimeter Pond on the western side of the eastern hummocky area, the lateral extent of perchlorate is defined to the west, northeast, and east by samples with no detectable perchlorate. In the eastern and central portions of the eastern hummocky area, the lateral extent of perchlorate is defined to the east, west, and south by samples with no detectable perchlorate. Additional characterization is recommended in the eastern hummocky area to define the extent of perchlorate northwest and southeast of TTBS1210, TTBS1159, and TTBS1121 (along the drainage) and north of TTTS1036 and TTBS1130.

Perchlorate in soil is not migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by soil samples collected from the western and eastern drainages south of SWMU 4.8. Perchlorate was not detected in downstream drainage samples (Figure D.3-8C).

With the exception of perchlorate at TTBS1253, TTBS1022, TTBS1117, TTBS1060, TTBS1210, TTBS1159, TTBS1121, TTTS1036, TTBS1130, and Earth Pond 3, further characterization of perchlorate is not recommended at the Area I Burn Pit RFI Site. Additional characterization is recommended to define the extent of perchlorate south of TTBS1253, north of TTBS1022, north of TTBS1117, north/east of TTBS1060, east of Earth Pond 3, northwest and southeast of TTBS1210, TTBS1159, and TTBS1121 (along the drainage), and north of TTTS1036 and TTBS1130.

D.3.4.2.6 Dioxins

A total of 306 samples was collected at 163 locations and analyzed for dioxins and furans. Of the 306 samples, 303 had detectable concentrations of dioxins and/or furans. Results are presented in Figures D.3-6A through D.3-6C, and D.3-14A through D.3-14F.

Seventeen dioxin and furan congeners were detected above their respective background concentrations and Residential and/or Ecological RBSLs. These congeners were used to calculate three parameters for evaluation in this section—DioxinFuran_TEQ_Bird, DioxinFuran_TEQ_Fish, and DioxinFuran_TEQ_Mammal.

- DioxinFuran_TEQ_Mammal was detected above the background concentration of 0.00000087 mg/kg and the Residential RBSL of 0.0000069 mg/kg and/or the Ecological RBSL of 0.0000043 mg/kg in 85 samples with concentrations up to 0.00535 mg/kg at SB_TTFD-01 (Earth Pond 2) at 0 to 0.5 feet bgs.

Dioxins and furans were detected in soil above RBSLs in five areas at the Area I Burn Pit RFI Site.

- Western Hummocky Area – The lateral extent of dioxins in the drainage pathways in the western hummocky area is defined by samples with results below RBSLs upstream (north) and downstream (south) in the drainage.
- Earth Ponds 1 and 2 – The lateral extent of dioxins in the vicinity of Earth Ponds 1 and 2 is generally defined to the north, east, and west by approximately 13 surrounding samples with results below RBSLs and/or background concentrations. Although the lateral extent of dioxins is not defined to the south, dioxins was not detected at concentrations exceeding RBSLs in downslope samples collected in the drainage channel west of Earth Ponds 1 and 2.
- Former Fire Department Demonstration Area –The lateral extent of dioxins in this area generally is defined by surrounding and down slope samples with results below RBSLs.
- Burn Pits 1 and 2, Concrete Pond 1, Concrete Pad 2 (including 1982 Excavations 1 through 4 and northern SWMU 4.8 boundary area) – The lateral extent of dioxins in this area is generally defined to the west, south, and east by approximately 17 surrounding and down slope soil samples with results below RBSLs. Further characterization of dioxins is recommended north of TTBS1118 in the northern SWMU 4.8 boundary area.
- Concrete Pond 2, Concrete Pond 3, and Earth Pond 3 (including 1982 Excavation 5) – The lateral extent of dioxins in the Concrete Pond 2 and Earth Pond 3 area is defined by approximately 18 surrounding and down slope samples with results below RBSLs.

Low levels of dioxins in soil might be migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by soil samples collected from the western and eastern drainages south of SWMU 4.8. Dioxins were detected in the two most southern surface soil samples collected from the western and eastern drainages south of SMWU 4.8 (TTSS03 and TTSS01) (Figure D.3-7C). However, the sample collected from the eastern drainage (TTSS01) did not contain dioxins (based on the dioxin furan TEQ value for mammals) at concentrations that exceed the background concentration. While the sample collected from the western drainage (TTSS03) did contain dioxins above the background concentration, the dioxin furan TEQ value for mammals is only twice the background concentration and does not exceed the corresponding Residential or Ecological RBSLs.

With the exception of dioxins at TTBS1118, further characterization of dioxins is not recommended at the Area I Burn Pit RFI Site. Additional characterization is recommended to define the lateral extent of dioxins north of TTBS1118.

D.3.4.2.7 Energetics

A total of 588 samples was collected at 298 locations and analyzed for energetics. Of the 588 samples, 10 had detectable concentrations of energetics. Results are presented in Figures D.3-7A through D.3-7C, and D.3-15A through D.3-15C.

- 2-Amino-4,6-dinitrotoluene and cyclotetramethylene-tetranitramine (HMX) were detected in soil at concentrations that did not exceed their respective RBSLs.
- 2,4,6-Trinitrotoluene was detected in one soil sample. Screening levels have not been established for 2,4,6-trinitrotoluene.

Energetics in soil are not migrating downstream of the Area I Burn Pit RFI Site through surface water runoff, as indicated by soil samples collected from the western and eastern drainages south of SWMU 4.8. Energetics were not detected in downstream drainage samples (Figure D.3-7C).

Further characterization of energetics is not recommended at the Area I Burn Pit RFI Site.

D.3.4.2.8 Herbicides

Four soil samples were collected at four locations and analyzed for herbicides. Of the four samples, one had detectable concentrations of herbicides. Results are presented in Figures D.3-15A through D.3-15C.

- 2,4-Dichlorophenoxybutyric acid was detected in a soil sample collected from Burn Pit 1 (TTBS1248, 2 to 2.5 feet bgs) at a concentration below its Residential RBSL of 549 mg/kg (0.015 J mg/kg). An Ecological RBSL has not been established for 2,4-dichlorophenoxybutyric acid.

Further characterization of herbicides is not recommended at the Area I Burn Pit RFI Site.

D.3.4.2.9 Pesticides

A total of 248 soil samples was collected at 114 locations and analyzed for pesticides. Of the 248 samples, 117 had detectable concentrations of pesticides. Results are presented in

Figures D.3-15A through D.3-15C. No pesticides were detected above their respective Residential RBSLs at the Area I Burn Pit RFI Site.

- 4,4'-DDE was detected in soil above its Ecological RBSL of 0.012 mg/kg in five samples collected as follows:
  - TTTS1044 (Concrete Pond 2) at 0 to 0.5 foot bgs (0.096 mg/kg)
  - TTTS1002 (Earth Pond 1) at 0 to 0.5 foot bgs (0.017 J mg/kg)
  - TTTS1003 (Earth Pond 1) at 0 to 0.5 foot bgs (0.0122 J mg/kg)
  - TTBS1017 (Earth Pond 2) at 0 to 0.5 foot bgs (0.017 mg/kg)
  - TTBS1149 (Potential migration pathway located west of Earth Pond 3) at 1.75 to 2.75 feet bgs (0.015 mg/kg)
- 4,4'-DDT was detected in soil above its Ecological RBSL of 0.012 mg/kg in eight samples collected as follows:
  - TTTS1044 (Concrete Pond 2) at 0 to 0.5 foot bgs (0.19 mg/kg)
  - TTBS1035 (1982 Excavation 4) at 8.5 to 9.5 feet bgs (0.064 J mg/kg)
  - TTBS1037 (1982 Excavation 4) at 4 to 5 feet bgs (0.033 J mg/kg)
  - TTBS1036 (1982 Excavation 4) at 6.4 to 7.4 feet bgs (0.024 mg/kg)
  - TTBS1032 (1982 Excavation 4) at 4 to 5 feet bgs (0.024 J mg/kg)
  - TTTS1015 (Earth Pond 3) at 0 to 0.5 foot bgs (0.023 mg/kg)
  - TTTS1013 (Earth Pond 3) at 0 to 0.5 foot bgs (0.013 J mg/kg)
  - TTBS1149 (Potential migration pathway located west of Earth Pond 3) at 1.75 to 2.75 feet bgs (0.019 mg/kg)
- Endrin was detected in soil above its Ecological RBSL of 0.044 mg/kg in one sample collected from TTTS1044 (Concrete Pond 2) at 0 to 0.5 foot bgs (0.11 mg/kg).
- Heptachlor epoxide was detected in soil above its Ecological RBSL of 0.0053 mg/kg in two samples collected from TTBS1090 (Concrete Pond 2) at 0 to 0.5 foot bgs (0.017 J mg/kg) and 4 to 5 feet bgs (0.03 J mg/kg).

The following 12 pesticides were detected in soil at concentrations that did not exceed their respective RBSLs:

- 4,4'-DDD
- Aldrin
- alpha-BHC
- beta-BHC
- gamma-BHC
- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Heptachlor
- Dieldrin

The following four pesticides were detected in soil, but do not have established RBSLs—delta-BHC, endrin aldehyde, endrin ketone, and Mirex.

Further information on results of pesticides detected in soil at the Area I Burn Pit RFI Site is presented in Table D.3-3A.

Pesticides in soil were detected above RBSLs in three areas at the Area I Burn Pit RFI Site.

- Earth Ponds 1 and 2 – The lateral extent of 4,4'-DDE is defined in all directions by surrounding and down slope samples with results below RBSLs or nondetect results. The vertical extent of 4,4'-DDE in surface soil at 0 to 0.5 foot bgs in this area is defined by samples with results below RBSLs collected from 4 to 6 feet bgs.
- 1982 Excavation 4 – The lateral extent of pesticides at the four locations in this area is defined by surrounding and down slope samples with results below RBSLs. The vertical extent of pesticides in soil is defined at TTBS1032 and TTBS1037 by deeper samples at 10 to 11 feet bgs and 5 to 6 feet bgs, respectively, with results below RBSLs.
- Concrete Pond 2 and Earth Pond 3 – The lateral extent of pesticides in this area is defined by surrounding and down slope samples with results below RBSLs. The vertical extent of pesticides in soil at Earth Pond 3 is defined by deeper samples collected from 2.5 to 3 feet bgs with no detectable 4,4'-DDT, and the vertical extent of pesticides at Concrete Pond 2 is defined by deeper samples collected from 8.5 and 17.5 feet bgs with no detectable pesticides.

Further characterization of pesticides is not recommended at the Area I Burn Pit RFI Site.

D.3.4.3 Air Deposition Soil Data Summary

Soil samples were collected along four transects (northwest, northeast, southeast, and southwest of the Area I Burn Pit) at a spacing of approximately 200 meters along each transect based on the results of the air dispersion model discussed in Section D.3.2. Figure D.2-2E presents the locations for which samples were collected. Surface soil samples were collected and submitted for analysis of metals. A summary of the metals that were detected above screening criteria in these samples is provided below.

D.3.4.3.1 Metals

Thirteen surface soil samples were collected from 12 locations and analyzed for metals. At least one or more metals were detected in all sampling locations, and results are shown in Figure D.3-5D. Four of the 12 locations fall within the boundaries of other Group 1B RFI sites, and are discussed in their respective RFI reports (transect and distance from the center of the Area I Burn Pit RFI Site, as shown in Figure D.3-5D, in parentheses):

- Area I Burn Pit RFI Site Report (this report) – TTBS1221 (east-southeast transect, 600 feet), TTBS1220 (east-southeast transect, 1,350 feet), TTBS1219 (east-southeast transect, 1,950 feet), TTBS1216 (southwest transect, 750 feet), TTBS1224 (southwest transect, 1,350 feet), TTBS1223 (southwest transect, 1,950 feet), TTBS1246 (northwest transect, 1,500 feet), TTBS1213 (northwest transect, 1,950 feet)
- CTL-III RFI Site Report (Appendix F) – TTBS1217 (northeast transect, 1,350 feet)
- CTL-V RFI Site Report (Appendix G) – TTBS1225 (northwest transect, 750 feet) and TTBS1222 (northeast transect, 600 feet)
- R-1 Pond RFI Site Report (Appendix I) – TTBS1218 (northeast transect, 1,950 feet)

All air deposition results are summarized in this section. The results for TTBS1217, TTBS1225, TTBS1222, and TTBS1218 are included in the risk assessments for the RFI sites in

which they are located (CTL-III RFI Site, CTL-V RFI Site, CTL-V RFI Site, and R-1 Pond RFI Site, respectively).

Four metals (chromium, lithium, nickel, and sodium) were detected in the soil samples at concentrations above their respective background concentrations:

- Chromium (background concentration of 36.8 mg/kg, Residential RBSL of 114,000 mg/kg, and Ecological RBSL of 930 mg/kg) was detected above its background concentration in one sample collected from TTBS1222 (CTL-V RFI Site) at 0 to 0.5 foot bgs. In this sample, the concentration of chromium detected was only slightly greater than the background concentration for chromium and is not statistically significant (37.8 mg/kg). This chromium concentration was significantly less than the Residential and Ecological RBSLs for chromium. Chromium concentrations detected in the remaining air deposition samples were less than its background concentration.
- Lithium (background concentration of 37 mg/kg, Residential RBSL of 152 mg/kg, and Ecological RBSL of 10 mg/kg) was detected above its background concentration and Ecological RBSL in one sample collected from TTBS1225 (CTL-V RFI Site) at 0 to 0.5 foot bgs. In this sample, the concentration of lithium detected was only slightly above the background concentration for lithium and is not statistically significant (37.6 mg/kg). This lithium concentration is significantly less than the Residential RBSL but is above the Ecological RBSL. Lithium concentrations detected in the air deposition remaining samples were less than its background concentration.
- Nickel (background concentration of 29 mg/kg, Residential RBSL of 1,500 mg/kg, and Ecological RBSL of 0.1 mg/kg) was detected above its background concentration and Ecological RBSL in two samples as follows. Nickel concentrations detected in the remaining samples were less than its background concentration.
  - TTBS1217 (CTL-III RFI Site) – The surface soil sample slightly exceeded the background concentration for nickel at 0 to 0.5 foot bgs (33.1 mg/kg). This concentration exceeds the Ecological RBSL but is significantly less than the Residential RBSL.
  - TTBS1222 (CTL-V RFI Site) exceeded the background concentration for nickel at 0 to 0.5 foot bgs (42.7 mg/kg). The detected concentration TTBS1222 was less than 1.5 times the background concentration and could be naturally occurring. This concentration exceeds the Ecological RBSL but is significantly less than the Residential RBSL.
- Sodium (background concentration of 110 mg/kg, RBSLs not established) was detected at a concentration that slightly exceeded the background concentration at TTBS1223 (120 J mg/kg) located in RFI Group 10. Sodium concentrations detected in the remaining samples were less than its background concentration.

In summary, the air deposition soil sample results for the Area I Burn Pit RFI Site indicate that potential air deposition associated with historical open burn and open detonation activities at SWMU 4.8 has not resulted in significant metals impacts to surface soil in the area surrounding the Area I Burn Pit RFI Site. While select metals were detected at concentrations that exceed background concentrations, all exceedances were not

significantly above background concentrations and likely represent naturally occurring metals concentrations.

D.3.5 Groundwater Findings

Groundwater occurrence and impacts at the Area I Burn Pit RFI Site are described below.

D.3.5.1 Groundwater Data Presentation

Groundwater sampling results and characterization findings are summarized in Table D.3-2B and Appendix B of the Group 1B RFI Report. The purpose of Table D.3-2B is to:

- Summarize soil impacts as they potentially relate to ongoing groundwater impacts
- Summarize groundwater sampling results
- Demonstrate that groundwater characterization is sufficient for the purposes of risk assessment, including:
  - That groundwater characterization is adequate for detected RFI site-related chemical constituents
  - That RFI site soil characterization is adequate for detected groundwater chemical constituents

Similar to Table D.3-2A, Table D.3-2B describes groundwater data by chemical group (such as metals, VOCs, and SVOCs). Table D.3-2B is organized as follows:

- Column 1 – Analytical group
- Column 2 – Summary of RFI site soil impacts
- Column 3 – Confirmation that chemicals detected in RFI site soil are monitored in groundwater
- Column 4 – Summary of groundwater impacts
- Column 5 – Discussion of whether chemicals are site related
- Column 6 – Conclusion regarding adequacy of groundwater characterization

A detailed compilation of groundwater data is provided in Appendix B of the Group 1B RFI Report. The groundwater appendix contains a description of hydrogeologic conditions (such as occurrence, water levels, recharge, and yield), groundwater quality, and transport and fate. These data include the following:

- Laboratory analytical results
- Hydrographs
- Time-series plots
- Cumulative distribution plots

A report on SSFL groundwater will be prepared as part of the RFI Program. This report will comprehensively (across the SSFL) address the same characterization and transport-and-fate issues addressed in Appendix B of the Group 1B RFI Report.

D.3.5.2 Groundwater Data Summary

Groundwater conditions at the Area I Burn Pit RFI Site are characterized by two shallow wells (RS-06 and RS-07) screened in NSGW and by one well (RD-03) screened in CFOU groundwater. As presented in Section D.2.4.4, the depth to groundwater is approximately 17, 4, and 10 feet bgs for wells RS-06, RS-07, and RD-03, respectively. Groundwater findings from these wells are presented in Tables D.3-2B, D.3-3D and D.3-3E and in Appendix B of the Group 1B RFI Report.

D.3.5.2.1 Near-Surface Groundwater Data Summary

As described in Appendix B of the Group 1B RFI Report, samples from the NSGW wells at the Area I Burn Pit RFI Site were analyzed for VOCs, SVOCs, metals, inorganics (including perchlorate), and energetics.

- Approximately 55 groundwater samples were collected at two locations between 1985 and 2008 and analyzed for VOCs. Of these samples, 43 samples had detectable levels of VOCs. The following three VOCs were detected above their respective groundwater screening levels:
  - trans-1,2-DCE was detected above its groundwater screening level of 10 micrograms per liter (µg/L) in three samples collected from monitoring well RS-06 (44, 18, and 11 µg/L) in 1985, and was not detected in any samples collected from well RS-06 after 1988. Trans-1,2-DCE was detected in concentrations that did not exceed its screening level in 17 samples collected from monitoring well RS-07.
  - TCE was detected above its groundwater screening level of 5 µg/L in one sample collected from monitoring well RS-06 (9 µg/L) in 1989, and was not detected in any samples collected from well RS-06 after 1989. TCE was detected at concentrations that did not exceed its screening level in 25 samples collected from monitoring well RS-07.
  - Vinyl chloride was detected above its groundwater screening level of 0.5 µg/L in one sample collected from monitoring well RS-06 (11 µg/L) in 1985. Vinyl chloride was detected at concentrations that did not exceed its screening level in two samples collected from monitoring well RS-07 (0.5 and 0.4 µg/L, in 1998 and 1999, respectively).

  The following eight VOCs were detected in NSGW samples at concentrations that did not exceed their respective screening levels:

  - cis-1,2-DCE
  - 1,4-dioxane
  - chloroform
  - 1,1,2-trichloro-1,2,2-trifluoroethane
  - acetone
  - 1,1-dichloroethane
  - methyl ethyl ketone

See Appendix B of the Group 1B RFI Report for further discussion of VOC impacts to groundwater.

- Approximately 47 groundwater samples were collected at monitoring wells RS-06 and RS-07 and analyzed for SVOCs. Of these samples, only two samples had detectable levels of SVOCs.
  - 2-n-Butoxyethanol was detected in two samples collected from monitoring wells RS-06 (10 J µg/L) and RS-07 (10 J µg/L) in June 1985. Screening levels for 2-n-butoxyethanol have not been established.
- PCBs have not been monitored in NSGW at the Area I Burn Pit RFI Site.
- Three groundwater samples were collected at two locations and analyzed for metals. All of the samples had detectable levels of metals.

  The following four dissolved metals were detected above groundwater screening levels:
  - Dissolved boron was detected above its screening level of 340 µg/L in two samples collected from monitoring well RS-06 (600 µg/L) and RS-07 (430 µg/L) in June 1985.
  - Dissolved magnesium was detected above its screening level of 77,000 µg/L in two samples collected from monitoring well RS-07 (147,000 µg/L and 135,000 µg/L) in 1985 and 1987.
  - Dissolved potassium was detected above its screening level of 9,600 µg/L in one sample collected from monitoring well RS-07 (18,000 µg/L) in June 1985.
  - Dissolved sodium was detected above its screening level of 190,000 µg/L in one sample collected from monitoring well RS-07 (246,000 µg/L) in June 1985.

See Appendix B for further discussion of metal impacts to groundwater.

- Eleven groundwater samples were collected at two locations and analyzed for inorganics. Of these samples, five samples had detectable levels of inorganics. The following two inorganics were detected above groundwater screening levels:
  - Chloride was detected above its screening level of 250,000 µg/L in two samples collected from monitoring well RS-07 (278,000 µg/L and 390,000 µg/L) in 1987 and 1985.
  - Sulfate was detected above its screening level of 376,000 µg/L in two samples collected from monitoring well RS-07 (820,000 µg/L and 870,000 µg/L) in 1987 and 1988.
  - Perchlorate has not been detected in the seven NSGW samples for which it was analyzed between 1998 and 2003.
- Dioxins have not been monitored in NSGW at the Area I Burn Pit RFI Site.
- Five groundwater samples were collected at two locations and analyzed for energetics. None of the samples had detectable levels of energetics.

- TPH has not been monitored in NSGW at the Area I Burn Pit RFI Site.

Area I Burn Pit RFI Site operations could be a source of constituents in NSGW (for example, VOCs and metals). As discussed in Section D.3.4, several chemical groups (VOCs, SVOCs, TPH, PCBs, metals, dioxins, perchlorate, and pesticides) were detected at elevated concentrations in soil samples collected from the Area I Burn Pit RFI Site. NSGW is discussed further in Appendix B of the Group 1B RFI Report.

D.3.5.2.2 CFOU Groundwater Data Summary

As described in Appendix B of the Group 1B RFI Report, samples collected from one CFOU groundwater monitoring well (RD-03) at the Area I Burn Pit Site were analyzed for VOCs, SVOCs, metals, inorganics, and energetics.

- Sixty groundwater samples were collected at monitoring well RD-03 between 1986 and 2008 and analyzed for VOCs. Of the 60 samples, 41 samples had detectable levels of VOCs. Three VOCs were detected in CFOU groundwater above groundwater screening levels.
  - cis-1,2-DCE was detected in 36 samples. Two of the 36 detected concentrations exceeded its groundwater screening level of 6 µg/L (6.6 µg/L in March 2005, and 6.2 µg/L in February 1997).
  - TCE was detected in six samples. One of the six detected concentrations exceeded its groundwater screening level of 5 µg/L (190 J µg/L in June 1989).
  - Vinyl chloride was detected in four samples. One of the four detected concentrations exceeded its groundwater screening level of 0.5 µg/L (0.74 µg/L in March 2005).

  The following six VOCs were detected in CFOU groundwater samples at concentrations that did not exceed their respective screening levels:

  - 1,1,2-trichloro-1,2,2-trifluoroethane
  - carbon disulfide
  - 1,4-dioxane
  - trans-1,2-DCE
  - trichlorofluoromethane
  - toluene

  See Appendix B of the Group 1B RFI Report for further discussion of VOC impacts to groundwater.
- A total of 57 groundwater samples was collected at monitoring well RD-03 between 1986 and 2008 and analyzed for SVOCs. There were no detectable levels of SVOCs in any of the 57 samples.
- TPH has not been monitored in CFOU groundwater at the Area I Burn Pit RFI Site.
- PCBs have not been monitored in CFOU groundwater at the Area I Burn Pit RFI Site.
- Two groundwater samples were collected at RD-03 and analyzed for metals. Both samples had detectable levels of metals.
  - Dissolved manganese was detected above its groundwater screening level of 150 µg/L in one sample collected in July 1986 (200 µg/L).

The following five dissolved metals were detected in CFOU groundwater samples at concentrations that did not exceed their respective screening levels:

- sodium
- strontium
- zinc
- magnesium
- potassium

See Appendix B of the Group 1B RFI Report for further discussion of metals impacts to groundwater.

- Four CFOU groundwater samples were collected and analyzed for inorganics. No inorganics were detected at concentrations above their respective groundwater screening levels. Perchlorate was not detected in the four CFOU groundwater samples for which it was analyzed between 1998 and 2003.
- Dioxins have not been monitored in CFOU groundwater at the Area I Burn Pit RFI Site.
- Three groundwater samples were collected at monitoring well RD-03 and analyzed for energetics. No energetics were detected in any of the CFOU groundwater samples.

The Area I Burn Pit RFI Site operations might be a source of constituents detected in CFOU groundwater (for example, VOCs and metals). As discussed in Section D.3.4, several chemical groups were detected at elevated concentrations in soil samples collected at the Area I Burn Pit RFI Site (VOCs, SVOCs, TPH, PCBs, metals, dioxins, perchlorate, and pesticides). CFOU groundwater is discussed further in Appendix B of the Group 1B RFI Report. Corrective measures for the CFOU will be proposed in the Sitewide Groundwater Remedial Investigation Report (MWH, pending). In addition, the need for additional groundwater data will be evaluated the Sitewide Groundwater Remedial Investigation Report (MWH, pending).

D.3.6 Surface Water Findings

Surface water could exist intermittently at the Area I Burn Pit RFI Site primarily as the result of seasonal precipitation events. It is possible that impacted surface soil at the Area I Burn Pit RFI Site could migrate downstream of the site during rain or wind events. However, downstream NPDES surface water sampling occurs on a regular basis at Outfalls 001 (located in Group 10, south and downslope of the Area I Burn Pit RFI Site) and 011 (located southeast and down slope of the Area I Burn Pit RFI Site). A summary of the results of routine monitoring performed at Outfall 011 is presented in Table H.3-2C in Appendix H of the Group 1B RFI Report. A summary of the results of routine monitoring performed at Outfall 001 is presented in the Group 10 RFI Report (CH2M HILL, 2009).

In addition, five surface water samples were collected from the following Area I Burn Pit RFI Site drainages in March 2003 as part of the RFI and submitted for analysis of perchlorate:

- One sample on the western side of the Area I Burn Pit RFI Site within SWMU 4.8 (TTSW01)
- Two samples from south of the southern SWMU 4.8 boundary (TTSW02 and TTSW03)

- One sample in the potential migration pathway located south of Earth Pond 3 (TTSW04)

Surface water findings are presented in Table D.3-3C. Perchlorate was detected in one of the five samples at TTSW04 (potential migration pathway south of Earth Pond 3) at a concentration of 4.3 µg/L. Screening levels have not been established for perchlorate in surface water.

D.3.7 Radioisotopes Data Summary

A total of 162 soil samples was collected across the Area I Burn Pit RFI Site and analyzed for radioisotopes. Samples were collected around many of the significant features at the Area I Burn Pit RFI Site, including:

- Earth Pond 2 and downslope migration pathway
- Former Fire Demonstration Area 4
- 1982 Excavations 2, 4, and 5
- Burn Pits 1 and 2
- Concrete Pad/Pond 1
- Concrete Pond 3
- Northern SWMU 4.8 boundary area
- Outfall 011 area
- Eastern hummocky area

The locations of samples analyzed for radioisotopes are presented in Figure D.2-2F. Table D.3-1F provides a summary of the samples submitted for analysis of radioisotopes.

A summary of sampling results compared to the USEPA Agricultural Soil Radionuclide Preliminary Remediation Goals (EPA Ag PRG)[5] are presented in Table D.3-3F. All samples contained at least one radioisotope with detectable concentrations.

The following 29 radioisotopes were detected in soil samples collected from the Area I Burn Pit RFI Site:

- Actinium-228
- Bismuth-210
- Bismuth-212
- Bismuth-214
- Cesium-137
- Lead-210
- Lead-212
- Lead-214
- Thorium-234
- Uranium-235/236
- Plutonium-238[6]
- Plutonium-239/240[6]
- Polonium-210
- Polonium-214
- Polonium-216
- Polonium-218
- Potassium-40
- Protactinium-234m
- Total Uranium
- Uranium-238
- Radium-226
- Radium-228
- Strontium-90
- Thallium-208
- Thorium-228
- Thorium-230
- Thorium-231
- Thorium-232
- Uranium-233/234

[5] The EPA Agricultural Soil Radionuclide Preliminary Remediation Goals were selected based on regulatory guidance documents of the United States Department of Energy (DOE) and USEPA (DOE, 2009; USEPA, 2000).

[6] Reanalysis of the samples with Plutonium-238 and/or Plutonium-239/240 detects did not confirm any Plutonium-238 or Plutonium-239/240 detects.

Of these isotopes, Cesium-137, Lead-210, Plutonium-238, Plutonium-239/240, Polonium-210, Potassium-40, Radium-226, Radium-288, Strontium-90, Thorium-228, Thorium-230, Thorium-232, Uranium-233/234, Uranium-235/236, and Uranium-238 were detected at concentrations that exceed EPA Ag PRG screening levels. However, comparison of analytical results to EPA Ag PRG screening levels should be interpreted with caution since this comparison does not account for background concentrations of radioisotopes.

Prior to sample collection in the Area I Burn Pit RFI Site in 2008, areas measuring 10 feet by 10 feet were scanned for radiation levels around planned sample locations. This surface screen was performed in accordance with the Radiological Characterization Procedure included in the RFI WPA for Area I Burn Pit (H&A, 2008d). During this initial surface scan, locations were detected with radiation exposure levels that were more than twice background levels. Soil samples were subsequently collected from these locations and submitted for analysis of radiological isotopes by an analytical laboratory; these samples are indicated in Table D.3-1F.

In response to the elevated levels detected during the initial surface scan and as a precautionary measure, a gamma walkover survey (GWS) was performed across the entire Area I Burn Pit RFI Site prior to sample collection. The results of the GWS are presented in Attachment D4. As summarized in that attachment, the GWS resulted in identification of 166 locations with data exceeding three standard deviations of the mean background concentration. These locations were investigated, and the majority of the data for these locations were found to be representative of background count rates of rock outcroppings or associated with sandbags with higher-than-average count rates. The five highest outliers were located in the northeast corner of the Area I Burn Pit RFI Site in the eastern hummocky area. Soil samples were subsequently collected from these locations and submitted for radioisotope analysis (sample locations TTBS1233 through TTBS1237).

D.4 Risk Assessment Findings

The objective of this risk assessment (RA) is to determine whether the Area I Burn Pit RFI Site could pose unacceptable risks that could require remedial action, or if portions of the Site are eligible for an NFA designation.

The following sections summarize the findings of the HRA and ERA performed for the Area I Burn Pit RFI Site. Details regarding how the HRA and ERA were conducted are presented in the SRAM (MWH, 2005) and in Appendix A of the Group 1B RFI Report. Details regarding the Area I Burn Pit RFI Site-specific HRA and ERA are presented in Appendix A, Attachment A1, of the Group 1B RFI Report.

Note that the HRA and ERA for the Area I Burn Pit RFI Site were conducted using site-specific chemical data and do not consider the radiological isotope data discussed in Section D.3.7.

D.4.1 Key Decision Points

Site-specific key decision points for the HRA and ERA are listed below and are described more fully in Appendix A and Attachment A1 of the Group 1B RFI Report. These decisions were made for the risk assessments based on site-specific conditions, chemical characteristics, and assessment findings. Programmatic decision points are described and included in the RFI Program Report (MWH, 2004). Site-specific key decision points include the following:

1. Both direct (drinking water) and indirect (soil vapor) exposures to groundwater chemicals of potential concern (COPCs) were evaluated in the risk assessment (Appendix A). However, this RFI site report presents risks from indirect exposure to groundwater only (inhalation of indoor air and ambient air) and does not include risks from direct exposure to groundwater.

2. Exposure point concentration (EPC) calculations were based on collected characterization data, as follows:

    - All CFOU groundwater EPCs were based on maximum levels detected in the CFOU well within Group 1B, RD-46A, for both indirect and direct exposure. NSGW EPCs were based on the maximum levels detected in NSGW wells within the Area I Burn Pit RFI Site for both indirect and direct exposure (RS-06 and RS-07).

    - A review of time-series plots for chemical constituents, groundwater gradients, and source areas indicates maximum concentrations detected during the last consecutive 3 years conservatively represent potential future conditions for the purpose of estimating future risks.

    - Soil EPCs were calculated using ProUCL 4.0, following methods specified in the SRAM (MWH, 2005). Two EPCs were used, the central tendency exposure (CTE) and the reasonable maximum exposure (RME). The CTE was the arithmetic mean of the

data, and the RME was the 95 percent upper confidence limit (95UCL) as calculated by ProUCL 4.0. In cases where the 95UCL exceeded the maximum detected concentration, the RME defaulted to the maximum detected concentration. In some cases, the CTE also exceeded either the RME or the maximum detected concentration due to differences in handling of nondetected values in ProUCL 4.0 and in assumptions regarding distribution (the arithmetic mean assumes a normal distribution, whereas the method for calculating the 95UCL is based on data distribution). In these cases, the value selected as the RME EPC was also used for the CTE EPC.

3. The identification of chemicals of ecological concern (COECs) was conducted using a very conservative evaluation of the weight of evidence. The lines of evidence considered in that evaluation included background considerations (Wilcoxon Rank Sum results and incremental risks), receptor groups potentially affected, exceedance of Low and/or High toxicity reference values (TRVs), magnitude of exceedance, and habitat quality at the site. Risk estimates used as the basis for selection of COECs were those from a "Refined Screen" in which the EPC was based on the RME and an area use factor was incorporated for large home range. Refined Screen results using both the Low and High TRV were evaluated, but the exceedance of the Low TRV was generally considered the point of departure. Risk estimates based on High TRVs were used to provide additional information in cases where the weight-of-evidence support was limited.

4. Large home-range receptor risks were calculated for each RFI site in Group 1B and also for Group 1B as a whole. Large home-range receptor cumulative risk across the SSFL will be presented later in a sitewide summary in the large home-range receptor risk assessment report.

D.4.2 Summary of Human Health Risk Assessment Findings

Potential risks were estimated for future urban residents (child and adult) and future recreational users (child and adult) of the Area I Burn Pit RFI Site. A conceptual site model diagram for human health risk assessment is presented in Figure D.4-1, and a summary of COPCs and risk estimates for human health are presented in Tables D.4-1 and D.4-2 respectively. Table D.4-2 also presents the COCs for each media. Appendix A, Attachment A1, of the Group 1B RFI Report discusses how the COCs were determined for each media and exposure pathway. Results of the risk characterization indicated the following:

- Soil – Dioxins/furans and benzo(a)pyrene were identified as COCs for direct contact with soil by future residents. Dioxins/furans were identified as COCs for direct contact with soil by future recreationists. No COCs were identified for plant consumption by future residents.

- Soil Vapor – TCE, PCE, and cis-1,2-DCE were identified as COCs for inhalation of indoor air by future residents. In addition, TCE was identified as a COC for inhalation of ambient air by future residents. No COCs were identified for inhalation of ambient air in scenarios for future recreation.

- Surface Water – No COCs were identified for dermal contact with surface water in the scenario for future recreation.
- Groundwater – COCs are presented in Appendix A and will be identified and addressed as part of the Site-wide Groundwater Remedial Investigation Report (MWH, pending).

The uncertainties associated with the Group 1B RFI Sites in general were discussed in Appendix A. Uncertainties specific to the Area I Burn Pit RFI Site are summarized in Table D.4-3.

D.4.3 Summary of Ecological Risk Assessment Findings

Potential risks were estimated for terrestrial plants, soil invertebrates, and terrestrial birds and mammals. A conceptual site model diagram for ecological receptors is presented in Figure D.4-2, and a summary of risk estimate and COECs are presented in Tables D.4-4 and D.4-5. Results of the risk characterization indicated the following:

- Soil –Cyanides; Perchlorate; Aroclor 1254; Aroclor 1260; dioxins/furans (with and without dioxin-like PCBs); 4,4'-DDE; 4,4'-DDT; and bis(2-ethylhexyl) phthalate were retained as COECs. Estimated risks were in the Low (cyanides, Aroclor 1254, Aroclor 1260, bis(2-ethylhexyl) phthalate, and 4,4'-DDE), Medium-Low (4,4'-DDT), and Medium-High (DioxinFuran_TEQs and DioxinFuranPCB_TEQs) risk ranges. Hexachlorobenzene and 2,4-dinitrophenol were not retained as COECs because risk estimates were based on the maximum nondetect concentration (the chemicals were never detected at the Area I Burn Pit RFI Site and the actual presence of the chemicals are unknown).
- Soil Vapor – 1,1,1-TCA; 1,1-DCE; cis-1,2-DCE; TCE; and carbon disulfide were retained as COECs.

  Estimated risks were in the Low range for carbon disulfide, the Medium-Low range for cis-1,2-DCE and 1,1,1-TCA, and the Medium range for 1,1-DCE and TCE.
- Surface Water – No COECs were identified.

The uncertainties associated with the Group 1B RFI Sites in general are discussed in Appendix A of the Group 1B RFI Report. Uncertainties specific to the Area I Burn Pit RFI Site are summarized in Table D.4-6.

D.4.4 Risk Assessment Conclusions for Area I Burn Pit RFI Site

This section presents the overall conclusions for the Area I Burn Pit RFI Site according to this RA. The risk assessment provides a quantitative and qualitative appraisal of the actual or potential effects of constituents on human health or terrestrial wildlife.

The potential sources of contamination at the Area I Burn Pit RFI Site consist of numerous potential drum and equipment storage areas, potential former burn pits identified in aerial photographs, areas of buried debris and geophysical anomalies, and several earthen ponds. Potential risks associated with direct contamination of soil and soil vapor were assessed in this RA. Soil vapor samples were collected and analyzed for VOCs and soil samples were

collected and analyzed for VOCs, SVOCs, petroleum hydrocarbons, PCBs, metals, dioxins, energetics, inorganics, herbicides, and pesticides. Data were considered adequate to evaluate potential risks.

In the HRA, dioxins/furans and benzo(a)pyrene were identified as COCs for direct contact with soil by future residents and recreationists. TCE, PCE, and cis-1,2-DCE were identified as COCs for inhalation of indoor air by future residents. TCE was identified as a COC for inhalation of ambient air by future residents, but not for future recreationists.

In the ERA; Perchlorate; Aroclor 1254; Aroclor 1260; dioxins/furans (with and without dioxin-like PCBs); 4,4'-DDE; 4,4'-DDT; and bis(2-ethylhexyl) phthalate were retained as COECs in soil. 1,1,1-TCA; 1,1-DCE; cis-1,2-DCE; and TCE were retained as COECs in soil vapor.

No COCs were identified for surface water in the HRA and ERA. Groundwater will be addressed as part of the Site-wide Groundwater Remedial Investigation Report (MWH, pending).

The locations within the Area I Burn Pit RFI Site that will require further action to address human health and ecological risks include:

- Earth Ponds 1 and 2 and associated drainages
- TTF Interim Status Facility in the central portion of SWMU 4.8 and associated drainages (including Former Fire Demonstration Area 4, 1982 Excavations 1 through 6 and adjacent geophysical anomalies, Burn Pits 1 and 2, northern SWMU 4.8 boundary area, Concrete Pad/Pond 1, Concrete Ponds 2 and 3, Earth Pond 3, and the eastern hummocky area and associated drainages).
- Western hummocky area and associated drainages

D.5 Site Action Recommendations for Area I Burn Pit RFI Site

This section presents a summary of RFI reporting requirements as applicable to the Area I Burn Pit RFI Site. Section D.5.1 describes the RFI reporting requirements, particularly with respect to the identification of areas recommended for further work, or "site action" recommendations. The process and criteria used for making site action recommendations are described in Section D.5.2. Site action recommendations for the Area I Burn Pit RFI Site are summarized in Sections D.5.3, D.5.4, and D.5.5.

D.5.1 RFI Reporting Requirements

As described in regulatory guidance documents for the SSFL RCRA Corrective Action Program (see Section 1.2.3 of Volume I), the purposes of the RFI are to (1) characterize the nature and extent of contamination and to identify potential source areas, (2) assess potential migration pathways, (3) estimate risks to actual or potential receptors, and (4) gather necessary data to support the CMS (DTSC, 1995). The RFI Report is required to present findings regarding the above information, describe completeness of the investigation, and indicate if additional work is needed.

The Area I Burn Pit RFI Site Report accomplishes these requirements by:

1. Presenting detailed characterization findings, source area identification, and investigation completeness determinations by media and by chemical class for all chemical use areas (and associated down-drainage locations) (Tables D.3-2A and D.3-2B). Section D.3 summarizes the overall characterization of contamination nature and extent, potential source areas, and an assessment of investigation completeness.
2. Evaluating groundwater migration pathways in Appendix B of the Group 1B RFI Site Report and other potential transport pathways in Appendix A of the Group 1B RFI Site Report.
3. Identifying potential receptors and estimating potential risks at the Area I Burn Pit RFI Site (Section D.4 and Appendix A).
4. Identifying Area I Burn Pit RFI Site areas requiring further work (this section).

D.5.2 Basis for Site Action Recommendations

In summary, site action recommendations included in the Area I Burn Pit RFI Site Report identify areas for the following:

- Further evaluation in the CMS (CMS Areas)
- No further action (NFA Areas)
- Interim corrective measures to stabilize source areas and control contaminant migration (Stabilization Areas)

Site action recommendations are based on the characterization and risk assessment findings. Characterization findings provide definition of the nature and extent of site contaminants, based on chemical data and transport and fate evaluation. Risk assessments evaluate characterization data, estimate human health and ecological risks based on specified land use scenarios, and identify chemicals that drive or contribute to those risks.

The site action recommendations result from two evaluations described below. CMS or NFA Area recommendations are based on an integrated evaluation of characterization and risk assessment results. Stabilization Area recommendations rely on characterization evaluations, including transport-and fate-analysis, and comparison to risk-based levels. Each process is described further below.

D.5.2.1 CMS and NFA Site Action Evaluation Process

CMS or NFA site action recommendations are based on a four-step process. This process, which is presented in detail in Section 7.1 of the Group 1B RFI Report, is summarized as follows:

Site Action Evaluation Step 1. Risk assessment results for human and ecological receptors are compared to "acceptable" levels published by the USEPA or DTSC as guidance for site managers (DTSC, 1992; USEPA, 1992). The low end of the risk range (i.e., 1×10^{-6}, or 1 in 1,000,000; or hazard index [HI] = 1.0) is used to conservatively estimate the areal extent that is recommended for site action.

Site Action Evaluation Step 2. When estimated RFI site risks are greater than 1×10^{-6} (cancer risks) or HI values are greater than 1 (noncancer and ecological risks), the RFI site risks are reviewed on a chemical-by-chemical basis to identify risk drivers and significant risk contributors to the cumulative, total risk for each potential receptor.

Site Action Evaluation Step 3. Characterization findings from the entire RFI site are evaluated to identify areas where higher concentrations of risk drivers and contributors are detected. The identified areas in this report are termed "CMS Areas" and represent locations recommended for further evaluation during the CMS. Areas recommended for further evaluation during the CMS are comprehensive of all appropriate potential receptors or land use scenarios.

Site Action Evaluation Step 4. The fourth step identifies any uncertainties in the RFI site characterization and risk assessments that might affect the findings. For example, some chemicals are assumed to be present in soil, based on TPH extrapolation factors (e.g., benzene and PAHs) and contribute to total risk for the RFI site above acceptable levels. Because this assumption is often highly conservative, its use as a basis for CMS recommendations could be further evaluated in the CMS.

Site action recommendations are tabulated by Chemical Use Area, and chemical risk drivers/contributors are identified for each appropriate receptor in Table D.5-1. CMS Areas are also identified in Figure D.5-1 to illustrate locations and approximate areal extents, and summarized in Table D.5-2. CMS Areas are estimated based on available characterization data and are expected to be accurate within an order of magnitude.

Two additional aspects of RFI reporting will serve to confirm and/or finalize the areas recommended in Group RFI Reports for evaluation in the CMS. The first is an ecological evaluation for large home-range receptors (e.g., mule deer and hawk). The second is a groundwater evaluation that will be reported in the Site-wide Groundwater Remedial Investigation Report. Updates to this report will be prepared as needed.

D.5.2.2 Source Area Stabilization Site Action Evaluation Process

Chemical data collected during the RFI are evaluated to determine the potential for contaminant migration. Resulting site action recommendations focus on stabilization measures related to sediment transport via the surface water pathway.

Criteria used to evaluate if source area stabilization measures are needed to control surface water migration include the following:

- Presence of chemical concentrations above background or RBSLs in surficial (not deeper) soils
- Proximity of surficial impacts to an active surface water drainage pathway
- Moderate to steep topography
- Absence of containment features (e.g., surface coatings and dams)
- Concentration gradients that indicate prior transport away from the source of surficial impacts

Each criterion is considered important, and a weight-of-evidence evaluation is used to make a recommendation for source area stabilization measures. Source area stabilization measures, which include the use of best management practices (BMPs), are used to prevent migration to surface water. BMPs could include the installation of straw bales, fiber rolls, and silt fencing, and/or covering of areas with plastic tarps. Erosion control measures have been applied to many surficial soil source areas at the SSFL and the Area I Burn Pit RFI Site to prevent contaminant migration. These are described in the Area I Burn Pit RFI Site Storm Water Pollution and Prevention Plan (H&A, 2006c).

D.5.3 CMS Site Action Recommendations

Based on the results of the RFI site investigation and the human health and ecological risk assessments, portions of the Area I Burn Pit RFI Site are recommended for CMS.

As presented in Table D.4-2, the maximum cumulative human health risk for the Area I Burn Pit RFI Site is 3×10^{-4} under a hypothetical future residential exposure scenario and 1×10^{-5} under a hypothetical future recreation exposure scenario. The maximum HI under the hypothetical residential and recreational exposure scenarios are 40 and 0.1, respectively. The potential human health risks at the Area I Burn Pit RFI Site exceed the low end of the risk management range ($1 \text{ X } 10^{-6}$) (excess lifetime cancer risks [ELCRs]) and also exceed an HI of 1 (noncancer risks). Consequently, a CMS is recommended. As shown in Table D.5-1, the primary contributors to human health risk are benzo(a)pyrene and dioxins in soil and TCE, PCE, and cis-1,2-DCE in soil vapor.

Hazard quotients (HQs) up to 430 were calculated in the ERA. Because this HQ value exceeds 1, a CMS is recommended to address ecological risks. As presented in Section D.4; cyanides; Perchlorate; Aroclor 1254; Aroclor 1260; Dioxin/Furan TEQ Mammal; Dioxin/Furan TEQ Bird; Dioxin/Furan/PCB TEQ Bird; Dioxin/Furan/PCB TEQ Mammal; 4,4'-DDE; 4,4'-DDT; and bis(2-ethylhexyl)phthalate were retained as COECs in soil in the ERA. 1,1,1-TCA; 1,1-DCE; cis-1,2-DCE; TCE; and carbon disulfide were retained as COECs in soil vapor in the ERA.

Although cyanide was identified as a COEC in soil in the ERA, it was detected in only 14 of the 152 samples for which it was analyzed and was not detected in any samples at concentrations exceeding the Ecological RBSL. In addition, the HQ only slightly exceeded 1 (1.7 for the hermit thrush). Consequently, cyanide is not carried forward as a risk driver in the CMS.

Although carbon disulfide was identified as a COEC in soil vapor in the ERA, it was modeled based on a carbon disulfide detection in soil (carbon disulfide was not analyzed in soil vapor). Carbon disulfide was detected in only 4 of the 89 soil samples for which it was analyzed, and none of the detected concentrations exceeded the Ecological RBSL for carbon disulfide in soil. Based on the low frequency of detection, carbon disulfide was not identified as a COPC in soil in the ERA. For these reasons, carbon disulfide in soil vapor is not carried forward as a risk driver in the CMS.

The following three CMS Areas were identified to address the human health and ecological risks for the Area I Burn Pit RFI Site:

- Area I Burn Pit-1 (AIBP-1): Western hummocky area, located in the northwest portion of the Area I Burn Pit RFI Site. The chemical risk drivers are dioxins, benzo(a)pyrene, Aroclor 1254, and Aroclor 1260 in soil. The extent of CMS Area AIBP-1 is based on bedrock outcrops to the west and north, a drainage pathway to the east, and samples with analytical results below RBSLs for chemical risk drivers to the south. Although sufficient data exists to estimate this CMS area within an order of magnitude, further characterization is recommended during a subsequent phase of the RFI or during the CMS to define the lateral extent of benzo(a)pyrene north of TTBS1189 and Aroclor 1254 and Aroclor 1260 north of TTTS1025. In addition, although not a risk driver, further characterization is recommended during a subsequent phase of the RFI or during the CMS to define the lateral extent of mercury north of TTTS1025.

- AIBP-2: Earth Ponds 1 and 2 and downslope migration pathway. The chemical risk drivers are PCE; TCE; and 1,1-DCE in soil vapor and dioxins; benzo(a)pyrene; bis(2-ethylhexyl)phthalate; Aroclor 1254; Aroclor 1260; Perchlorate; and 4,4'-DDE in soil. The extent of CMS Area AIBP-2 is based on topography to the west and samples with analytical results below RBSLs for chemical risk drivers to the north and east. Due to uncertainties in the extent of perchlorate south of the southern SWMU 4.8 boundary, the CMS boundary was extended to the east and south of the southernmost perchlorate exceedence. Although sufficient data exists to estimate this CMS area within an order of magnitude, further characterization is recommended during a subsequent phase of the RFI or during the CMS to define the lateral extent of perchlorate south of TTBS1253 and north of TTBS1022.

- AIBP-3: TTF and associated drainages (including Former Fire Demonstration Area 4, 1982 Excavations 1 through 5 and adjacent geophysical anomalies, Burn Pits 1 and 2, northern SWMU 4.8 boundary area, Concrete Pad/Pond 1, Concrete Ponds 2 and 3, and Earth Pond 3). The chemical risk drivers are TCE; PCE; 1,1,1-TCA; 1,1-DCE; and cis-1,2-DCE in soil vapor and dioxins; benzo(a)pyrene; bis(2-ethylhexyl)phthalate; Aroclor 1254; Aroclor 1260; Perchlorate; 4,4'-DDE; and 4,4'-DDT in soil. The extent of CMS Area AIBP-3 is based on bedrock outcrops and Area I Road to the north and by samples with analytical results below RBSLs for chemical risk drivers in all other directions. Although sufficient data exists to estimate this CMS area within an order of magnitude, further characterization is recommended during a subsequent phase of the RFI or during the CMS to define the lateral extent of perchlorate north of TTBS1117, north/east of TTBS1060, east of Earth Pond 3, northwest and southeast of TTBS1210, TTBS1159, and TTBS1121 (along the drainage), and north of TTTS1036 and TTBS1130. Further characterization is also recommended during a subsequent phase of the RFI or during the CMS to define the lateral extent of dioxins north of TTBS1118. In addition, although not a risk driver, further characterization is recommended during a subsequent phase of the RFI or during the CMS to define hexavalent chromium north of SWBS1007.

The locations of these three CMS Areas are presented in Figure D.5-1 and described further in Table D.5-2. Although further characterization might be required during a subsequent phase of the RFI or during the CMS, characterization performed to date is sufficient for estimating the CMS areas presented in Figure D.5-1 within an order of magnitude.

Groundwater will be addressed in the forthcoming Site-wide Groundwater Remedial Investigation Report (MWH, pending).

D.5.4 NFA Site Action Recommendations

Based on a detailed review of all available historical documents, an evaluation of sample data collected at the Area I Burn Pit RFI Site during previous investigations and the current RFI, including the results of human health and ecological risk assessments performed for the Area I Burn Pit RFI Site, all areas of the Area I Burn Pit RFI Site except the three CMS areas identified in the previous section are appropriate for an NFA designation. For the areas recommended for NFA, the sections below summarize the historical uses, the sampling data collected, and the results of the HRA and ERA.

D.5.4.1 Historical Uses

Haley & Aldrich performed a detailed review of available historical documents and aerial photographs, conducted site inspections, interviewed current and previous SSFL employees, and prepared comprehensive maps and tabulations of all available information related to chemicals used, stored, or released at the Area I Burn Pit RFI Site. Available records do not indicate that chemicals were used, stored, or released at locations outside the Chemical Use Area (which includes the entirety of SWMU 4.8) identified during the review of historical records. The Chemical Use Area was subject to site investigation, and sample collection and analysis. In addition, a number of site features that had no record of historical chemical uses were investigated during the RFI. Consequently, all suspect areas of the Area I Burn Pit RFI Site were investigated and the findings presented and considered herein.

The area recommended for NFA at the Area I Burn Pit RFI Site includes all portions of the Area I Burn Pit RFI Site that are not recommended for CMS (Figure D.5-1). This area primarily consists of the drainages and surrounding area south of the SWMU 4.8 boundary. In addition, Buildings 1XXX-003 (Explosive Shed 2), 1XXX-004, 1XXX-012, and Debris Location 3037 are located in the area recommended for NFA (in the central-western portion of SWMU 4.8). The sampling data collected in this area demonstrate that historical activities have not resulted in significant impacts. These sampling data are summarized in the following section.

D.5.4.2 Sampling and Analysis Results

As presented in Section D.3, the Area I Burn Pit RFI Site was investigated during this RFI. Soil vapor samples were collected and analyzed for VOCs. Soil samples were collected and analyzed for VOCs, SVOCs, petroleum hydrocarbons, PCBs, metals, inorganics, dioxins, energetics, herbicides, and pesticides. NSGW samples were collected and analyzed for VOCs, SVOCs, metals, inorganics (including perchlorate), and energetics.

For the area recommended for NFA (the central-western portion of SWMU 4.8 near bedrock outcrops), VOCs were detected below RBSLs in soil vapor and VOCs, SVOCs, petroleum hydrocarbons, PCBs, dioxins, pesticides, and herbicides were detected below RBSLs in soil. Energetics and perchlorate were not detected in any of the soil samples for which they were analyzed in the area recommended for NFA.

While several metals (aluminum, cadmium, cobalt, copper, lithium, manganese, nickel, selenium, vanadium, zinc, and zirconium) were detected above background concentrations and RBSLs in the area recommended for NFA, none of these metals were identified as risk drivers in the HRA or ERA. Several of these metals were detected at concentrations that are not significantly greater than the background concentrations, suggesting that they may be naturally occurring. In addition, the lateral and vertical extents of these metals have generally been characterized and metals are not likely migrating downstream of the Area I Burn Pit RFI Site through drainage channels south of the RFI site, as summarized in Section D.3.

The data for samples collected in the area of the Area I Burn Pit RFI Site recommended for NFA support the conclusion that previous uses of this portion of the Area I Burn Pit RFI Site have not resulted in a significant impact to the environment.

D.5.4.3 Risk Assessment

The CMS recommendations address all of the constituents that are significant contributors to unacceptable risks to future potential human and ecological receptors at the Area I Burn Pit RFI Site. Therefore, an NFA designation is appropriate for the area outside the areas recommended for CMS at the Area I Burn Pit RFI Site.

D.5.5 Source Area Stabilization Site Action Recommendations

Stabilization measures (including tarps) are currently in place at the Area I Burn Pit RFI Site at the following significant site features:

- Earth Pond 2

- Burn Pits 1 and 2
- Concrete Pad 2
- Concrete Pond 2
- Earth Pond 3

Based on sampling results, it is recommended that the existing BMPs listed above be extended (or new tarps added) to include the following additional features:

- Earth Pond 2 (tarp extension north to Earth Pond 1, west, and south)
- 1982 Excavation 4 (new tarp)
- Potential former drum and equipment storage area identified in aerial photographs, containing TTBS1120 (southcentral SWMU 4.8) (new tarp)
- Central SWMU 4.8 Area (tarp extension between and around existing tarps at Burn Pits 1 and 2, Concrete Pad 2, Control Center, Earth Pond 3, and Concrete Ponds 2 and 3).
- Sample location TTBS1059 at Building 1XXX-006 (new tarp)
- Sample location TTBS1060 at Building 1XXX-007 (new tarp)

In the above-listed locations, the application of tarps would prevent potential migration of VOCs, SVOCs, PCBs, dioxins, and perchlorate in surface soil (0 to 1 foot bgs). These chemical groups were detected at concentrations significantly above their respective RBSLs in surface soil samples collected in the areas described above.

D.6 References

The Boeing Company (Boeing). 2003. Class 2 P*ermit Modifications, Post Closure Permit Numbers PC-94/95-3-02 and PC-94/95-3-03, Modification Request for the Groundwater Monitoring Program.* May.

Boeing. 2007. Spill Record. "Boeing Spill Records (Post 1995)." May. HDMSE00021572.

Boeing. 2008. Letter from Art Lennox (Boeing) to Gerard Abrams (DTSC). "Air dispersion modeling report for the Area I Burn Pit, Santa Susana Field Laboratory, Ventura County, California." September 10.

Boeing. 2009. Group 1B Historical Document Database, Santa Susana Field Laboratory, Ventura County, California. September.

CH2M HILL. 2009. *Group 10 – Southern Undeveloped Area, RFI Report, Santa Susana Field Laboratory.* March.

CH2M HILL and Montgomery Watson Harza (MWH). 2008a. *Standard Operating Procedures: Building Feature Evaluation and Sampling for RCRA Facility Investigation, Santa Susana Field Laboratory, Ventura County, California.* June.

CH2M HILL and MWH 2008b. *Debris Area Survey and Sampling Methodology*. October 15.

CH2M Hill. 2008a. Santa Susana Field Laboratories Site, Group 1B Field Visit. March 31.

CH2M HILL. 2008b. *Proposed Air Modeling Protocol for the Area I Burn Pit, Santa Susana Field Laboratory.* June.

Department of Toxic Substances Control (DTSC). 1992a. *Modified Closure Plan, Technical Completeness Determination, Thermal Treatment Unit of the Area I Facility, Santa Susana Field Laboratory, EPA ID No. CAD903365435*. June.

Department of Toxic Substances Control (DTSC). 1992b. Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities. October.

Department of Toxic Substances Control (DTSC). 1992c. *Modified Closure Plan for the Thermal Treatment Unit (Partial Closure of the Area I Facility), Santa Susana Field Laboratory, Rockwell International Corporation, Rocketdyne Division.* December.

Department of Toxic Substances Control (DTSC). 1995. *Hazardous Waste Facility Post-Closure Permit*. May. HDMSE00166796.

Department of Toxic Substances Control (DTSC). 2007. Consent Order for Corrective Action, Docket No. P3-07/08-003 between DTSC, Boeing, NASA, and DOE.

Department of Toxic Substances Control (DTSC). 2009. Email from Mr. Norm Riley/DTSC to Mr. Art Lenox/The Boeing Company. "Offsite Soil Borrow Area UseforNorthernDrainageProject". January 20.

Dibblee, T.W. 1992. Geologic Map of the Calabasas Quadrangle, Los Angeles and Ventura Counties, California. Dibblee Geologic Foundation Map DF-37.

Groundwater Resources Consultants (GRC). 1992. "Sampling and Analysis Plan, Area 1 Thermal Treatment Facility, Santa Susana Field Laboratory." January.

Groundwater Resources Consultants (GRC). 1995a. *Sampling and Analysis Plan, Hazardous Waste Facility Post-Closure Permit Post-Closure-94/95-3-02, Area II, Santa Susana Field Laboratory, Rockwell International Corporation, Rocketdyne Division*. June 5.

Groundwater Resources Consultants (GRC). 1995b. *Sampling and Analysis Plan, Hazardous Waste Facility Post-Closure Permit Post-Closure-94/95-3-03, Areas I and III, Santa Susana Field Laboratory, Rockwell International Corporation, Rocketdyne Division*. June 5.

Haley & Aldrich (H&A). 2006a. "Interim Measures Work Plan for the Area 1 Burn Pit – Solid Waste Management Unit (SWMU) 4.8." April.

Haley & Aldrich (H&A). 2006b. "RCRA Facility Investigation Work Plan – Area 1 Burn Pit – Solid Waste Management Unit (SWMU) 4.8." November.

Haley & Aldrich (H&A). 2006c. *Installation of Erosion and Sediment Control Measures, Area I Burn Pit - SWMU 4.8, SSFL, Ventura County, California.*

Haley & Aldrich (H&A). 2008a. *First Quarter 2008 Groundwater Monitoring Report, Santa Susana Field Laboratory, Ventura County, California*. May 30.

Haley & Aldrich (H&A). 2008b. *Second Quarter 2008 Groundwater Monitoring Report, Santa Susana Field Laboratory, Ventura County, California*. August 29.

Haley & Aldrich (H&A). 2008c. *Third Quarter 2008 Groundwater Monitoring Report, Santa Susana Field Laboratory, Ventura County, California*. November 26.

Haley & Aldrich (H&A). 2008d. *RCRA Facility Investigation Work Plan Draft Addendum, Area 1 Burn Pit, Solid Waste Management Unit (SWMU) 4.8, Santa Susana Field Laboratory, Ventura County, California.* May 5.

Haley & Aldrich (H&A). 2009. *Report on Annual Groundwater Monitoring, 2008. Santa Susana Field Laboratory, Ventura County, California.* February 27.

ICF Kaiser Engineers (ICF). 1993. *Current Conditions Report and Draft RFI Work Plan, Areas I and III, Santa Susana Field Laboratory, Ventura County, California*. September.

Lockheed Environmental Systems & Technologies Company. 1997. Aerial Photographic Analysis of Rockwell Rocketdyne Santa Susana Field Laboratory, Ventura County, California. May.

MECx. 2006. *Quality Assurance Project Plan, RCRA Facility Investigation, Area I Burn Pit Addendum, Santa Susana Field Laboratory*. November 16.

Montgomery Watson. 2000. Technical Memorandum: *Conceptual Site Model, Movement of TCE in the Chatsworth Formation. Santa Susana Field Laboratory, Volumes I, II, and III*. April.

Montgomery Watson Harza (MWH). 2008. *Standard Operating Procedures: Building Feature Evaluation and Sampling for RCRA Facility Investigation, Santa Susana Field Laboratory, Ventura County, California.* JunF.

Montgomery Watson Harza (MWH). 2007. *Geologic Characterization of the Central Santa Susana Field Laboratory, Santa Susana Field Laboratory, Ventura County, California*. August.

Montgomery Watson Harza (MWH). 2006. *Santa Susana Field Laboratory Storm Water Pollution Prevention Plan.*

Montgomery Watson Harza (MWH). 2005. *Standardized Risk Assessment Methodology (SRAM) Work Plan, Revision 2*. Santa Susana Field Laboratory, Ventura County. September.

Montgomery Watson Harza (MWH). 2004. RCRA Facility Investigation Program Report, Surficial Media Operable Unit, Santa Susana Field Laboratory, Ventura County, California, Volume I. July. HDMSE00017872.

Montgomery Watson Harza (MWH). 2003. *Near-Surface Groundwater Characterization Report. Santa Susana Field Laboratory, Ventura County*. November.

Montgomery Watson Harza (MWH). 2000. Technical Memorandum: *Conceptual Site Model, Movement of TCE in the Chatsworth Formation. Santa Susana Field Laboratory, Volumes I, II, and III*. April.

Montgomery Watson Harza (MWH). Unknown. "Location Map, Thermal Treatment Facility Permitted Unit." HDMSp01687358.

Montgomery Watson Harza (MWH). Pending. *Site-wide Groundwater Remedial Investigation* Report*, Santa Susana Field Laboratory, Ventura County, California*.

Ogden Environmental and Energy Services Co., Inc. (Ogden). 2000a. *RCRA Facility Investigation Work Plan Addendum Amendment. Santa Susana Field Laboratory, Ventura County, California*. June.

Ogden Environmental and Energy Services Co., Inc. (Ogden). 2000. *Shallow Groundwater Investigation Work Plan, Final. Santa Susana Field Laboratory, Ventura County, California*. December.

Ogden Environmental and Energy Services Co., Inc. (Ogden). 1996. *RFI Work Plan Addendum, Santa Susana Field Laboratory, Ventura County, California*. September.

Rocketdyne. 1961. Photograph. "1237- 5/8/61- S1D." (pg 4). HDMSE00035724.

Rocketdyne. 1962a. Drawing/Plan. "PFL – Hazardous Material Disposal Facility, General Arrangement." August.

Rocketdyne. 1962b. Drawing/Plan. "Relocate Disposal Facility Controls, Area Layout and Piping." December.

Rocketdyne. 1963. Drawing/Plan. "Rework Propellant Disposal Facility – Area I". August.

Rocketdyne. 1967. Drawing/Plan. Drawing # 34596-E1. "Modify Burn Pit Area 1, Electrical Plan & Details." December.

Rocketdyne. 1969. Drawing/Plan. "Line Acid Pit and Provide Dilution Equip – Area I". May.

Rocketdyne. 1981a. Letter from A. R. Bjorklund to Regional Water Quality Control Board, Re: Inactive Burning and Disposal Site (file 81-18). March.

Rocketdyne. 1981b. Drawing/Plan. Drawing# BR664.66229-C1. "Burn Pits – Liquid Disposal Topography." June.

Rocketdyne. 1982. Report. "Chemical Analysis of Contaminated Soil Samples 'Burn Pit' Santa Susana Field Lab." April 28. BNA00377384.

Rocketdyne. 1984. Internal Letter. "Revised Analysis of the Availability of 3,000 PSIG GN2 for the Fragility Test Stand." July. HDMSE00042930.

Rocketdyne. 1990. Drawing/Plan. Drawing #60971-9. "Master Plot Plan and Contour Map." March.

Rocketdyne. 1992. *Area I Thermal Treatment Facility (CAD093365435) Revised Closure Plan.* January.

Rocketdyne. 1993a. *Area I Thermal Treatment Facility (CAD093365435) Amendment #1 to the Revised Closure Plan.* September.

Rocketdyne. 1993b. Drawing/Plan. "Aerial Topographic Exhibit."

Rocketdyne. 1998. Memo. "TTU Burn Facility Log- RP1- TEAB Materials." February 13. BNA03080929.

Science Applications International Corporation (SAIC). 1991. Report. *Draft Visual Site Inspection Report for Rockwell International, Rocketdyne Division.* February. HDMSE00102522.

Science Applications International Corporation (SAIC). 1994. Final RCRA Facility Assessment Report for Rockwell International Corporation, Rocketdyne Division; Santa Susana Field Laboratory, Ventura County, California. May. HDMSE00008191.

SWCA Environmental Consultants. 2006. *Summary of Biological, Cultural, and Paleontological Resource Assessments on the Area 1 Burn Pit – Solid Waste Management Unit 4.8, with Recommendation for Mitigation.* June.

United States Department of Energy (DOE), Office of Environmental Management, Oak Ridge Operations Office. 2009. *Risk Assessment Information System (RAIS) Preliminary Remediation Goals (PRGs) for Radionuclides User's Guide.* Website accessed on June 17, 2009. http://rais.ornl.gov/prg/rais_rad_prg_guide.shtml

United States Environmental Protection Agency (USEPA), Office of Radiation and Indoor Air, Office of Solid Waste and Emergency Response. 2000. *Soil Screening Guidance for Radionuclides: User's Guide*. October. http://www.epa.gov/superfund/health/contaminants/radiation/pdfs/ssuserguide.pdf

United States Environmental Protection Agency (USEPA). 1992. Framework for Ecological Risk Assessment. EPA/630/R-92/001. Risk Assessment Forum. U.S. Environmental Protection Agency, Washington D.C.

Unknown. 1980s. Photograph. "Burn Cage Concrete Pad", "Cylinder Treatment Pad", "Fire Demonstration Pad." pg 1-9. HDMSE00035742.

Unknown. 1982. Photograph. "Burn Pit Excavation Debris and Containers." August 12. HDMSE00044320.

Unknown. 1991. Drawing/Plan. "Figure 3 Area I Thermal Treatment Facility Features (1991)." HDMSE00039995.

Unknown. 1992. Report. *Modified Hazardous Facility Closure Plan for the Thermal Treatment Unit.* pg 24. HDMSE00039464.

Tables

Appendix D – Table D.2-1
Building Inventory
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Building Number	Start (Year)	End (Year)	Process/Chemical Use	Chemical Use Area Number	Comments	Reference
1XXX-001	1958	1971	Burn Pit Control Center - Remote operation of tilt device for release of liquid into the pits, and ignition of liquid. This structure has been removed.	1		Haley & Aldrich, 2006a, b; Rocketdyne 1962a
1XXX-002	1958	1971	Explosives Shed 1 - Storage of explosives. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-003	1958	1971	Explosives Shed 2 - Storage of explosives. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-004	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-005	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-006	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-007	1958	1971	Entrance Shack. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-008	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-009	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-010	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-011	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.
1XXX-012	1958	1971	Former structure identified in historical documents. This structure has been removed.	1		Haley & Aldrich, 2006a, b.

Appendix D – Table D.2-2
Tank Inventory
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Tank ID	Location	Size (gallons)	Contents[1]	Use Period	Use Status	Regulatory Closure Status	Additional Information	Chemical Use Area Number	Comments	Reference
Aboveground Tanks										
T-1	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-2	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-3	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-4	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-5	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-6	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-7	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-8	Unknown	1,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
T-9	Unknown	5,000	GN2	Unknown	Removed	N/A		1		Rocketdyne, 1984
V-A1BP-NTO	Near Area I Road near entrance to the Area I Burn Pit	Unknown	NTO	Unknown	Removed	N/A		1		Haley & Aldrich, 2006a, b; Rocketdyne, 1981
V-A1BP-1	Near Area I Road near entrance to the Area I Burn Pit	Unknown	Unknown	Unknown	Removed	N/A		1		Haley & Aldrich, 2006a, b.
V-A1BP-2	Near Area I Road near entrance to the Area I Burn Pit	Unknown	Unknown	Unknown	Removed	N/A		1		Haley & Aldrich, 2006a, b.
V-A1BP-3	Control Center	~ 11	Butane	Unknown	Removed	N/A		1		Rocketdyne, 1962b
V-A1BP-4	Control Center	~ 11	Butane	Unknown	Removed	N/A		1		Rocketdyne, 1962b
V-A1BP-5	Eastern Hummocky Area	2,200	Unknown	Unknown	Removed	N/A	Cylindrical tank, approximately 15 ft long, 5 ft diameter.	1		Rocketdyne, 1961
V-A1BP-6	Eastern Hummocky Area	Unknown	Unknown	Unknown	Removed	N/A	Tank shown on topographical map (1990)	1		Rocketdyne, 1990
V-A1BP-7	Eastern Hummocky Area	Unknown	Unknown	Unknown	Removed	N/A	Tank shown on topographical map (1990)	1		Rocketdyne, 1990
Underground Tanks										
No known underground tanks.										

Notes:
1. GN2 – nitrogen gas; NTO – nitrogen tetroxide; N/A - Not Applicable

Appendix D – Table D.2-3
Transformer Inventory
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Transformer/ Substation Number	Location	Use Period	Use Status	Description	Chemical Use Area Number	Comments	Reference
1XXX- Entrance Shack	Area I Burn Pit entrance road	1967 to Unknown Date	Removed	10 KVA 480 to 120/240V, and 0.5-in cold water line.	1		Haley & Aldrich, 2006b; Rocketdyne, 1967

Appendix D – Table D.2-4
Inventory of Other Site Features
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Feature ID	Location	Use Period	Use Status	Process/Chemical Use	Chemical Use Area Number	Comments	Reference
Area I Burn Pit RFI Site (SWMU 4.8)							
Area I Burn Pit RFI Site (SWMU 4.8)	South of CTL-V RFI Site and west of CTL-III RFI Site and Perimeter Pond RFI Site	1958 to 1971, with intermittent use through 1990	Inactive/ Removed	Originally built for the disposal of liquid propellants. Chemical/fuel disposal by burning of fuel, ignitors, reactive metals, organic solvents, explosives, toxic gases, and heavy metal toxics. Containers that held the wastes were buried within the confines of the site. The entire facility was permitted in 1980 as a waste pile. The facility was operated intermittently between 1971 and 1990.	1		Haley & Aldrich, 2006a, b; Rocketdyne, 1998
Burn Pit 1	West of Control Center	1959 to 1982, with intermittent use through 1990	Removed	Contained Burn Cage 1, for destruction of solid wastes and explosives.	1		Unknown, 1991; Unknown, 1992
Burn Pit 2	West of Control Center	1960 to 1982, with intermittent use through 1990	Removed	Contained Burn Cage 2, for destruction of solid wastes and explosives.	1		Unknown, 1992
Concrete Pad 1	Southwest of Concrete Pond 1	1958 to 1971, with intermittent use through 1990	Removed	Square concrete pad, 13 ft x 13 ft, which drained to Concrete Pond 1.	1		Groundwater Resources Consultants, 1992; Unknown, 1980s
Concrete Pond 1	Northwest of Control Center	1958 to 1971, with intermittent use through 1990	Removed	Collected drainage from Burn Pits 1 and 2. Also referred to as "Acid Pit".	1		Haley & Aldrich, 2006b.
Concrete Pad 2	Southwest of Control Center	1958 to 1971, with intermittent use through 1990	Removed	Bermed to the south and west.	1		Haley & Aldrich, 2006b.
Concrete Pond 2	South of Control Center	1963 to 1971, with intermittent use through 1990	Removed	Burning of wastes	1		Haley & Aldrich, 2006b.
Concrete Pond 3	South of Control Center	1963 to 1971, with intermittent use through 1990	Removed	Detonation of explosives, burning of wastes.	1		MWH, Date Unknown; Unknown, 1992
Cylinder Treatment Area (Concrete Pad)	West of Fire Department Demonstration Area	1958 to 1971, with intermittent use through 1990	Removed	Burial of spent gaseous cylinders	1		Unknown, 1980s
Earth Pond 1	Southwest corner of Area I Burn Pit RFI Site (northern pond)	1958 to 1971, with intermittent use through 1990	Removed	Shaped as an ellipse with 25 ft and 30 ft axes. Removed around 1989. Collected drainage from the burn pits.	1		Groundwater Resources Consultants, 1992; MWH, Date Unknown.
Earth Pond 2	Southwest corner of Area I Burn Pit RFI Site (southern pond)	1958 to 1971, with intermittent use through 1990	Removed	Collected drainage from the burn pits.	1		Haley & Aldrich, 2006b.
Earth Pond 3	South of Concrete Ponds 2 and 3	1958 to 1971, with intermittent use through 1990	Removed	Removed in 1982 (Excavation 6). Collected drainage from the burn pits.	1		Haley & Aldrich, 2006b.
Fire Department Demonstration Area 4	Central/southern portion of Area I Burn Pit RFI Site	Starting in 1971, with intermittent use through 1990	Removed	Concrete pad used for fire department demonstrations.	1		Haley & Aldrich, 2006b. Unknown, 1980s
Area I Burn Pit RFI Site (SWMU 4.8)							

Appendix D – Table D.2-4
Inventory of Other Site Features
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Feature ID	Location	Use Period	Use Status	Process/Chemical Use	Chemical Use Area Number	Comments	Reference
Hummocky Area (East)	Eastern portion of Area I Burn Pit RFI Site	Unknown	Inactive	Area of disturbed soil identified in historical document review.	1		Haley & Aldrich, 2006b.
Hummocky Area (West)	Western portion of Area I Burn Pit RFI Site	Unknown	Inactive	Area of disturbed soil identified in historical document review.	1		Haley & Aldrich, 2006b.
Isolated Geophysical Anomalies	Central and Central-southern portion of Area I Burn Pit RFI Site	Unknown	Removed	Metallic geophysical anomalies identified and removed by ICF Kaiser.	1		Haley & Aldrich, 2006b; ICF Kaiser, 1993
TTF Interim Status Facility	Central-eastern portion of Area I Burn Pit RFI Site	1958 to 1971, with intermittent use through 1990	Removed	Evacuation of pressurized cylinders and destruction of energized waste, such as nitroglycerin and ammonium perchlorate.	1		Haley & Aldrich, 2006a.
Debris Location 3035	Hummocky Area (West)	Unknown	Inactive	Soil pile approximately 3 feet by 9 feet intermixed with concrete. Soil pile too small to warrant sampling. In addition, no evidence of releases were observed during site visits.	N/A		Appendix J
Debris Location 3036	Hummocky Area (West)	Unknown	Inactive	1.5-inch-thick walled aluminum canister (empty) with charred lip and small piece of torch cut metal tubing.	N/A		Appendix J
Debris Location 3037	Northern SWMU 4.8 Boundary	Unknown	Inactive	Approximately 30-gallon metal drum (empty) and file cabinet drawer down slope of paved road.	N/A		Appendix J
Potential Migration Pathways and Drainages [1]							
Western Migration Pathways	West, SW, and south of Western/Southern Area I Burn Pit RFI Site Boundary	N/A	N/A	(1) Southwest and south of Earth Pond 2; (2) Along southwestern Area I Burn Pit Boundary; (3) Along southwestern Area I Burn Pit Boundary and east of Earth Pond 2	N/A		Haley & Aldrich, 2006b.
Eastern Migration Pathways	Eastern portion of Area I Burn Pit RFI Site and North of Perimeter Pond	N/A	N/A	(1) Northeast of former (1982) excavations 1-3; (2) North of former (1982) excavation 4; (3) Southwest of former (1982) excavation 4; (4) Along minor drainage leading from Burn Pit 2 and Concrete Pad 2 to the southeast; (5) Along drainage from southwest of former nitrogen tetroxide tank, east of former Control Center to east of Earth Pond 3; (6) In minor drainage southeast of Concrete Pond 3 that drains southeast towards Outfall 011; (7) Along southeast-trending drainage, to Perimeter Pond; (8) In two minor drainages leading southwest from structures formerly located north of Perimeter Pond; (9) In minor drainage leading south from structures formerly located north of Perimeter Pond; (10) In 2 minor drainages leading southeast to the southeast-trending drainage north of Perimeter Pond	N/A		Haley & Aldrich, 2006b.

Appendix D – Table D.2-4
Inventory of Other Site Features
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Feature ID	Location	Use Period	Use Status	Process/Chemical Use	Chemical Use Area Number	Comments	Reference
Western Drainages	Western portion of Area I Burn Pit RFI Site	N/A	N/A	(1) Western-most drainage, west of Western Hummocks; (2) South of Western Hummocks, north of Earth Pond 1; (3) Southwest of Earth Pond 2	N/A		Haley & Aldrich, 2006b.
Potential Migration Pathways and Drainages [1]							
Eastern Drainages	Eastern (North of Perimeter Pond) and southeastern portion of Area I Burn Pit RFI Site	N/A	N/A	(1) Concrete-lined drainage along northwest side of Perimeter Pond; (2) South of Outfall 011 at southeast corner of Area I Burn Pit	N/A		Haley & Aldrich, 2006b.
Southern Drainages	Between the southern Area I Burn Pit RFI Site boundary and Outfall 001 in Group 10	N/A	N/A	(1) South of south-central Area I Burn Pit boundary; (2) Southwest of Area I Burn Pit, in western drainage; (3) Along eastern drainage, south of Area I Burn Pit; (4) Along drainage south of confluence of eastern and western drainages (5) Approximately 900 ft northeast of Outfall 001 (6) Approximately 350 ft east of Outfall 001	N/A		Haley & Aldrich, 2006b.
Pipelines							
Pipeline to Perimeter Pond	Southeast portion Area I Burn Pit RFI Site	1959 to 1971, with intermittent use through 1990	Removed	6-in pipe connecting Earth Pond 3 and Perimeter Pond; removed by ICF Kaiser in 1993.	1		Haley & Aldrich, 2006b; ICF Kaiser, 1993

Notes:

1. Topographical drainages (potential migration pathways) as identified in the *RCRA Facility Investigation Work Plan – Area 1 Burn Pit – Solid Waste Management Unit (SWMU) 4.8* . Potential migration pathways at the Area I Burn Pit RFI Site (SWMU 4.8) are located south, east, and west of the SWMU 4.8 boundaries.

2. N/A – Not applicable (No documents indicate chemicals were used in this area; use information is unavailable).

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
1	#200 Thinner	200 gal	VOCs
2	#-81 Blasting Caps	2	Energetics
3	(0.6 lbs solids: KClO4, Ap, ZrH2 60%; NC, NG 40%). (61.4 lbs liquids: Acetone, etoh, etac)	62 lb	VOCs, Energetics
4	(1.5 lbs solids: CAB, NC, CMP, CONPALT, TMETN, DEGDN, TEGDN, NG, EC PVAC, TEGDA, PEG, R-45, GAP, GAPA, ATEC, NDPA, RDX, AP, KP, ZRH2, TAGN, K2SO4, C, CUO2O2, Al, Mg, B), (152.5 lbs liquids: acetone, toluene, ETOH, ETAC)	154 lb	VOCs, SVOCs, Metals, Energetics
5	(27 lbs liquids: Acetone, ethanol, isopropanol, NG, TMETN, DANPE), (Trace amounts: Al, Mg, Cr, Si)	27 lb	VOCs, SVOCs, Metals
6	(C2H4)4B2H2	1 ampoule	
7	(C2H5)2PH	1 ampoule	
8	(C2H5)3B	1 ampoule	
9	(CH3)2BrB2	1 ampoule	
10	(CH3)2NP(CH3)2	1 ampoule	
11	(CH3)2PH	3 ampoules	
12	(CH3)2PH/CH3PH2	1 ampoule	
13	(CH3)2PN(CH3)2	1 ampoule	
14	(CH3)3P	1 ampoule	
15	(CH3NBH)3	2 ampoules	
16	(Me2N)2BCl	1 ampoule	
17	(Me2NBCL2)2	1 ampoule	
18	(NCH3C6H4)2PN(CH3)2	1 ampoule	
19	(PF2)3N	1 ampoule	
20	(PF2N)n	1 ampoule	
21	0BCl2	1 ampoule	
22	0MePH	1 ampoule	
23	0PH2	1 ampoule	
24	1 of 13 was CC/DOT 3A480-chlorine	13 cylinders	
25	1,3-Diphenphinophosphine	1 ampoule	
26	1,3-Diphosphino propane	1 ampoule	
27	1,4-Diphosphino butane	2 ampoules 1 ampoule	
28	10% Fluorine	1 cylinder	
29	20% Nitroglycerine, 80% methylene chloride	180 lb	VOCs, Nitrogen Compounds

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
30	30% Methylene chloride solution	355 lb	VOCs
31	4 bottles unknown liquid	2 qts	
32	49-75 gram RDX pellets (SSME)	3.7 kg	
33	5% TEAB	3 gal	Energetics, Metals
34	5% TEAB/RP-1	20 gal	Energetics, Metals
35	50% propyl nitrate/50% isopropyl alcohol	5 gal	VOCs
36	6 samples of FTM	1 qt	
37	75% C2H5OH/ 25% AZDNE	1 gal 2 gal	
38	a plasticizer (TEGDN)	--	SVOCs
39	AB-1	5 lb	
40	Acetic Acid	1 gal 1 gal	Acids/Bases
41	Acetone	5 gal 55 gal 55 gal 55 gal 100 gal 110 gal 110 gal 110 gal 110 gal 110 gal 110 gal 150 gal 165 gal 200 gal 220 gal -- gal -- gal -- gal	VOCs
42	Acetone (contaminated)	55 gal 55 gal 55 gal 110 gal	VOCs

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
43	Acetone, ETOH, ETAC, NC, CAB, DANPE, NG, RDX, AP, RDX, Al2O3, Cr2O3, MgO, Al, Mg, Cr, paper towels, plastic containers	2 gal	VOCs, Metals
44	Acetonitrile	5 gal -- gal	VOCs
45	Acetylene	one very small K bottle 10 ft3 10 ft3 50 ft3 50 ft3 285 ft3	
46	Acid-cleaning	20 gal	Acids/Bases
47	Acids	1 gal 5 gal 8 gal 20 gal 20 gal 22 gal 83 gal 150 gal 200 gal 220 gal (4 drums) 230 gal 250 gal 261 gal 313 gal 1,850 gal -- gal	Acids/Bases
48	Acids/misc acids	-- gal	Acids/Bases
49	AFN25	0.3 kg	

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
50	Alcohol	55 gal 55 gal 55 gal 110 gal 110 gal 220 gal 220 gal 250 gal 275 gal 355 gal 410 gal 750 gal 1,515 gal 1,800 gal 7,445 gal	VOCs
51	Alcohol (contaminated)	165 gal	VOCs
52	Alcohols	-- gal	VOCs
53	Alkali metals	10 lb	Metals
54	Alkaline Cleaner	150 gal	Metals
55	Alkaline powder	150 lb 150 lb	Metals
56	Aluminum	50 lb	Metals
57	Aluminum	-- lb	Metals
58	Aluminum Chloride	4 pt 10 gal 10 gal 10 gal 105 lb 230 lb	Metals
59	Aluminum oxide	-- lb	Metals
60	Aluminum powder	-- lb	Metals
61	Aluminum powder 54 gm + Freon TF	150 mL	Metals, VOCs
62	Aluminum turnings 33 gm saturated with sulfur-base cutting oil + Freon TF	150 mL	Metals, VOCs

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
63	Ammonia	2 K bottles 2 gal 5 gal 10 gal 20 gal 20 gal 145 gal 150 gal 150 gal 175 gal 201 gal 205 gal 233 gal 250 gal 255 gal 420 gal	
64	Ammonia (liquid)	4 cylinders	
65	Ammonia perchlorate	5 lb 200 lb 200 lb 225 lb 631 lb	Inorganics
66	Ammonia, small cylinders	2 cylinders	Inorganics
67	Ammonium perchlorate (oxidizers)	-- lb	Inorganics
68	Ammonium perchlorate	0.36 lb 3 lb 20 lb 55 gal -- gal -- gal -- gal	Inorganics
69	Ammonium perchlorate, AP	-- gal	Inorganics
70	Amyl nitrate	5 gal	
71	Anhydrous ammonia	1 cylinder 1 cylinder	

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
72	AP nitrate esters	-- gal	
73	AP, GAP, TMETN, N-100, C, NMA.	4.5 lb 4.5 lb	Energetics
74	approximately 60 cubic yards of loosely packed empty steel drums and misc. scrap metals formally hazardous materials	60 CY	Metals
75	Aqua ammonia	60 gal	
76	Aqueous ammonia	10 gal 538 gal	
77	Argon	1 cylinder 1 cylinder -- cylinders	
78	Argon Gas	240 ft3	
79	aromatic naphtha	330 gal	SVOCs
80	Arsenic	0-1 mg/kg	Metals
81	AZDNE/MeCl2	0.05 kg	
82	B5H8Et	1 ampoule	
83	B5H8I	1 ampoule 1 ampoule	
84	B5H9	1 ampoule 1 ampoule 1 ampoule 1 ampoule	
85	Barium	0-5 mg/kg	Metals
86	Barium chloride	50 lb	Metals/Inorganics
87	Bases	-- gal	Acids/Bases
88	BBr3	1 ampoule 1 ampoule	
89	Benzaldehyde	3 pt	
90	Benzene	1 gal 2 gal 5 gal 5 pt 10 gal 23 gal -- gal	VOCs

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
91	Benzene on sawdust	2 gal	VOCs
92	Benzene/MBDA recovery	5 gal	VOCs
93	Benzene-HCL	265 gal	VOCs, Acids/Bases
94	Benzene-Hydrochloric Acid Mixture	990 gal	VOCs, Acids/Bases
95	Benzol	165 gal 550 gal	
96	Bermite Carbides	72	
97	Beryllium	0-1 mg/kg	
98	BH Polymer	1 ampoule	
99	Binders	--	
100	Bis Ethyl 2 Chloroformal	0.1 kg	SVOCs
101	Bis(2,2-difluoramino-5,5,5-fluorodinitropentyl) formal (SYFO) 50# solution in 30% methylene chloride solution	5 gal	SVOCs
102	Bis(2,2-diflouroemino-5,5,5-fluorodinitropentyl) formil (SYFO)	5 gal	SVOCs
103	Bis(fluorodinitroethoxy) 2,2-bis(difluoramino) propane (SYEP)	5 gal	SVOCs
104	Bis(fluorodinitroethoxy)-2-isopropanol (SECOH)	30 gal	SVOCs
105	Bis(fluorodintitroethoxy) 2,2-bis(difluoroamino) propane (SYEP) 35# solution in 30% methylene chloride solution	5 gal	SVOCs
106	Bis(fluorodintitroethoxy)2-propanol (SECOH) 200# solution in 30% methylene chloride solution	30 gal	SVOCs
107	Black Powder	1 lb	
108	Blasting caps	1 1 1 3	Energetics
109	B-methyl Borazine	1 ampoule	
110	Boric oxide	--	Metals
111	Borol	4 lb	Metals
112	Boron 90%	1 gal	Metals
113	Boron amorphous	55 gal 55 gal 1 cardboard-like drum	Metals
114	Boron Fuel	110 gal	Metals
115	Boron hydride	1 lb	Metals

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
116	Boron trifluoride	240 ft3 5 lb	Metals/Inorganics
117	Bottles	--	
118	Breathing air	--	
119	Bromide pentaflouride serial RS0215	--	
120	Bromine	--	
121	Bromine pentafluoride	--	
122	Bromine pentafluoride (cylinder)	--	
123	Bromine pentafluoride general chemical serial R-59	--	
124	Bromine triflouride	--	
125	Bromine trifluoride	--	
126	BTU NF compound	--	
127	Butadiene	--	
128	Butadiene polymate	--	
129	Butadiene polymer, R-45	--	
130	Butadienes	--	
131	Butanetriol trinitrate	--	
132	C2H5BCl2	--	
133	C2H5PH2	--	
134	C2H5SH	--	
135	Cadmium	--	Metals
136	CaH2	--	
137	CAL-3	--	
138	Calcium chloride	--	
139	Calcium hydride	400 lb	
140	Carbon Tetrachloride	110 gal	VOCs
141	Cartridge NA5-28088-1	--	
142	Cartridge NA5-28124	--	
143	Cartridge NA5-28124T1	--	
144	Caustic Potash	--	Acids/Bases
145	Caustic soda	110 gal 650 gal	Acids/Bases
146	CCl4	--	
147	Cesium	2 lb 5 lb	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
148	CF2Cl2	--	
149	CF3I	--	
150	CF3SF5	--	
151	CH3HP(CH2)3PHCH3	--	
152	CH3MgBr in THF: 3-100 gm bottles	--	
153	CH3PCl2	--	
154	CH3SiCl3	--	
155	Chem Solvent	--	VOCs
156	Chemicals, unknown	56 gal	
157	Chlorine	--	
158	Chlorine & O2 gas	--	
159	Chlorine Gas	--	
160	Chlorine pentafluoride (compound A)	--	Inorganics
161	Chlorine Pentafluoride, Compound A	--	Inorganics
162	Chlorine Trifluoride	--	Inorganics
163	Chlorine trifluoride (cylinder)	--	Inorganics
164	Chlorine trifluorine	--	Inorganics
165	Chlorobutadiene	--	
166	Chloroform	--	VOCs
167	Chloropropane	--	VOCs
168	Chromic acid Solution	--	Metals
169	Cleaning materials and swabs	--	
170	CMP, N-100, DANPE, CMP, NC, NG, PCOE, SYEP, CAB, ATEC, GAPA, R-45, DD1, DOA, PEC, CMGA, RDX, NDPA, ZrH2, Si, HMX, B, KClO3, NaHCO3, DATH, S, yellow dye, Al, am. Iodate, dechlorane, PbV2, K2Cr2O2, hexachloroethane, acetone, toluene, ethanol, ethyl acetate.	--	VOCs, Metals
171	CO	--	
172	CO2	--	
173	CO2 (cylinder)	--	
174	Comp A.	--	Inorganics
175	Comp C-4	--	Inorganics
176	Comp. A	--	Inorganics
177	Composite solid propellant grain	--	Propellant
178	Compound A	--	Inorganics
179	Compress gas cylinder	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
180	Compressed air	--	
181	Conax valves	--	
182	Copper	--	Metals
183	Crude CH3SF5	--	
184	CTF cylinder	--	
185	CTF cylinders	--	
186	CTF-Igniter	--	
187	Cupric chloride	--	
188	Cyclonite, RDX	--	
189	Cyclo-tetramethylene-Nitramine	--	Energetics
190	Cyclotrimethylene trinitramine	--	Energetics
191	Cylinders	--	
192	Cylinders with strong oxidizers	--	
193	Cylinders with unknown material	--	
194	DATB	--	
195	Daworals sodium	--	
196	DCFO/CH3CN	--	
197	Decaborane	--	VOCs
198	Decon.	220 gal	
199	Decon. Soln.	110 gal	
200	DEGDN	--	
201	Dekazine	--	
202	Delta	--	
203	Desiccator with unknown contents + cap	--	
204	Detonating primers 2 Gr Long 8258-470640-3	--	
205	Deuterium, small cylinders	--	
206	DHSG ignition, TEB canisters	--	Energetics
207	Diazidylnitramino pentane, DANPE	--	
208	Dibutylphthalate	--	
209	Diesel fuel	--	VOCs
210	Diesel fuel oil	--	VOCs
211	Diethyl ether/benzene/magnesium boro hydride diammoniate (MBDA) residues. 4 ~1-L bottles	--	VOCs
212	Diethylcyclohexane	165 gal	
213	Diethylene glycol dinitrate	--	

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
214	Diethylene triamine	--	Energetics
215	Dimazine	--	
216	Dimethyl mercury	--	Metals
217	Dinitrotoluene	--	VOCs
218	Dioctylphthalate	--	SVOCs
219	Dioctylphthalate, DOP	--	SVOCs
220	Dioxane	--	VOCs
221	Dioxin	--	Dioxins
222	Ditto fluid	110 gal	
223	DPA-HPE-NFPA	--	
224	Dry nitrogen	--	
225	Dynamite	--	Energetics
226	Elec. Lighters	--	Energetics
227	Electric igniters	95	Energetics
228	Electric squib	--	Energetics
229	Electric squib ignitors	--	Energetics
230	Electrolyte	--	
231	Electrolyte Solution	--	
232	Electrolytic solution	--	
233	Empty cylinder(s)	--	
234	Empty Drums, UDMH	--	SVOCs
235	Empty TEB canister	--	Energetics
236	Energetic binders in 300ml round-bottom flasks	--	Energetics
237	Enjay dicyclopentadine	--	
238	Epoxy	--	
239	Et2BCl	--	
240	Et2PH	--	
241	EtB5H8	--	
242	EtBBr2	--	
243	EtBCl2	--	
244	Ethane, Large cylinders	--	
245	Ethanol	--	VOCs
246	Ethenol	--	VOCs
247	Ether	--	VOCs
248	Ether Squibs	--	

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
249	Ether/benzene/MBDA	--	
250	Ethyl alcohol	--	
251	ethyl benzene	--	VOCs
252	Ethyl deka borane	--	VOCs
253	Ethyl nitrate	--	
254	Ethylamine	--	
255	Ethylene diamine	55 gal, 375 gal	
256	Ethylene diamine (contaminated)	--	
257	Ethylene diamine (drain back)	--	
258	Ethylene oxide	--	
259	EtNH2	--	
260	EtPH	--	
261	EtPH2	--	
262	Explosive A+B	--	Energetics
263	explosive materials and paper contaminated with TEA and TEB	--	Energetics
264	Explosive wastes	--	Energetics
265	Explosives	--	Energetics
266	Explosives A&B	--	Energetics
267	Explosives bolts	--	Energetics
268	F2 gas generator pellets (NF4/BF4/KF/Al)	--	Inorganics
269	F2 serial FL2540	--	Inorganics
270	FDNE	--	
271	FDNE 400# Solution	--	
272	FDNE/alcohol	--	
273	FDNE/MeCl2/C2H5OH	--	
274	Ferrocene	--	
275	Fl empty cylinder	--	Inorganics
276	Flammable rags (90-98%) contaminated with nitrocellulose (0-5%), ammonia perchlorate (0-5%), cyclonite (0-3%), aluminum (2%), nitroglycerin (0-2%), polybutadiene (0-2%), acetone (5-	--	
277	Flare mix	--	
278	Flares smoke	--	
279	Florox	--	
280	Flourine allied chem. 29-230411	--	Inorganics
281	Flourine gas	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
282	Fluoride	--	
283	Fluoride-matheson serial TH542	--	
284	Fluorine	6 lb	
285	Fluorine (3 cylinders)	--	
286	Fluorine (5 cylinders)	--	
287	Fluorine cylinders	--	
288	Fluorine Gas	--	
289	Flushing oil	385 gal	VOCs, TPH
290	Flushing oil (sludge)	--	VOCs, TPH
291	Formic Acid	--	Acids/Bases
292	Freon	--	VOCs
293	Freon + acid	--	VOCs, Acids/Bases
294	Freon NTO	--	VOCs, Energetics
295	Freon TF	--	VOCs
296	Fuel	--	
297	Fuel and additives	--	
298	Fuel mixtures	--	
299	Fuel oil	--	VOCs, TPH
300	Fuel samples	--	
301	Fuel samples and chemicals	--	
302	Fuels, Cont.	--	
303	GAP 30%, Ap/C 70%. Mix 3-21-1	--	Energetics
304	GAP 30%, Ap/C 70%. Mix 3-21-1,2	--	Energetics
305	GAP 30%, Ap/C 70%. Mix 3-21-2	--	Energetics
306	GAP, N-100, DANPE, GAPA, AP, Mg, Cr, HMX, NC, CMP, DATH, TMETN, DADNH, HMDI, acetone, ethyl acetate, ethanol	--	Energetics
307	GAP, N-100, DANPE, HMX, GAPA, TMETN, NC, CMP, DATH, DADNH, paper towels, plastic tubes and beakers, Atlasol yellow dye.	--	Energetics
308	GAP, N-100, TMETN, DBTDL, DANPE, CMP, R-45, DD1, PS555, GAPA, NC, NG, R-18, IDP, HD1, CAB, DOA, PEG, CMGA, AP, MNA, C, TPB, SiO2, Al, CuO2O2, Si, NOPA, KClO3, NaHCO3, S, yellow dye, BaCrO3I2, hexachloroethane, Fe, Mg, Fe2O3, Mo, B, I2O5, RDX, ZrH2, ATEC, EC, DATH, PCOZ, SYZP, HMX, TI, Am. IUDATE?,BI, DeChlorane,K2CR2O7, Papers, Plastic Containers.	--	Energetics
309	GAP/DANPE 30%, AP/AL/Mg/Cr 70%. Paper towels, plastic containers.	--	Energetics
310	Gas cylinders	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
311	Gas mixtures (cylinders)	--	
312	Gases, unknown	--	
313	Gasoline	110 gal, 55 gal	VOCs
314	Gasoline soaked sawdust	--	VOCs
315	GDNFE	--	
316	GDNFE/alcohol	--	
317	GDNFE/MeCl2/alcohol	--	
318	Gear oil	165 gal	TPH
319	Glycerin	--	
320	Glycidyl azide polymer	--	
321	Glycidyl Fluorodinitroethoxide (GDNFE) 160# solution in 30% methylene chloride solution	--	VOCs
322	Glycidylazide polymer azide, GAPA	--	Energetics
323	Glycidylazide polymer, GAP	--	Energetics
324	GM lab cylinders	--	
325	Green CO2	--	
326	Green K bottle	--	
327	gun propellants: binder materials; plasticizers; and energetic and solid oxidizers	--	Energetics
328	Gunpowder	--	Energetics
329	HAP	--	
330	HCL	--	Acids/Bases
331	Heavy aromatic naphtha	--	SVOCs
332	Heptane	500 gal	VOCs
333	Heptane (contaminated with solid propellant)	--	VOCs
334	Heptane (contaminated)	--	
335	Hexamitro stilbene	--	VOCs
336	Hexane	--	VOCs
337	Hexanes	1,155 gal	VOCs
338	Hexogen, HMX	--	Energetics
339	Hg(CH3)2	--	
340	Hi-Cal-3	--	
341	High explosives (Dynamite Comp. B. TNT)	--	Energetics
342	Hivelites	--	
343	HMX	--	Energetics

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
344	HMX scrap	--	Energetics
345	HMX-Nitrocellulose	--	Energetics
346	HNAH	--	
347	HNB	--	
348	HNF	--	
349	HNS	--	
350	HX310	--	
351	Hybaline	--	Nitrogen Compounds
352	Hybaline & RP-1	--	Nitrogen Compounds
353	Hybaline A and RP1	--	Nitrogen Compounds
354	Hybaline and RP	--	Nitrogen Compounds
355	Hybaline- Cal-3	--	Nitrogen Compounds
356	Hybrid motor grades	160 lb	
357	Hybrid motor grains	--	
358	Hydraulic oil	55 gal	VOCs, TPH
359	Hydraulic oil (contaminated)	--	VOCs, TPH
360	hydrazine	6,955 gal, 2,765 gal (6 lb)	SVOCs
361	hydrazine (contaminated)	--	SVOCs
362	Hydrazine + cap	--	SVOCs
363	Hydrazine 75%, Ethanol 21%, water 4%	--	SVOCs
364	Hydrazine 90%, EDA 10%	--	SVOCs
365	Hydrazine and admixtures	--	SVOCs
366	Hydrazine and admixtures samples	--	SVOCs
367	Hydrazine and water	--	SVOCs
368	Hydrazine and water (drain back)	--	SVOCs
369	Hydrazine and water 20%	--	SVOCs
370	Hydrazine and water 50%	--	SVOCs
371	Hydrazine mixtures	--	SVOCs
372	Hydrazine Nitrate	--	SVOCs
373	Hydrazine, non-returnable drums	--	SVOCs
374	Hydrazine, returnable drums	--	SVOCs
375	Hydrazine, warehouse drums	--	SVOCs
376	Hydrazine/ HMX Propellant Mixture	--	SVOCs
377	Hydrazine-admixtures and lab chem.	--	SVOCs

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
378	Hydrazinefluoride (N2F4) ICC3AA2265	--	SVOCs
379	Hydrazines	--	SVOCs
380	Hydrocarbon	--	TPH
381	Hydrocarbon, non-returnable drums	--	TPH
382	Hydrocarbon, warehouse drums	--	TPH
383	Hydrocarbons	8,030 gal	TPH
384	Hydrocarbons EB-40	--	TPH
385	Hydrochloric Acid	--	Acids/Bases
386	Hydrofluoric Acid	--	Acids/Bases
387	Hydrogen	--	
388	Hydrogen argon	--	
389	Hydrogen bromide	--	
390	Hydrogen chloride/helium	--	
391	Hydrogen fluoride	--	Inorganics
392	Hydrogen fluoride RC4463	--	Inorganics
393	Hydrogen gas	--	
394	Hydrogen sulfide	--	VOCs
395	Hydrogen, Large cylinders	--	
396	Hydrogen, small cylinders	--	
397	Hydrolic oil	--	TPH
398	Hydrolic oil (Contaminated)	--	TPH
399	Hydroxy terminated polybutadiene	--	
400	Hydroxy terminated polybutadiene, HTPB	--	
401	Hypergol igniters	--	Energetics
402	Hypergol TEA	--	Energetics
403	Hypergol TEA/TEB/RP-1 residue	--	Energetics
404	Hypergol TEB	--	Energetics
405	Igniter Class C	--	Energetics
406	Igniter ST4530001 RE001	--	Energetics
407	Igniters	--	Energetics
408	Inhibited-Red Fuming Nitric Acid	--	Acids/Bases, Nitrogen Compounds
409	Initiator NA5-26528-3	--	Acids/Bases, Nitrogen Compounds

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
410	Initiator R5950	--	Acids/Bases, Nitrogen Compounds
411	IRFNA	--	Acids/Bases, Nitrogen Compounds
412	IRFNA (obsolete spec)	--	Acids/Bases, Nitrogen Compounds
413	IRFNA, NTO	--	Acids/Bases, Nitrogen Compounds
414	Iron carbonyls + caps. 3-1 pt. cans	--	
415	Iso octane	--	VOCs
416	Isopropyl alcohol	110 gal	VOCs
417	Isopropyl alcohol	--	VOCs
418	Isopropyl Alcohol/NTO mixture	--	VOCs, Nitrogen Compounds
419	Isopropyl Butane	--	VOCs
420	JP Fuel	--	TPH
421	JP Fuel and water	--	TPH
422	JP-4	4,000	TPH
423	JP-4 (kerosene base)	--	TPH
424	JP5 (contaminated)	--	TPH
425	K bottle	--	Energetics
426	KAS(?)-10	--	Energetics
427	K-Bottle unknown (liq gas)	--	Energetics
428	K-bottle. (1 empty). Compound A	--	Energetics
429	K-bottle. Unknown quantity/contents cylinders	--	Energetics
430	K-bottle. Unknown quantity/contents. "Army"	--	Energetics
431	Kelite	--	
432	Kelite (sludge)	--	
433	Kerosene	--	TPH
434	Ketones	--	
435	Lab chemicals	--	
436	Lab chemicals and fuel samples	--	
437	Lab chemicals and mixtures	--	
438	Lab Chemicals, fuel samples	--	
439	Lab chemicals, mixtures	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
440	Lab samples (fuels)	--	
441	Lab silver cylinder	--	
442	Lab. Chemicals	--	
443	Laboratory waste	--	
444	Lachrymatory	--	
445	Lackrymatory	--	
446	Lacquer Dilute	55 gal	VOCs
447	Lance grains	--	
448	Lacquer Thinner	--	VOCs
449	Large TEB bottle	--	Energetics
450	Lead	--	Metal
451	Leaded Paint (189 gallons)	--	VOCs, Metal
452	Licthih	--	
453	LiH	--	Metals
454	linseed oil (contaminated)	--	TPH
455	Liquid Rubber (contaminated)	--	
456	Liquid waste nitrate esters	--	
457	Liquified petroleum gas	--	TPH
458	Lithium, chrome	6 lb	Metals
459	Lithium chloride	825 gal	Metals
460	Lithium hydride	--	Metals
461	Lithium metal	--	Metals
462	Lithium metal powder	--	Metals
463	Lube oil	--	TPH
464	Lube oil (contaminated)	--	TPH
465	Lube oil-heavy	--	TPH
466	Lube oil-light	--	TPH
467	Magnesium	820 gal	Metals
468	Magnesium powder	--	Metals
469	Magnesium shavings	--	Metals
470	Magnesium/Teflon flare mix	--	
471	Manganese	--	Metals
472	Mathane	--	
473	MBDA residues	--	
474	Me Allyl PH	--	

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
475	Me Isopropyl phosphine	--	
476	Me N-Propylphosphine	--	
477	Me2ETp	--	
478	Me2NBCl2 Et2O	--	
479	Me2NH	--	
480	Me2PH	--	
481	Me4P2	--	
482	Me-D3 Iodide	--	
483	MeEtPBH2	--	
484	MeEtPH	--	
485	MePH2	--	
486	Mercuric oxide	--	Metals
487	Mercury	--	Metals
488	Mercury salts	--	Metals
489	Metal additives (aluminum)	--	Metals
490	Metal and/or metal oxides (Al, Bacon, Zirconium, magnesium)	--	Metals
491	Metal oxides	--	Metals
492	Metals	--	Metals
493	Metals Alkali	--	Metals
494	Methane	--	
495	Methane ethane	--	
496	Methane, large cylinders	--	
497	Methanol	--	VOCs
498	Methanol-benzene curric chloride-AlO3	--	VOCs
499	Methanol-Cupric Chloride-Aluminum Chloride Mixture	--	
500	Methanol-HCL	--	Acids/Bases
501	Methyl acetylene propadiene	--	
502	Methyl alcohol	110 gal	
503	methyl cyclo hexane	--	
504	Methyl-borate methanol	--	
505	Methyl-B-Trimethyl Borazine	--	
506	Metriol-tri-nitrate	25 lb	
507	MHF-5	--	
508	MIPB	--	
509	Misc Acids	--	Acids/Bases

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
510	Misc binders (FEFO/R-18, NG/R-18, TMETN/R-18, PGDNFE/EA-AA)	--	
511	Misc lab chemicals	--	
512	Misc samples of AB-1, QMB-3, and MBDA	--	
513	Misc small vials of TNM	--	
514	Misc solid propellant scraps	--	SVOCs
515	Misc solid propellant waste	--	
516	Misc. Contaminated fuels	--	
517	Misc. flammables	21,865 gal	
518	Misc. Lab Chemicals	200 gal	
519	Misc. Lab Chemicals (Various Size & Type)	--	
520	Misc. Lab chemicals and samples	--	
521	Misc. Laboratory Chemicals	--	
522	Misc. phenols	--	
523	Misc. small cylinders	--	
524	Misc. Waste chem.	2,878 gal	
525	Mix Oxides	--	
526	Mixed oxides	600 lb	
527	Mixed TAGN/HMX (dry)	--	SVOCs
528	MMH	--	SVOCs
529	MMH 70 ml + Freon TF	--	SVOCs
530	Mono-Methyl-Hydrazine	--	SVOCs
531	Muriatic	--	Acids/Bases
532	Muriatic acid	--	Acids/Bases
533	Muriatic Acids	--	Acids/Bases
534	Mydyne	5,620 gal 125 gal	
535	Mydyne (drain back)	--	
536	N2 gas generator pellets (NaN3 based)	--	
537	N2H4 + cap;	--	
538	NAK	--	
539	NAKA propellants	--	
540	NAKA solid	--	
541	NAKA waste-pyro scrap, Kim wipes	--	
542	Napalm	--	VOCs, TPH, SVOCs
543	Naphthalene	--	SVOCs

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
544	Naphthalene	--	SVOCs
545	NC	--	
546	NC RDX etc	--	
547	NC, NG, R-18, NDPA, HO1, ZrH2, Si, AP, GAP, GAPA, N-100, KCLO3, NaHCO3, S, Yellow dye, Paper, plastic containers.	--	
548	NC/CAB/DANPE/DINA/CMP 25%, RDX 75%. PEG/NG 50%, RDX/Al2O3/Cr2O3 50%. GAP/TMETN/GAPA/TEGDN/DANPE 50%, Atlasol yellow dye 50%.	--	
549	N-Dimethyl-B-Trimethyl Borazine	--	
550	Neutralized acid	--	
551	Nickel	--	Metal
552	Nitrate Agar	--	
553	Nitric acid	--	Acids/Bases
554	Nitric Acid (contaminated)	--	Acids/Bases
555	Nitric acid Sol	--	Acids/Bases
556	Nitric and Hydrofluoric Acid Mixture	--	Acids/Bases
557	Nitric oxide	--	
558	Nitrocellulose	--	
559	nitrocellulose RDX	--	
560	Nitrocellulose, NC	--	
561	Nitroexthane	--	
562	Nitrogen tetroxide	9,735 gal	Nitrogen Compounds
563	Nitrogen Tetroxide (contaminated)	--	Nitrogen Compounds
564	Nitrogen trifluoride	--	
565	Nitrogentetroxide	--	Nitrogen Compounds
566	Nitroglycerin	4 gal	
567	Nitroglycerin 180# solution in 30% methylene chloride solution	--	
568	Nitroglycerin, NG	--	
569	Nitroguandine	--	
570	Nitromethane poured onto sawdust: 2-500 gram bottle	--	
571	Nitrostarch	--	
572	Nitrosyl chloride	--	
573	Nitrous oxide	--	
574	NONA	--	
575	NTO	1,802 gal	Nitrogen Compounds
576	NTO cont. hardware	--	Nitrogen Compounds

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
577	NTO containing hardware	--	Nitrogen Compounds
578	NTO containing hardware and cylinders	--	Nitrogen Compounds
579	NTO cylinder	--	Nitrogen Compounds
580	NTO cylinders	--	Nitrogen Compounds
581	NTO/ 30% alcohol and 70% E20.	--	Nitrogen Compounds
582	N-trimethly borazole	--	
583	N-trimethyl borazale	--	
584	N-Trimethyl borazine	--	
585	N-Trimethyl-B-Methyl boranzine	--	
586	oil	--	TPH
587	Oil (contaminated)	--	TPH
588	Oil Waste	--	TPH
589	Oil, waste	--	TPH
590	Oil/Oil waste	--	TPH
591	Organic binder (HTPB)	--	
592	Oxidizers	--	
593	Oxidizers (ammonium nitrate)	--	
594	Oxygen	--	
595	Oxygen + nitrogen	--	
596	Oxygen cylinders	--	
597	Oxygen difluoride	--	
598	Oxygen Difluoride Gas	--	
599	Oxygen difluorine	21 gal 2 lb	
600	Oxygen Gas	--	
601	Oxygen/nitrogen	--	
602	Oxygen-nitrogen	--	
603	Paint	--	VOCs, Metals
604	paint and thinner mix	--	VOCs, Metals
605	Paint sludge	--	VOCs, Metals
606	Paint thinner	--	VOCs, Metals
607	Paint, mixtures	--	VOCs, Metals
608	Paper towels	--	
609	Paper towels contaminated with binder	--	
610	Paper towels contaminated with small amounts of oxidizer	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
611	Paper towels contaminated with small amounts of plasticizers	--	
612	Paper, plastic containers	--	
613	Para xylene	--	VOCs
614	Partially decomposed metallic materials all empty	--	Metals
615	PEG/NG 50%, RDX/Al2O3/Cr2O3 50%, paper towels, plastic containers	--	
616	PEG/NG 50%, RDX/MgO 50%, paper towels, plastic containers	--	
617	Pentaborane	1,385 gal 1,235 gal	
618	Pentaborane + unknown	--	
619	Pentaborane and acetone	--	
620	Pentaborane and RP1	--	
621	Pentaborane. 2 ampoules	--	
622	Penteborane and acetone	--	
623	Penteborane and RP1	--	
624	Penteborane and RP-1	--	
625	Perchloric Acid	--	Acids/Bases
626	Perchloroethylene	--	VOCs
627	Permangante Mix	55 gal	Inorganics
628	Pet. Benzene	--	VOCs
629	PGDNE	--	
630	PGDN-FEFO	--	
631	PH	--	
632	PH2(CH2)3PH2	--	
633	PH2(CH2)4PH2	--	
634	Phenols	--	SVOCs
635	Phenyl methyl phosphine	--	
636	Phenyl phosphine	--	
637	Phillips Soltrol 150	--	
638	Phillips Soltrol 170	--	
639	Phosphoric Acid	--	Acids/Bases
640	Phosphorous	--	
641	Phosphorous oxychloride	--	
642	Phosphorus	--	
643	Phosphorus Oxychloride	--	
644	Pipe residue	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
645	Pipernal	--	
646	Plasticizer (triethyleneglycol dinitrate, TEGDN)	--	
647	Plasticizers	--	
648	Plastisol Nitrocellulose	5 lb	
649	Plating solution	--	
650	PNC	--	
651	Polymer	--	
652	Polymer soap oil	--	
653	Polymer Waste	--	
654	Polymer/polymer waste	--	
655	Potassium	7 lb 4 lb	
656	Potassium Bromide	--	Inorganics
657	Potassium cyanide	--	Inorganics
658	Potassium Perchlorate	25 lb	Inorganics
659	Potassium perchlorate, KP	--	Inorganics
660	Potassium permangante	--	Inorganics
661	Potassium Cyanide	--	Inorganics
662	PPNF-Nitrocellulose	--	
663	PrBCl2	--	
664	Propane	--	
665	Propane/air	--	
666	Propellant and Pyrotechnic scraps	--	Energetics
667	Propellant scraps, wipes	--	Energetics
668	Propellant, solid	--	Energetics
669	Propellant, solids	--	Energetics
670	Propellants	--	Energetics
671	Propyl nitrate	--	
672	Propylnitrate poured onto sawdust: 1-500 gram bottle	--	
673	PS555, GAPA, N-100, AP, GAP, NAHCO3, S, KClO4, yellow dye, RDX, CMP, Si, R-45, DDI, CuO2O2, DANPE, paper, plastic containers.	--	
674	Pyradine	--	
675	Pyridine	--	
676	Pyroforic liquids	--	
677	Pyrophoric Aluminum	6 lb	Energetics, Metals

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
678	Pyrophoric Igniter	--	Energetics
679	Pyrophoric Igniter	--	Energetics
680	Pyrotechnic igniter	--	Energetics
681	Pyrotechnic Igniter	--	Energetics
682	Pyrotechnic misc. types	--	Energetics
683	pyrotechnics: organic binders; plasticizers; oxidizers; and metal or metal oxide additives	--	
684	Quarz Vool	--	
685	R-45, DD1, AP, CuO2O2, Al, si, CMP, GAP, N-100, GAPA, KClO4, ATLASOL yellow dye, KClo3, NaHCO3, S, paper, plastic containers.	--	
686	R-45, DD1, GAP, GAPA, N-100, R-18, HMD1, NC, NG, PS555, DANPE, AP, KClO4, KClO3, RDX, NaHCO3, S, Si, PMP, Al, CuO2O2	--	
687	R-45, DD1, IDP, s, KClO3, ATLASOL yellow, NC, ba(NO3)2, NaHCO3, GAP, N-100, AP, TMETN, MNA, C, TPB, R-18, HMD1, Mo, B, DD1, I2O5, DANPE, RDX, CMP, ATEC, DATH.	--	
688	R-45, DDi, AP, CuO2O2, Al, Si, GAP, N-100, yellow dye, GAPA, TMETN, CMP, DANPE, ethyl alcohol, acetone, toluene.	--	
689	R-45, DDi, AP, CuO2O2, Al, Si, GAP, N-100, yellow dye, GAPA, TMETN, CMP, DANPE, paper towels, plastic containers	--	
690	Ram set charges	--	
691	RDX	--	
692	RDX-Nitrocellulose	--	
693	Reactive waste	--	
694	reagent chemical bottles	--	
695	Red fume nitric acid	1,570 gal	Acids/Bases, Nitrogen Compounds
696	Red Fuming HNO3	1,285 gal	Acids/Bases, Nitrogen Compounds
697	red fuming nitric acid	--	Acids/Bases, Nitrogen Compounds
698	Redfume nitric acid	--	Acids/Bases, Nitrogen Compounds
699	Resin	--	
700	REX-17	--	
701	Rifle shells	--	Metals

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
702	RJ-1	3,900 gal	TPH
703	RJ-1 fuel	--	TPH
704	Rosin Flux	--	
705	RP0435	--	
706	RP1	--	TPH
707	RP-1	880 gal	TPH
708	RP1 (contaminated)	--	TPH
709	RP-1 (contaminated)	--	TPH
710	RP-1 (kerosene base)	--	TPH
711	RP1 and additives	--	TPH
712	RP1 and pentaborane	--	TPH
713	RP1 and TCP	--	TPH
714	RP1 and TEA	--	TPH
715	RP1 and water Mix	--	TPH
716	RP1, penteborane mix	--	TPH
717	RP-1/TEA TEB	--	TPH, Metals
718	Rubber binder (HTPB-hydroxy terminated polybutadiene)	--	SVOCs
719	Scrap gun propellant	--	
720	Scrap solid propellant	--	
721	Shell dispersol	--	
722	Shell lacquer diluent	--	
723	Silicate of soda	--	
724	Silicon	--	
725	SKL-4-DXE	--	
726	Small B, GM cylinders	--	
727	Small cylinders	--	
728	Small GM cylinders	--	
729	Small green cylinder	--	
730	Small green smoke pellet	--	
731	Small unknown cylinders	--	
732	small white canister	--	
733	Small white canister 30psi N2	--	
734	Smoke flares	--	
735	Smoke grenade mat.	--	
736	Smoke mix	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
737	Smoke powder	--	
738	Soda ash	--	
739	Sodium	905 lb	Metals
740	Sodium (used)	--	Metals
741	Sodium Arsenite	--	Metals
742	Sodium chromate	--	Metals
743	Sodium fluoride	--	Metals
744	Sodium hydroxide	--	Metals, Inorganics
745	Sodium nitrate	55 gal	Metals, Inorganics
746	Sodium nitrite	--	Metals, Inorganics
747	Sodium phosphate	--	Metals
748	Sodium Waste	--	Metals
749	Sodium, waste	--	
750	Soldering Flux	--	
751	Solid gun propellant scrap	--	
752	Solid oxidizers (hexogen)	--	
753	Solid propellant	--	
754	solid propellant and heptane	--	
755	Solid propellant scrap	--	
756	Solid propellant scraps plus misc ampolues from VanOwen.	--	
757	Solid propellants	100 lb	
758	solid propellants: rubber binder, plasticizers, oxidizers, and metal additives	--	
759	Solids, unknown	--	
760	Solvent	--	VOCs
761	Solvent waste	--	VOCs
762	Solvent/Solvent waste	--	VOCs
763	Solvents	--	VOCs
764	Squib 101513	--	
765	Squib 19-403189	--	
766	Squib valve 19-403211, P/N 1943	--	
767	Stenciled fluorine	--	
768	Stoddard Solvent	415 gal	VOCs
769	Sulfur dioxide	--	
770	Sulfuric Acid	--	Acids/Bases
771	Sulfuric trioxide	--	

Appendix D – Table D.2-5
List of Documented Waste Disposed of at Area I Burn Pit [1]
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
772	Sulfus dioxide	--	
773	Sulphuric Acid	--	Acids/Bases
774	TAE	--	
775	TAGN	--	
776	TAGN in IPA	--	
777	TAMA	--	
778	Tar	--	
779	TATB	--	
780	t-BuBCl2	--	
781	TCE	--	VOCs
782	TEA	50 gal	Metals
783	TEA (cylinder)	--	Metals
784	TEA and RP1	--	TPH, Metals
785	TEA and TEAB ignitors	--	TPH, Metals
786	TEA and TEB mixtures with RP1	--	Metals
787	TEA B	--	Metals
788	TEA cylinders	--	Metals
789	TEA samples	--	Metals
790	TEA, RP-1	--	TPH, Metals
791	TEA/TEB	--	Metals
792	TEA/TEB/RP-1	--	TPH, Metals
793	TEA/TEB/RP-1 + cap	--	TPH, Metals
794	TEA/TEB/RP-1 + cap. 4-1 gallon cans	--	TPH, Metals
795	TEAB	--	Metals
796	TEAB igniters	--	Metals
797	TEAB, RP-1	--	TPH, Metals
798	TEAB+RP-1	--	TPH, Metals
799	TEB	--	Metals
800	TEB canister	--	Metals
801	TEB in canister	--	Metals
802	TEB+TEAB igniters	--	Metals
803	Tetra isobutylene	--	VOCs
804	Tetrafluorane	--	VOCs
805	Tetrafluorohydrazine	--	SVOCs
806	Tetraisobutylene	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
807	Tetramethylene phosphine	--	
808	Thinner	--	VOCs
809	Thiophosgene Cl2CS	--	
810	Titanium	--	Metals
811	Titanium Tetrachloride	--	Metals
812	Titanium Trichloride	--	Metals
813	TMETN/GAP 30 %, AP, CP, C 70%. Mix 3-22-1,2,3	--	
814	TMETN/GAP 30 %, AP, CP, C 70%. Mix 3-22-1	--	
815	TMETN/GAP 30 %, AP, CP, C 70%. Mix 3-22-2	--	
816	TMETN/GAP 30 %, AP, CP, C 70%. Mix 3-22-3	--	
817	TNN	--	
818	TNT	--	Energetics
819	Toluene	--	VOCs
820	Toluene discoyante	--	
821	Triaminoguanidine nitrate	--	
822	Triaminoguanidine nitrate, TAGN	--	
823	Tributylamine	--	
824	Tributylborane	--	VOCs
825	Tri-chlor	--	VOCs
826	Trichloroethylene	--	VOCs
827	Trichloro	--	VOCs
828	Trichloroethene	--	VOCs
829	Trichloroethylene	--	VOCs
830	Trichlorr and polymer	--	VOCs, SVOCs
831	Triethyl Aluminum	--	Metals
832	Triethyl Aluminum Borane	--	Metals
833	Triethylaluminum	--	Metals
834	Triethylaluminum/triethylboran cylinder (NEAT, TEA/TEB 14 lb)	--	Metals
835	Triethylaluminum/triethylboron	--	Metals
836	Triethylamine	--	Metals
837	Triethylborane	--	Metals
838	Triethylboron	--	Metals
839	Triethylboron (PIG) cylinder (TEB volume 14lb; NEAT, TEA/TEB 14 lb)	--	Metals
840	Triethylboron cylinder (TEB volume 69.5 lbs)	--	Metals
841	Triethylboron-RPI Mixture	--	TPH, Metals

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
842	Triethyleneglycol dinitrate, TEGDN	--	Nitrogen Compounds
843	Triethylene-Glycol-Dinitrate	--	
844	Trifluoroacetic anahydride	--	
845	Trigger Assembly 1617-170-01	--	
846	Trigger Assembly ST2840002 RES005	--	
847	Trigger Assembly ST2840002 RES007	--	
848	Trimethioltrinitrate, TMETN	--	
849	Trimethyl borane	--	
850	Trimethyl boron	--	
851	Trimethyl-borate-CH3OH	--	
852	Trimethyl-Borate-Methanol	--	
853	Trimethylolethane trinitrate	--	Nitrogen Compounds
854	Tri-o-cresyl borate	--	
855	TTTT	--	
855	Turbine spinner grains	1,550 lb	
855	Turco acid (contaminated)	--	Acids/Bases
855	Turco acid (Lithium chloride)	--	Acids/Bases
855	TVOPA	--	
855	UDMH	1,790 gal	SVOCs
855	UDMH (contaminated)	--	SVOCs
855	UDMH +cap	--	SVOCs
855	UDMH 90%, water 10%	--	SVOCs
855	UDMH and water	--	SVOCs
855	UDMH and water (drain back)	--	SVOCs
855	UDMH empty xR Drums	--	SVOCs
855	UDMH mixtures	--	SVOCs
855	Unidentified chemicals	--	
855	unidentified cylinder	--	
855	Unidentified Fuel	--	
855	Unidentified fuels	--	
855	Unidentified liquid	--	
855	Unidentified material	--	
855	Union thinner	--	VOCs
855	Unknown	--	
855	Unknown (AA2015 propane/air)	--	

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Waste Disposed [2, 3]	Approximate Quantity	Comments[4]
855	Unknown (F2)	--	
855	Unknown (large cylinder)	--	
855	Unknown ampoule	--	
855	Unknown cylinder	--	
855	Unknown cylinder	--	
855	Unknown cylinders	--	
855	Unknown large cylinder	--	
855	Unknown quantity/contents K-bottle	--	
855	Unknown RP C4-9208	--	
855	Unknown RP4-920	--	
855	Unknown substances	--	
855	Unknown type empty cylinders	--	
855	Unknown vial	--	
855	Unsymmetrical-Dimethyl-Hydrazine	--	SVOCs
855	US Navy MP0607	--	
855	Valve Assembly NA5-260180-1D	--	
855	Versamid 140	--	
855	VM-P Naptha	330 gal	
855	Waste acid	--	Acids/Bases
855	Waste Oil	3,275 gal	TPH
855	Waste Polymers	175 gal	
855	Water purifier-polymetrics 7145631520	--	
855	Water with <5% binders	--	
855	Water, nitroglycerin, hexane, heptane	--	
855	white fuming nitric acid	--	Acids/Bases
855	White K bottle	--	
855	Xylene	--	VOCs
855	Zero gas	--	
855	Zinc	--	Metals
855	Zirconium Hydride powder	--	Metals
855	Zirconium nitrocellulose	--	Metals
855	Zirconium powder	--	Metals
855	ZnEt2	--	Metals

Notes:

Appendix D – Table D.2-5

List of Documented Waste Disposed of at Area I Burn Pit [1]

Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Waste Disposed [2, 3]	Approximate Quantity	Comments[4]

1. Reference document is Haley & Aldrich, 2006b

2. Releases generally occurred from 1958 to 1971, with intermittent use through 1990. Specific dates of releases are unknown. Dates are approximate, based on the timeframe of operations at the Area I Burn Pit. After closure in 1971, the Area I Burn Pit was used intermittently until 1990.

3. The exact size and nature of the waste disposed is often unknown.

4. Chemical category most closely associated with chemical spilled (if known or applicable):

Compound A – Chlorine pentafluoride (Inorganics)

AZDNE – Azidodinitroethan

DANPE – Diazidylnitroamino pentane (SVOCs)

ETOH – Ethanol

Feon TF – 1,1,2-Trichlorotrifluoroethane

GAP, GAPA – Glycidylazide polymer, Glycidylazide polymer azide (Energetic)

HCL – Hydrochloric Acid

HMX – cyclotetramethylene-tetranitramine (Energetic, Nitrogen Compounds)

Hybaline – Methylamine beryllium borohydride (Energetic)

IPA – isopropyl alcohol

JP (or JP4, JP5) – Jet Propellant (TPH)

KP – Potassium Perchlorate

MMH – Mono-Methyl-Hydrazine (SVOCs)

NTO – Nitrogen Tetroxide (Energetic)

RP1 (or RP) – Rocket Propellant 1 (TPH)

SSME – Space Shuttle Main Engine

TAGN – Triaminoguanidine nitrate (SVOCs, Nitrogen Compounds)

TEGDN – Triethyleneglycol dinitrate (SVOCs, Nitrogen Compounds)

TEA – Tri-ethyl-aluminum (Metals, Energetic)

TEB – Tri-ethyl-boron (Metals, Energetic)

TMETN – Trimethioltrinitrate (SVOCs, Nitrogen Compounds)

TNT – tri-nitro-toluene (Energetic, Nitrogen Compounds)

UDMH – Unsymmetrical-Dimethyl-Hydrazine (SVOCs)

-- (Quantity not available)

Appendix D – Table D.2-6
Site History – Investigations
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Chemical Use Area Number	Chemical Use Area Name	Date	Purpose	COPCs Analyzed	COPCs Reported	Comments	Reference
1	Area I Burn Pit RFI Site	1981-1982	(1) Investigation by radar and trenching, and (2) Sampling and removal of buried objects/soil disturbances.	VOCs, PAHs, Phenols, phthalates, anions, metals, formaldehyde, hydrazine, mercaptans	VOCs (soil vapor), metals, hydrazine, formaldehyde	Some samples were reported as being slightly hazardous for fluoride, aluminum, arsenic, barium, titanium, zinc, formaldehyde, and hydrazine, but average concentrations were below hazardous concentrations.	Haley & Aldrich, 2006b; Rocketdyne, 1982; Unknown, 1982.
		1990	Collection of soil samples for TTF Site Closure	VOCs, SVOCs, metals	Metals	"Ash" samples were analyzed for VOCs, SVOCs, metals, and six soil samples were analyzed for metals	Haley & Aldrich, 2006b
		1993	(1) Geophysical survey to locate metallic objects, and (2) Soil sampling	Metals, cyanide, pH, TPH, VOCs, SVOCs, energetics	Metals, VOCs	Metallic anomalies were excavated.	Haley & Aldrich, 2006b
		1994	Collection of soil samples in Earth Pond 2.	Dioxins	Dioxins		Haley & Aldrich, 2006b
		2000	Collection of soil samples	PCBs	PCBs		Haley & Aldrich, 2006b
		2003	Collection of soil leachate samples for perchlorate delineation	Perchlorate	Perchlorate	Perchlorate was not detected in soil leachate samples. Perchlorate was detected in one surface water sample.	Haley & Aldrich, 2006b
		2005	Collection of soil samples in Burn Pit 2.	Dioxins	Dioxins		Haley & Aldrich, 2006b
		2006	Collection of soil and sediment samples in migration pathways; radiological analysis	VOCs, metals, PAHs, dioxins, perchlorate (soil leachate), TPH, PCBs	Dioxins, Metals		Haley & Aldrich, 2006b

Appendix D – Table D.2-7
Site History – Soil Disturbance Areas
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Chemical Use Area Number	Chemical Use Area Name	Date	COPCs Targeted[2]	Media	Remediation/Soil Disturbance Description[1]	Reference
1	Area I Burn Pit RFI Site	1981-1982	Metals, VOCs	Soil	Central Portion of SWMU 4.8 - Excavation of 1,600 cubic yards of soil (referred to as excavation of the "waste pile") and debris (drums, cylinders, metal, other debris) with oversight of LARWQCB and DHS. The 1,600 cubic yards of excavation material was sent to the BKK Landfill in West Covina, CA (1,300 cubic yards were disposed of as non-hazardous waste, and 300 cubic yards were disposed of as hazardous waste). Presumably grading occurred following excavation of the waste pile.	Haley & Aldrich, 2006b DTSC, 1992c Rocketdyne, 1982 SAIC, 1994
		Unknown	Unknown	Unknown	Western Hummocky Area - soil disturbance in the western portion of SWMU 4.8 due to unknown operations at the Area I Burn Pit RFI Site.	CH2M HILL, 2008b
		Unknown	Unknown	Unknown	Eastern Hummocky Area - soil disturbance in the eastern portion of SWMU 4.8 due to unknown operations at the Area I Burn Pit RFI Site.	CH2M HILL, 2008b
		1993	Metals	Soil	Central Portion of SWMU 4.8 - Removal of structures (Burn Cage, Control Center, and Cylinder Treatment Area) and excavation of metallic anomalies, including the pipeline between Earth Pond 3 and Perimeter Pond.	Haley & Aldrich, 2006b ICF Kaiser, 1993
		2008	N/A	Soil	Southern-Central Portion of SWMU 4.8 - Grading in the southern portion of SWMU 4.8 to accommodate construction of a gravel road to Outfall 011 (Perimeter Pond RFI Site)	CH2M HILL, 2008b
		~ 2007	N/A	Soil	Eastern Hummocky Area - soil disturbance in the eastern portion of SWMU 4.8 due to construction of the groundwater extraction and treatment system (GETS)	

Notes:
1. LARWQCB – Los Angeles Regional Water Quality Control Board; DHS - Department of Health Services
2. N/A – Not applicable (No soil was removed)

Appendix D – Table D.2-8
Chemical Use Summary
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Chemical Use Area Types and Typical Target Analytical Suites															
			Solvent	Petroleum Fuels		Hydrazine-Related Compounds[1]	Oil-Related Materials	Metal Wastes (exclusive of debris areas)	Debris Areas/ Fill	Energetic Constituents[2]	Transformers	Leach Field	Non-metal Inorganic Compounds	Non-metal Inorganic Compounds		Acids/ Bases	Asbestos	
Chemical Use Area Number	Chemical Use Area Name	Potential Chemicals Used/Stored	VOCs	TPH, VOCs	SVOCs	VOCs, SVOCs (Hydrazines, Formaldehyde, NDMA, UDMH, and MMH)	SVOCs, TPH, PCBs, Metals	Metals, pH	TPH, Metals, VOCs, SVOCs, PCBs, Dioxins	Energetics, Metals	PCBs		Fluoride, Chloride, Nitrate, Sulfate, Bromide	Perchlorate	Dioxins, Furans	pH		Herbicides, Pesticides
1	Area I Burn Pit RFI Site	Dioxins, TPH, VOCs, SVOCs, PCBs, metals, energetics (primarily specialty nitrate compounds), experimental liquid and solid propellants, pyrotechnics/dynamite/igniters, hydrazines/MMH/UDMH, inorganics as liquid and/or gas (fluoride, nitrate, chloride/chlorine), plasticizers/polymers, oxidizers, acids, corrosives, asbestos, perchlorate	X	X	X	X	X	X	X	X	X		X	X	X	X	X	

Notes:
1. Potential hydrazine impacts were evaluated by analyzing for formaldehyde and n-nitrosodimethylamine (NDMA).
2. Energetics (TEA/TEB, TNT, NTO, and other igniters/explosives) impacts were evaluated using nitrogen breakdown products. Nitrogen forms included Nitrates and Nitrites, Total Organic Nitrogen and Total Kjeldahl Nitrogen SM4500 (Standard Methods 18th ed. Method 4500).

Appendix D – Table D.2-9
Conceptual Site Model
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Chemical Use Area Name (or Site if appropriate)	Ground Surface Elevation (ft msl)	Alluvium Thickness (ft)	Elevation Unweathered Chatsworth (ft msl)	Elevation of Near-Surface Groundwater (feet msl)	Near-Surface Groundwater Horizontal Gradient/Flow Direction (ft/ft)	Elevation of Chatsworth Formation Groundwater (ft msl)	Chatsworth Groundwater Horizontal Gradient/Flow Direction (ft/ft)	Surface Water Present? (Yes/No)	Surface Water Flow Information	Other Information?	Reference
Area I Burn Pit RFI Site	1730 to 1800	Approximately 0 to 25	1710 to 1810	1725 to 1749	0.0038/ southwest	1723 to 1744	Unknown/south	Yes, during rainfall events	Intermittent, surface water flows to drainage channels on the western and eastern sides of the Area I Burn Pit RFI Site. Surface water in the drainage channel in the eastern portion of the RFI site flows to Outfall 011 and ultimately south to Outfall 001 (RFI Group 10). Surface water in the drainage channel in the western portion of the RFI site flows south to Outfall 001.		Haley & Aldrich, 2006b.

Notes:
ft msl – feet above mean sea level

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
CLBS84S70	Soil Boring	WD243	9/26/2005	0	0.5	Composite Sample	In Place	MWH	Soil						X		X			
CTBS09	Soil Boring	RJ004	6/28/2000	0	0.5	Primary Sample	In Place	OGDEN	Soil								X			
CTBS09	Soil Boring	SJ004	6/28/2000	0	0.5	Split Sample	In Place	DTSC	Soil								X			
CTBS10	Soil Boring	RJ005	6/28/2000	0	0.5	Primary Sample	In Place	OGDEN	Soil								X			
CTBS1017	Soil Boring	CTBS1017S001	10/16/2008	0	1	Primary Sample	In Place	CH2M HILL	Soil						X	X			X	
CTBS1031	Soil Boring	CTBS1031S001	10/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
CTBS1031	Soil Boring	CTBS1031S001	10/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X					X					
CTBS1033	Soil Boring	CTBS1033S001	10/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X				X	X	X	X		X	X
CTBS1033	Soil Boring	CTBS1033S001SP	10/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
CTBS1033	Soil Boring	CTBS1033S001SP	10/16/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X				X	X			X	X
CTBS1107	Soil Boring	CTBS1107AS001	11/13/2008	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
CTBS1107	Soil Boring	CTBS1107AS001	11/13/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil						X				X	X
CTBS1107	Soil Boring	CTBS1107S001	10/13/2008	0	1	Primary Sample	In Place	CH2M HILL	Soil					X	X	X			X	
PPBS1009	Soil Boring	PPBS1009AS001	11/21/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil											X
PPBS1009	Soil Boring	PPBS1009S001	10/7/2008	0	1	Calculated Sample	In Place	CH2M HILL	Soil	X										X
PPBS1009	Soil Boring	PPBS1009S001	10/7/2008	0	1	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X			X	X
PPBS1039	Soil Boring	PPBS1039S001	9/26/2008	0	1	Calculated Sample	In Place	CH2M HILL	Soil											X
PPBS1039	Soil Boring	PPBS1039S001	9/26/2008	0	1	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X	X		X	X
SB_TTF_DR1	Soil Boring	SB_TTF_DR1_0-0.5	5/9/1994	0	0.5	Calculated Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_DR1	Soil Boring	SB_TTF_DR1_0-0.5	5/9/1994	0	0.5	Primary Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_DR2	Soil Boring	SB_TTF_DR2_0-0.5	5/9/1994	0	0.5	Calculated Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_DR2	Soil Boring	SB_TTF_DR2_0-0.5	5/9/1994	0	0.5	Primary Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_DR3	Soil Boring	SB_TTF_DR3_2-2.5	5/9/1994	2	2.5	Calculated Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_DR3	Soil Boring	SB_TTF_DR3_2-2.5	5/9/1994	2	2.5	Primary Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_DR4	Soil Boring	SB_TTF_DR4_0-0.5	5/9/1994	0	0.5	Calculated Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_DR4	Soil Boring	SB_TTF_DR4_0-0.5	5/9/1994	0	0.5	Primary Sample	In Place	GRC, Inc	Soil	X										
SB_TTF_RR-2	Soil Boring	SB_TTF_RR-2_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil					X					X	X
SB_TTF_RR-3	Soil Boring	SB_TTF_RR-3_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil					X					X	X
SB_TTF_RR-4	Soil Boring	SB_TTF_RR-4_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil					X					X	X
SB_TTF_RR-5	Soil Boring	SB_TTF_RR-5_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil					X	X	X			X	X
SB_TTF_RR-6	Soil Boring	SB_TTF_RR-6_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil					X					X	X
SB_TTF_RR-7	Soil Boring	SB_TTF_RR-7_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil					X		X			X	X
SB_TTF_RR-8	Soil Boring	SB_TTF_RR-8_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-1	Soil Boring	SB_TTF-1_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-10	Soil Boring	SB_TTF-10_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-11	Soil Boring	SB_TTF-11_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-12	Soil Boring	SB_TTF-12_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-13	Soil Boring	SB_TTF-13_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-14	Soil Boring	SB_TTF-14_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-15	Soil Boring	SB_TTF-15_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-16	Soil Boring	SB_TTF-16_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-17	Soil Boring	SB_TTF-17_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-18	Soil Boring	SB_TTF-18_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-19	Soil Boring	SB_TTF-19_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-19	Soil Boring	SB_TTF-19_2-2.5	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-19	Soil Boring	SB_TTF-19_2-2.5_WC	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-19	Soil Boring	SB_TTF-19_4-4.5	6/17/1993	4	4.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-19	Soil Boring	SB_TTF-19_4-4.5_WC	6/17/1993	4	4.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-2	Soil Boring	SB_TTF-2_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-20	Soil Boring	SB_TTF-20_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-21	Soil Boring	SB_TTF-21_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-22	Soil Boring	SB_TTF-22_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-23	Soil Boring	SB_TTF-23_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil						X	X			X	X
SB_TTF-23	Soil Boring	SB_TTF-23_0-0.5_AT	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X						
SB_TTF-24	Soil Boring	SB_TTF-24_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil					X	X	X			X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
SB_TTF-24	Soil Boring	SB_TTF-24_0-0.5_AT	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X									
SB_TTF-25	Soil Boring	SB_TTF-25_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-26	Soil Boring	SB_TTF-26_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-27	Soil Boring	SB_TTF-27_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil						X	X			X	X
SB_TTF-27	Soil Boring	SB_TTF-27_0-0.5_AT	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X						
SB_TTF-28	Soil Boring	SB_TTF-28_2-2.5	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-28	Soil Boring	SB_TTF-28_4-4.5	6/17/1993	4	4.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-3	Soil Boring	SB_TTF-3_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-30	Soil Boring	SB_TTF-30_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-31	Soil Boring	SB_TTF-31_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-32	Soil Boring	SB_TTF-32_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-32	Soil Boring	SB_TTF-32_10-10.5	6/17/1993	10	10.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-32	Soil Boring	SB_TTF-32_10-10.5_WC	6/17/1993	10	10.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-32	Soil Boring	SB_TTF-32_12-12.5	6/17/1993	12	12.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-32	Soil Boring	SB_TTF-32_12-12.5_WC	6/17/1993	12	12.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-32	Soil Boring	SB_TTF-32_2-2.5	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-32	Soil Boring	SB_TTF-32_2-2.5_WC	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-32	Soil Boring	SB_TTF-32_4-4.5	6/17/1993	4	4.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-32	Soil Boring	SB_TTF-32_4-4.5_WC	6/17/1993	4	4.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-32	Soil Boring	SB_TTF-32_6-6.5	6/17/1993	6	6.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-32	Soil Boring	SB_TTF-32_6-6.5_WC	6/17/1993	6	6.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-32	Soil Boring	SB_TTF-32_8-8.5	6/17/1993	8	8.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-32	Soil Boring	SB_TTF-32_8-8.5_WC	6/17/1993	8	8.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-33	Soil Boring	SB_TTF-33_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-33	Soil Boring	SB_TTF-33_2-2.5	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-33	Soil Boring	SB_TTF-33_2-2.5_WC	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-33	Soil Boring	SB_TTF-33_4-4.5	6/17/1993	4	4.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-33	Soil Boring	SB_TTF-33_4-4.5_WC	6/17/1993	4	4.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-34	Soil Boring	SB_TTF-34_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-35	Soil Boring	SB_TTF-35_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-36	Soil Boring	SB_TTF-36_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-37	Soil Boring	SB_TTF-37_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-38	Soil Boring	SB_TTF-38_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-39	Soil Boring	SB_TTF-39_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-4	Soil Boring	SB_TTF-4_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-4	Soil Boring	SB_TTF-4_2-2.5	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-4	Soil Boring	SB_TTF-4_2-2.5_WC	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-40	Soil Boring	SB_TTF-40_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-40	Soil Boring	SB_TTF-40_2-2.5	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	
SB_TTF-40	Soil Boring	SB_TTF-40_2-2.5_WC	6/17/1993	2	2.5	Primary Sample	In Place	GRC, Inc	Soil											X
SB_TTF-41	Soil Boring	SB_TTF-41_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-42	Soil Boring	SB_TTF-42_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-43	Soil Boring	SB_TTF-43_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-44	Soil Boring	SB_TTF-44_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-5	Soil Boring	SB_TTF-5_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-6	Soil Boring	SB_TTF-6_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-7	Soil Boring	SB_TTF-7_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-8	Soil Boring	SB_TTF-8_0-0.5	6/17/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X	X	X			X	X
SB_TTF-9	Soil Boring	SB_TTF-9_0-0.5	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil						X	X			X	X
SB_TTF-9	Soil Boring	SB_TTF-9_0-0.5_AT	6/16/1993	0	0.5	Primary Sample	In Place	GRC, Inc	Soil		X			X						
SB_TTFD-01	Soil Boring	SB_TTFD-1_0-0.5	4/14/2005	0	0.5	Calculated Sample	In Place	Haley & Aldrich	Soil	X										
SB_TTFD-01	Soil Boring	SB_TTFD-1_0-0.5	4/14/2005	0	0.5	Primary Sample	In Place	Haley & Aldrich	Soil	X										
SB_TTFD-02	Soil Boring	SB_TTFD-2_0-0.5	4/14/2005	0	0.5	Calculated Sample	In Place	Haley & Aldrich	Soil	X										
SB_TTFD-02	Soil Boring	SB_TTFD-2_0-0.5	4/14/2005	0	0.5	Primary Sample	In Place	Haley & Aldrich	Soil	X										
SB_TTFD-03	Soil Boring	SB_TTFD-3_0-0.5	4/14/2005	0	0.5	Calculated Sample	In Place	Haley & Aldrich	Soil	X										

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
SB_TTFD-03	Soil Boring	SB_TTFD-3_0-0.5	4/14/2005	0	0.5	Primary Sample	In Place	Haley & Aldrich	Soil	X										
SB_TTFD-04	Soil Boring	SB_TTFD-4_0-0.5	4/14/2005	0	0.5	Calculated Sample	In Place	Haley & Aldrich	Soil	X										
SB_TTFD-04	Soil Boring	SB_TTFD-4_0-0.5	4/14/2005	0	0.5	Primary Sample	In Place	Haley & Aldrich	Soil	X										
SWBS1007	Soil Boring	SWBS1007AS001	11/13/2008	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
SWBS1007	Soil Boring	SWBS1007AS001	11/13/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil						X				X	X
SWBS1007	Soil Boring	SWBS1007S001	10/23/2008	0	1	Calculated Sample	In Place	CH2M HILL	Soil	X										
SWBS1007	Soil Boring	SWBS1007S001	10/23/2008	0	1	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X		X	X
TR_TTF_0229-1	Trench	TR_TTF_0229-1	10/15/1981	1	1	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-10	Trench	TR_TTF_0229-10	10/16/1981	3	3	Primary Sample	In Place	Harding	Soil							X				
TR_TTF_0229-10	Trench	TR_TTF_0229-10_FD	10/16/1981	3	3	Field Duplicate	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-11	Trench	TR_TTF_0229-11	10/16/1981	1	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-12	Trench	TR_TTF_0229-12	10/16/1981	1	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-13	Trench	TR_TTF_0229-13	2/5/1982	2	2	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-14	Trench	TR_TTF_0229-14	2/5/1982	3	3	Primary Sample	In Place	Harding	Soil						X	X			X	
TR_TTF_0229-15	Trench	TR_TTF_0229-15	2/5/1982	2	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-17	Trench	TR_TTF_0229-17	2/5/1982	3	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-18	Trench	TR_TTF_0229-18	2/5/1982	2	2	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-19	Trench	TR_TTF_0229-19	2/5/1982	3	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-2	Trench	TR_TTF_0229-2	10/15/1981	3	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-20	Trench	TR_TTF_0229-20	2/5/1982	3	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-21	Trench	TR_TTF_0229-21	2/5/1982	2	2	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-3	Trench	TR_TTF_0229-3	10/15/1981	1	1	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-4	Trench	TR_TTF_0229-4	10/15/1981	3	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-5	Trench	TR_TTF_0229-5	10/15/1981	3	3	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-6	Trench	TR_TTF_0229-6	10/15/1981	1	1	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-7	Trench	TR_TTF_0229-7	10/15/1981	1	1	Primary Sample	In Place	Harding	Soil						X	X			X	X
TR_TTF_0229-9	Trench	TR_TTF_0229-9	10/15/1981	1	1	Primary Sample	In Place	Harding	Soil						X	X			X	X
TTBS08	Soil Boring	MJ600	12/22/2005	0	0.42	Calculated Sample	In Place	MWH	Soil	X										
TTBS08	Soil Boring	MJ600	12/22/2005	0	0.42	Primary Sample	In Place	MWH	Soil	X					X	X				
TTBS09	Surface Soil Sample	MJ601	12/22/2005	0	0.42	Calculated Sample	In Place	MWH	Soil	X										
TTBS09	Surface Soil Sample	MJ601	12/22/2005	0	0.42	Primary Sample	In Place	MWH	Soil	X					X	X				
TTBS10	Surface Soil Sample	MJ602	12/22/2005	0	0.42	Calculated Sample	In Place	MWH	Soil	X										
TTBS10	Surface Soil Sample	MJ602	12/22/2005	0	0.42	Primary Sample	In Place	MWH	Soil	X					X	X				
TTBS1000	Soil Boring	TTBS1000D001	12/19/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	
TTBS1000	Soil Boring	TTBS1000S001	12/19/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1000	Soil Boring	TTBS1000S001	12/19/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X		X		X	X	X	X	X	X	X
TTBS1000	Soil Boring	TTBS1000S002	12/19/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1000	Soil Boring	TTBS1000S002	12/19/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1000	Soil Boring	TTBS1000S003	12/19/2008	6	7	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1000	Soil Boring	TTBS1000S003	12/19/2008	6	7	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1001	Soil Boring	TTBS1001S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1001	Soil Boring	TTBS1001S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1001	Soil Boring	TTBS1001S002	1/5/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1001	Soil Boring	TTBS1001S002	1/5/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1002	Soil Boring	TTBS1002S001	11/13/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1002	Soil Boring	TTBS1002S001	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1002	Soil Boring	TTBS1002S002	11/13/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1002	Soil Boring	TTBS1002S002	11/13/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1002	Soil Boring	TTBS1002S003	11/13/2008	7.5	8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1002	Soil Boring	TTBS1002S003	11/13/2008	7.5	8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1003	Soil Boring	TTBS1003S001	12/23/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1003	Soil Boring	TTBS1003S001	12/23/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1003	Soil Boring	TTBS1003S002	12/23/2008	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1003	Soil Boring	TTBS1003S002	12/23/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1004	Soil Boring	TTBS1004S001	12/19/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1004	Soil Boring	TTBS1004S001	12/19/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X		X	X	X
TTBS1004	Soil Boring	TTBS1004S001SP	12/19/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTBS1004	Soil Boring	TTBS1004S002	12/19/2008	1	1.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1004	Soil Boring	TTBS1004S002	12/19/2008	1	1.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1005	Soil Boring	TTBS1005S001	11/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1005	Soil Boring	TTBS1005S001	11/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1005	Soil Boring	TTBS1005S002	11/12/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1005	Soil Boring	TTBS1005S002	11/12/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1006	Soil Boring	TTBS1006S001	11/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1006	Soil Boring	TTBS1006S001	11/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1006	Soil Boring	TTBS1006S002	11/11/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1006	Soil Boring	TTBS1006S002	11/11/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1007	Soil Boring	TTBS1007D002	12/23/2008	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1007	Soil Boring	TTBS1007D002	12/23/2008	2	2.5	Field Duplicate	In Place	CH2M HILL	Soil		X			X	X	X			X	X
TTBS1007	Soil Boring	TTBS1007S001	12/23/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1007	Soil Boring	TTBS1007S001	12/23/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1007	Soil Boring	TTBS1007S002	12/23/2008	2	2.5	Primary Sample	In Place	CH2M HILL	Soil			X			X	X	X		X	X
TTBS1008	Soil Boring	TTBS1008S001	11/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1008	Soil Boring	TTBS1008S001	11/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1008	Soil Boring	TTBS1008S002	11/12/2008	1.7	2.7	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1008	Soil Boring	TTBS1008S002	11/12/2008	1.7	2.7	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1009	Soil Boring	TTBS1009S001	11/13/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1009	Soil Boring	TTBS1009S001	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1009	Soil Boring	TTBS1009S002	11/13/2008	3.25	3.75	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1009	Soil Boring	TTBS1009S002	11/13/2008	3.25	3.75	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1010	Soil Boring	TTBS1010S001	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1010	Soil Boring	TTBS1010S001SP	12/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1010	Soil Boring	TTBS1010S001SP	12/11/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X			X	X	X		X	X	X
TTBS1010	Soil Boring	TTBS1010S002	12/11/2008	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1010	Soil Boring	TTBS1010S002	12/11/2008	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1011	Soil Boring	TTBS1011S001	11/14/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1011	Soil Boring	TTBS1011S001	11/14/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1011	Soil Boring	TTBS1011S002	11/14/2008	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1011	Soil Boring	TTBS1011S002	11/14/2008	1.5	2	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1012	Soil Boring	TTBS1012S001	11/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1012	Soil Boring	TTBS1012S001	11/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1012	Soil Boring	TTBS1012S002	11/12/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1012	Soil Boring	TTBS1012S002	11/12/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1012	Soil Boring	TTBS1012S003	11/12/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1012	Soil Boring	TTBS1012S003	11/12/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1013	Soil Boring	TTBS1013D001	11/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1013	Soil Boring	TTBS1013D001	11/11/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X				X	X	X			X	X
TTBS1013	Soil Boring	TTBS1013S001	11/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1013	Soil Boring	TTBS1013S002	11/11/2008	1.2	2.2	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1013	Soil Boring	TTBS1013S002	11/11/2008	1.2	2.2	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1014	Soil Boring	TTBS1014S001	11/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1014	Soil Boring	TTBS1014S001	11/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1014	Soil Boring	TTBS1014S002	11/12/2008	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1014	Soil Boring	TTBS1014S002	11/12/2008	2.5	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1015	Soil Boring	TTBS1015S001	11/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1015	Soil Boring	TTBS1015S001	11/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1015	Soil Boring	TTBS1015S002	11/12/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1015	Soil Boring	TTBS1015S002	11/12/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1016	Soil Boring	TTBS1016S001	11/13/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1016	Soil Boring	TTBS1016S001	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1016	Soil Boring	TTBS1016S002	11/13/2008	3.5	4.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1016	Soil Boring	TTBS1016S002SP	11/13/2008	3.5	4.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1016	Soil Boring	TTBS1016S002SP	11/13/2008	3.5	4.5	Split Sample	In Place	CH2M HILL	Soil	X	X				X	X		X	X	X
TTBS1017	Soil Boring	TTBS1017S001	11/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1017	Soil Boring	TTBS1017S001	11/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1017	Soil Boring	TTBS1017S002	11/12/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1017	Soil Boring	TTBS1017S002	11/12/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1017	Soil Boring	TTBS1017S003	11/12/2008	7.5	8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1017	Soil Boring	TTBS1017S003	11/12/2008	7.5	8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1018	Soil Boring	TTBS1018S001	11/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1018	Soil Boring	TTBS1018S001	11/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1018	Soil Boring	TTBS1018S002	11/12/2008	3.5	3.8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1018	Soil Boring	TTBS1018S002	11/12/2008	3.5	3.8	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1019	Soil Boring	TTBS1019S001	11/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1019	Soil Boring	TTBS1019S001	11/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1019	Soil Boring	TTBS1019S002	11/17/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1019	Soil Boring	TTBS1019S002	11/17/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1020	Soil Boring	TTBS1020S001	11/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1020	Soil Boring	TTBS1020S001	11/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1020	Soil Boring	TTBS1020S002	11/11/2008	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1020	Soil Boring	TTBS1020S002	11/11/2008	2.5	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1021	Soil Boring	TTBS1021D001	1/8/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X		X			X	X			X	X
TTBS1021	Soil Boring	TTBS1021S001	1/8/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1021	Soil Boring	TTBS1021S001	1/8/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTBS1021	Soil Boring	TTBS1021S002	1/8/2009	4.5	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1021	Soil Boring	TTBS1021S002	1/8/2009	4.5	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1021	Soil Boring	TTBS1021S003	1/8/2009	6.5	7	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1021	Soil Boring	TTBS1021S003	1/8/2009	6.5	7	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1022	Soil Boring	TTBS1022D002	1/6/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1022	Soil Boring	TTBS1022D002	1/6/2009	2	2.5	Field Duplicate	In Place	CH2M HILL	Soil	X					X	X			X	X
TTBS1022	Soil Boring	TTBS1022S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1022	Soil Boring	TTBS1022S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTBS1022	Soil Boring	TTBS1022S001SP	1/6/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X		X		X	X	X		X	X	X
TTBS1022	Soil Boring	TTBS1022S002	1/6/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1023	Soil Boring	TTBS1023S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1023	Soil Boring	TTBS1023S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1023	Soil Boring	TTBS1023S002	1/6/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1023	Soil Boring	TTBS1023S002	1/6/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1024	Soil Boring	TTBS1024S001	11/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1024	Soil Boring	TTBS1024S001	11/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1024	Soil Boring	TTBS1024S002	11/17/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1024	Soil Boring	TTBS1024S002	11/17/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1024	Soil Boring	TTBS1024S003	11/17/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1024	Soil Boring	TTBS1024S003	11/17/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1025	Soil Boring	TTBS1025S001	11/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1025	Soil Boring	TTBS1025S001	11/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1025	Soil Boring	TTBS1025S002	11/17/2008	4	4.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1025	Soil Boring	TTBS1025S002	11/17/2008	4	4.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1026	Soil Boring	TTBS1026S001	11/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1026	Soil Boring	TTBS1026S001	11/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1026	Soil Boring	TTBS1026S002	11/17/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1026	Soil Boring	TTBS1026S002	11/17/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1026	Soil Boring	TTBS1026S003	11/17/2008	7	7.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1026	Soil Boring	TTBS1026S003	11/17/2008	7	7.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1027	Soil Boring	TTBS1027D001	11/18/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X		X		X	X	X	X	X	X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1027	Soil Boring	TTBS1027D001SP	11/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1027	Soil Boring	TTBS1027D001SP	11/18/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X				X	X		X	X	X
TTBS1027	Soil Boring	TTBS1027S001	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X				X	X	X		X	X
TTBS1027	Soil Boring	TTBS1027S002	11/18/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1027	Soil Boring	TTBS1027S002	11/18/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1027	Soil Boring	TTBS1027S003	11/18/2008	7	8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1027	Soil Boring	TTBS1027S003	11/18/2008	7	8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1028	Soil Boring	TTBS1028S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X		X	X	X
TTBS1028	Soil Boring	TTBS1028S001SP	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1028	Soil Boring	TTBS1028S001SP	12/3/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X				X	X	X	X	X	X
TTBS1028	Soil Boring	TTBS1028S002	12/3/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1028	Soil Boring	TTBS1028S002	12/3/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1028	Soil Boring	TTBS1028S003	12/3/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1028	Soil Boring	TTBS1028S003	12/3/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1029	Soil Boring	TTBS1029S001	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1029	Soil Boring	TTBS1029S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1029	Soil Boring	TTBS1029S002	12/3/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1029	Soil Boring	TTBS1029S002	12/3/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1029	Soil Boring	TTBS1029S003	12/3/2008	7	8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1029	Soil Boring	TTBS1029S003	12/3/2008	7	8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1030	Soil Boring	TTBS1030S001	12/2/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1030	Soil Boring	TTBS1030S001	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1030	Soil Boring	TTBS1030S002	12/2/2008	2.4	3.4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1030	Soil Boring	TTBS1030S002	12/2/2008	2.4	3.4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1031	Soil Boring	TTBS1031D001	12/1/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1031	Soil Boring	TTBS1031D001	12/1/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X		X		X	X	X		X	X	X
TTBS1031	Soil Boring	TTBS1031S001	12/1/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X				X	X	X	X	X	X
TTBS1031	Soil Boring	TTBS1031S002	12/1/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1031	Soil Boring	TTBS1031S002	12/1/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1031	Soil Boring	TTBS1031S003	12/1/2008	10	11	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1031	Soil Boring	TTBS1031S003	12/1/2008	10	11	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1032	Soil Boring	TTBS1032S001	12/1/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1032	Soil Boring	TTBS1032S001	12/1/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1032	Soil Boring	TTBS1032S002	12/1/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1032	Soil Boring	TTBS1032S002	12/1/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1032	Soil Boring	TTBS1032S003	12/1/2008	10	11	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1032	Soil Boring	TTBS1032S003	12/1/2008	10	11	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1033	Soil Boring	TTBS1033S001	11/25/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1033	Soil Boring	TTBS1033S001	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1033	Soil Boring	TTBS1033S002	11/25/2008	2.1	3.1	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1033	Soil Boring	TTBS1033S002	11/25/2008	2.1	3.1	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1034	Soil Boring	TTBS1034S001	12/1/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X		X	X	X
TTBS1034	Soil Boring	TTBS1034S001SP	12/1/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1034	Soil Boring	TTBS1034S001SP	12/1/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTBS1034	Soil Boring	TTBS1034S002	12/1/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1034	Soil Boring	TTBS1034S002	12/1/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1034	Soil Boring	TTBS1034S003	12/1/2008	5.6	6.6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1034	Soil Boring	TTBS1034S003	12/1/2008	5.6	6.6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1035	Soil Boring	TTBS1035S001	11/25/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1035	Soil Boring	TTBS1035S001	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1035	Soil Boring	TTBS1035S002	11/25/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1035	Soil Boring	TTBS1035S002	11/25/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1035	Soil Boring	TTBS1035S003	11/25/2008	8.5	9.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1035	Soil Boring	TTBS1035S003	11/25/2008	8.5	9.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1036	Soil Boring	TTBS1036S001	11/25/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1036	Soil Boring	TTBS1036S001	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1036	Soil Boring	TTBS1036S002	11/25/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1036	Soil Boring	TTBS1036S002	11/25/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1036	Soil Boring	TTBS1036S003	11/25/2008	6.4	7.4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1036	Soil Boring	TTBS1036S003	11/25/2008	6.4	7.4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1037	Soil Boring	TTBS1037D002	11/24/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1037	Soil Boring	TTBS1037D002	11/24/2008	4	5	Field Duplicate	In Place	CH2M HILL	Soil	X				X	X	X		X	X	X
TTBS1037	Soil Boring	TTBS1037S001	11/24/2008	0	0	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1037	Soil Boring	TTBS1037S001	11/24/2008	0	0	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1037	Soil Boring	TTBS1037S002	11/24/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1037	Soil Boring	TTBS1037S003	11/24/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1037	Soil Boring	TTBS1037S003	11/24/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1038	Soil Boring	TTBS1038S001	11/24/2008	0	0	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1038	Soil Boring	TTBS1038S001	11/24/2008	0	0	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1038	Soil Boring	TTBS1038S002	11/24/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1038	Soil Boring	TTBS1038S002	11/24/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1038	Soil Boring	TTBS1038S003	11/24/2008	7	8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1038	Soil Boring	TTBS1038S003	11/24/2008	7	8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1039	Soil Boring	TTBS1039S001	11/24/2008	0	0	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1039	Soil Boring	TTBS1039S001	11/24/2008	0	0	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1039	Soil Boring	TTBS1039S002	11/24/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1039	Soil Boring	TTBS1039S002	11/24/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTBS1039	Soil Boring	TTBS1039S002SP	11/24/2008	4	5	Split Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1039	Soil Boring	TTBS1039S003	11/24/2008	5	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1039	Soil Boring	TTBS1039S003	11/24/2008	5	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1040	Soil Boring	TTBS1040S001	11/6/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1040	Soil Boring	TTBS1040S001	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1040	Soil Boring	TTBS1040S002	11/6/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1040	Soil Boring	TTBS1040S002	11/6/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1041	Soil Boring	TTBS1041S001	12/3/2008	0	0.25	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1041	Soil Boring	TTBS1041S001	12/3/2008	0	0.25	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1042	Soil Boring	TTBS1042S001	11/25/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1042	Soil Boring	TTBS1042S001	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1043	Soil Boring	TTBS1043S001	11/25/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1043	Soil Boring	TTBS1043S001	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1043	Soil Boring	TTBS1043S002	11/25/2008	3	4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1043	Soil Boring	TTBS1043S002	11/25/2008	3	4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1044	Soil Boring	TTBS1044D001	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1044	Soil Boring	TTBS1044D001	12/3/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X		X		X	X	X			X	X
TTBS1044	Soil Boring	TTBS1044S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTBS1045	Soil Boring	TTBS1045S001	11/7/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1045	Soil Boring	TTBS1045S001	11/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1045	Soil Boring	TTBS1045S002	11/7/2008	3	4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1045	Soil Boring	TTBS1045S002	11/7/2008	3	4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X		X	X	X
TTBS1045	Soil Boring	TTBS1045S002SP	11/7/2008	3	4	Split Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTBS1045	Soil Boring	TTBS1045S003	11/7/2008	11.5	12	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1045	Soil Boring	TTBS1045S003	11/7/2008	11.5	12	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1046	Soil Boring	TTBS1046S001	11/13/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1046	Soil Boring	TTBS1046S001	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1046	Soil Boring	TTBS1046S002	11/13/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1046	Soil Boring	TTBS1046S002	11/13/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1046	Soil Boring	TTBS1046S003	11/13/2008	14	15	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1046	Soil Boring	TTBS1046S003	11/13/2008	14	15	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1047	Soil Boring	TTBS1047S001	1/7/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1047	Soil Boring	TTBS1047S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1047	Soil Boring	TTBS1047S002	1/7/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1047	Soil Boring	TTBS1047S002	1/7/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1047	Soil Boring	TTBS1047S003	1/7/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1047	Soil Boring	TTBS1047S003	1/7/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1048	Soil Boring	TTBS1048S001	12/2/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1048	Soil Boring	TTBS1048S001	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1048	Soil Boring	TTBS1048S002	12/2/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1048	Soil Boring	TTBS1048S002	12/2/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1048	Soil Boring	TTBS1048S003	12/2/2008	7.5	8.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1048	Soil Boring	TTBS1048S003	12/2/2008	7.5	8.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1049	Soil Boring	TTBS1049S001	1/8/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1049	Soil Boring	TTBS1049S001	1/8/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1049	Soil Boring	TTBS1049S002	1/8/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1049	Soil Boring	TTBS1049S002	1/8/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1050	Soil Boring	TTBS1050D001	11/18/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X		X		X	X	X	X	X	X	X
TTBS1050	Soil Boring	TTBS1050S001	11/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1050	Soil Boring	TTBS1050S001	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X				X	X			X	X
TTBS1050	Soil Boring	TTBS1050S002	11/18/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1050	Soil Boring	TTBS1050S002	11/18/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1050	Soil Boring	TTBS1050S003	11/18/2008	11	12	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1050	Soil Boring	TTBS1050S003	11/18/2008	11	12	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1051	Soil Boring	TTBS1051S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X		X	X	X
TTBS1051	Soil Boring	TTBS1051S001SP	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1051	Soil Boring	TTBS1051S001SP	12/3/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X				X	X	X	X	X	X
TTBS1051	Soil Boring	TTBS1051S002	12/3/2008	4.5	5.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1051	Soil Boring	TTBS1051S002	12/3/2008	4.5	5.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1052	Soil Boring	TTBS1052S001	12/1/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1052	Soil Boring	TTBS1052S001	12/1/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1052	Soil Boring	TTBS1052S002	12/1/2008	3	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1052	Soil Boring	TTBS1052S002	12/1/2008	3	3.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1053	Soil Boring	TTBS1053S001	12/2/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1053	Soil Boring	TTBS1053S001	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1053	Soil Boring	TTBS1053S002	12/2/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1053	Soil Boring	TTBS1053S002	12/2/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1054	Soil Boring	TTBS1054S001	12/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1054	Soil Boring	TTBS1054S001	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1054	Soil Boring	TTBS1054S002	12/4/2008	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1054	Soil Boring	TTBS1054S002	12/4/2008	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1055	Soil Boring	TTBS1055S001	11/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1055	Soil Boring	TTBS1055S001	11/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1056	Soil Boring	TTBS1056S001	10/29/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1056	Soil Boring	TTBS1056S001	10/29/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1056	Soil Boring	TTBS1056S002	10/29/2008	3.25	3.75	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1056	Soil Boring	TTBS1056S002	10/29/2008	3.25	3.75	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1057	Soil Boring	TTBS1057AS001	10/30/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X				X	
TTBS1057	Soil Boring	TTBS1057AS002	10/30/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil						X				X	
TTBS1057	Soil Boring	TTBS1057AS003	10/30/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil						X				X	
TTBS1057	Soil Boring	TTBS1057S001	10/29/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1057	Soil Boring	TTBS1057S001	10/29/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1057	Soil Boring	TTBS1057S002	10/29/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1057	Soil Boring	TTBS1057S002	10/29/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1057	Soil Boring	TTBS1057S003	10/29/2008	9	10	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1057	Soil Boring	TTBS1057S003	10/29/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1058	Soil Boring	TTBS1058S001	10/29/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X			X	X
TTBS1058	Soil Boring	TTBS1058S001SP	10/29/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1058	Soil Boring	TTBS1058S001SP	10/29/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X			X	X	X	X		X	X
TTBS1058	Soil Boring	TTBS1058S002	10/29/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1058	Soil Boring	TTBS1058S002	10/29/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1059	Soil Boring	TTBS1059S001	12/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1059	Soil Boring	TTBS1059S001	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1059	Soil Boring	TTBS1059S002	12/4/2008	2.3	2.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1059	Soil Boring	TTBS1059S002	12/4/2008	2.3	2.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1060	Soil Boring	TTBS1060D002	12/3/2008	1.5	2	Field Duplicate	In Place	CH2M HILL	Soil		X				X	X		X	X	X
TTBS1060	Soil Boring	TTBS1060S001	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1060	Soil Boring	TTBS1060S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1060	Soil Boring	TTBS1060S002	12/3/2008	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1060	Soil Boring	TTBS1060S002	12/3/2008	1.5	2	Primary Sample	In Place	CH2M HILL	Soil	X		X		X	X	X	X	X	X	X
TTBS1061	Soil Boring	TTBS1061S001	12/2/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1061	Soil Boring	TTBS1061S001	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1061	Soil Boring	TTBS1061S002	12/2/2008	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1061	Soil Boring	TTBS1061S002	12/2/2008	1.5	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1062	Soil Boring	TTBS1062S001	11/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1062	Soil Boring	TTBS1062S001	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1062	Soil Boring	TTBS1062S002	11/18/2008	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1062	Soil Boring	TTBS1062S002	11/18/2008	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1063	Soil Boring	TTBS1063S001	12/1/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1063	Soil Boring	TTBS1063S001	12/1/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1063	Soil Boring	TTBS1063S002	12/1/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1063	Soil Boring	TTBS1063S002	12/1/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1064	Soil Boring	TTBS1064S001	12/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1064	Soil Boring	TTBS1064S001	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1064	Soil Boring	TTBS1064S002	12/4/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1064	Soil Boring	TTBS1064S002	12/4/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X	X		X	X
TTBS1064	Soil Boring	TTBS1064S002SP	12/4/2008	2	3	Split Sample	In Place	CH2M HILL	Soil		X				X	X	X		X	X
TTBS1065	Soil Boring	TTBS1065S001	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1065	Soil Boring	TTBS1065S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1066	Soil Boring	TTBS1066D001	12/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1066	Soil Boring	TTBS1066D001	12/17/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1066	Soil Boring	TTBS1066S001	12/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X			X	X
TTBS1067	Soil Boring	TTBS1067S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1067	Soil Boring	TTBS1067S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1068	Soil Boring	TTBS1068S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1068	Soil Boring	TTBS1068S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1068	Soil Boring	TTBS1068S002	12/16/2008	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1068	Soil Boring	TTBS1068S002	12/16/2008	1.5	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1069	Soil Boring	TTBS1069S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1069	Soil Boring	TTBS1069S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1069	Soil Boring	TTBS1069S002	12/16/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1069	Soil Boring	TTBS1069S002	12/16/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1069	Soil Boring	TTBS1069S003	12/16/2008	6	6.8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1069	Soil Boring	TTBS1069S003	12/16/2008	6	6.8	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1070	Soil Boring	TTBS1070S001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1070	Soil Boring	TTBS1070S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1070	Soil Boring	TTBS1070S002	1/15/2009	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1070	Soil Boring	TTBS1070S002	1/15/2009	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1071	Soil Boring	TTBS1071S001	12/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1071	Soil Boring	TTBS1071S001	12/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1071	Soil Boring	TTBS1071S002	12/17/2008	0.8	1.8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1071	Soil Boring	TTBS1071S002	12/17/2008	0.8	1.8	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1072	Soil Boring	TTBS1072S001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1072	Soil Boring	TTBS1072S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1072	Soil Boring	TTBS1072S002	1/15/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1072	Soil Boring	TTBS1072S002	1/15/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1072	Soil Boring	TTBS1072S003	1/15/2009	9.5	10.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1072	Soil Boring	TTBS1072S003	1/15/2009	9.5	10.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1073	Soil Boring	TTBS1073S001	11/14/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1073	Soil Boring	TTBS1073S001	11/14/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1073	Soil Boring	TTBS1073S002	11/14/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1073	Soil Boring	TTBS1073S002	11/14/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1073	Soil Boring	TTBS1073S003	11/14/2008	10.25	11.25	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1073	Soil Boring	TTBS1073S003	11/14/2008	10.25	11.25	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1074	Soil Boring	TTBS1074S001	11/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1074	Soil Boring	TTBS1074S001	11/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1074	Soil Boring	TTBS1074S002	11/10/2008	0.6	1.3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1074	Soil Boring	TTBS1074S002	11/10/2008	0.6	1.3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1075	Soil Boring	TTBS1075D003	11/17/2008	10	11	Field Duplicate	In Place	CH2M HILL	Soil	X		X		X	X	X	X	X	X	X
TTBS1075	Soil Boring	TTBS1075S001	11/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1075	Soil Boring	TTBS1075S001	11/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1075	Soil Boring	TTBS1075S002	11/17/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1075	Soil Boring	TTBS1075S002	11/17/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1075	Soil Boring	TTBS1075S003	11/17/2008	10	11	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1075	Soil Boring	TTBS1075S003	11/17/2008	10	11	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X		X	X	X
TTBS1076	Soil Boring	TTBS1076S001	11/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1076	Soil Boring	TTBS1076S001	11/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1076	Soil Boring	TTBS1076S002	11/17/2008	3	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1076	Soil Boring	TTBS1076S002	11/17/2008	3	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1077	Soil Boring	TTBS1077S001	11/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1077	Soil Boring	TTBS1077S001	11/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1077	Soil Boring	TTBS1077S002	11/17/2008	1.75	2.75	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1077	Soil Boring	TTBS1077S002	11/17/2008	1.75	2.75	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1078	Soil Boring	TTBS1078S001	11/13/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1078	Soil Boring	TTBS1078S001	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1078	Soil Boring	TTBS1078S002	11/13/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1078	Soil Boring	TTBS1078S002	11/13/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1079	Soil Boring	TTBS1079S001	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X	X		X	X
TTBS1079	Soil Boring	TTBS1079S001SP	11/13/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1079	Soil Boring	TTBS1079S001SP	11/13/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X				X	X			X	X
TTBS1079	Soil Boring	TTBS1079S002	11/13/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1079	Soil Boring	TTBS1079S002	11/13/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1080	Soil Boring	TTBS1080S001	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1080	Soil Boring	TTBS1080S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1080	Soil Boring	TTBS1080S002	12/3/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1080	Soil Boring	TTBS1080S002	12/3/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1080	Soil Boring	TTBS1080S003	12/3/2008	9.83	10.83	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1080	Soil Boring	TTBS1080S003	12/3/2008	9.83	10.83	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1081	Soil Boring	TTBS1081S001	11/5/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1081	Soil Boring	TTBS1081S001	11/5/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1081	Soil Boring	TTBS1081S002	11/5/2008	2.8	3.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1081	Soil Boring	TTBS1081S002	11/5/2008	2.8	3.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1082	Soil Boring	TTBS1082S001	11/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1082	Soil Boring	TTBS1082S001	11/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1082	Soil Boring	TTBS1082S002	11/10/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1082	Soil Boring	TTBS1082S002	11/10/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1083	Soil Boring	TTBS1083D001	11/6/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1083	Soil Boring	TTBS1083D001	11/6/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil						X	X	X		X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1083	Soil Boring	TTBS1083S001	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1083	Soil Boring	TTBS1083S002	11/6/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1083	Soil Boring	TTBS1083S002	11/6/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1084	Soil Boring	TTBS1084S001	11/5/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1084	Soil Boring	TTBS1084S001	11/5/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1084	Soil Boring	TTBS1084S002	11/5/2008	3.5	4.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1084	Soil Boring	TTBS1084S002	11/5/2008	3.5	4.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1085	Soil Boring	TTBS1085S001	11/6/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1085	Soil Boring	TTBS1085S001	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1085	Soil Boring	TTBS1085S002	11/6/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1085	Soil Boring	TTBS1085S002	11/6/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1085	Soil Boring	TTBS1085S003	11/6/2008	6	7	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1085	Soil Boring	TTBS1085S003	11/6/2008	6	7	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1086	Soil Boring	TTBS1086S001	11/24/2008	0	0	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1086	Soil Boring	TTBS1086S001	11/24/2008	0	0	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1086	Soil Boring	TTBS1086S001SP	11/24/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1086	Soil Boring	TTBS1086S001SP	11/24/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1086	Soil Boring	TTBS1086S002	11/24/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1086	Soil Boring	TTBS1086S002	11/24/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1087	Soil Boring	TTBS1087S001	11/24/2008	0	0	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1087	Soil Boring	TTBS1087S001	11/24/2008	0	0	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1087	Soil Boring	TTBS1087S002	11/24/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1087	Soil Boring	TTBS1087S002	11/24/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1088	Soil Boring	TTBS1088S001	11/24/2008	0	0	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1088	Soil Boring	TTBS1088S001	11/24/2008	0	0	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1088	Soil Boring	TTBS1088S002	11/24/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1088	Soil Boring	TTBS1088S002	11/24/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1089	Soil Boring	TTBS1089S001	12/8/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1089	Soil Boring	TTBS1089S001	12/8/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1089	Soil Boring	TTBS1089S002	12/8/2008	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1089	Soil Boring	TTBS1089S002	12/8/2008	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1090	Soil Boring	TTBS1090S001	11/5/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1090	Soil Boring	TTBS1090S001	11/5/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1090	Soil Boring	TTBS1090S002	11/5/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1090	Soil Boring	TTBS1090S002	11/5/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1090	Soil Boring	TTBS1090S003	11/5/2008	9.5	10.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1090	Soil Boring	TTBS1090S003	11/5/2008	9.5	10.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1091	Soil Boring	TTBS1091S001	10/31/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1091	Soil Boring	TTBS1091S001	10/31/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1091	Soil Boring	TTBS1091S002	10/31/2008	4.8	5.3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1091	Soil Boring	TTBS1091S002	10/31/2008	4.8	5.3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1092	Soil Boring	TTBS1092S001	11/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1092	Soil Boring	TTBS1092S001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1092	Soil Boring	TTBS1092S002	11/4/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1092	Soil Boring	TTBS1092S002	11/4/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1092	Soil Boring	TTBS1092S002SP	11/4/2008	4	5	Split Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1092	Soil Boring	TTBS1092S003	11/4/2008	6.3	7.3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1092	Soil Boring	TTBS1092S003	11/4/2008	6.3	7.3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1093	Soil Boring	TTBS1093D001	10/31/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1093	Soil Boring	TTBS1093D001	10/31/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil			X		X	X	X	X		X	X
TTBS1093	Soil Boring	TTBS1093S001	10/31/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X				X	X			X	X
TTBS1093	Soil Boring	TTBS1093S002	10/31/2008	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1093	Soil Boring	TTBS1093S002	10/31/2008	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1094	Soil Boring	TTBS1094S001	11/7/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1094	Soil Boring	TTBS1094S001	11/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1094	Soil Boring	TTBS1094S002	11/7/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1094	Soil Boring	TTBS1094S002	11/7/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1095	Soil Boring	TTBS1095S001	11/7/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1095	Soil Boring	TTBS1095S001	11/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1095	Soil Boring	TTBS1095S002	11/7/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1095	Soil Boring	TTBS1095S002	11/7/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1095	Soil Boring	TTBS1095S003	11/7/2008	12	13	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1095	Soil Boring	TTBS1095S003	11/7/2008	12	13	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1095	Soil Boring	TTBS1095S004	11/7/2008	7.5	8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1095	Soil Boring	TTBS1095S004	11/7/2008	7.5	8	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1096	Soil Boring	TTBS1096S001	11/6/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1096	Soil Boring	TTBS1096S001	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1096	Soil Boring	TTBS1096S002	11/6/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1096	Soil Boring	TTBS1096S002	11/6/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1097	Soil Boring	TTBS1097S001	11/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1097	Soil Boring	TTBS1097S001	11/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1097	Soil Boring	TTBS1097S002	11/10/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1097	Soil Boring	TTBS1097S002	11/10/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1097	Soil Boring	TTBS1097S003	11/10/2008	8	9	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1097	Soil Boring	TTBS1097S003	11/10/2008	8	9	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1098	Soil Boring	TTBS1098S001	10/30/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X	X	X	X
TTBS1098	Soil Boring	TTBS1098S001SP	10/30/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1098	Soil Boring	TTBS1098S001SP	10/30/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X				X	X	X		X	X
TTBS1098	Soil Boring	TTBS1098S002	10/30/2008	3.3	3.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1098	Soil Boring	TTBS1098S002	10/30/2008	3.3	3.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1099	Soil Boring	TTBS1099S001	11/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1099	Soil Boring	TTBS1099S001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1099	Soil Boring	TTBS1099S002	11/4/2008	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1099	Soil Boring	TTBS1099S002	11/4/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS11	Surface Soil Sample	MJ603	12/22/2005	0	0.42	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS11	Surface Soil Sample	MJ603	12/22/2005	0	0.42	Primary Sample	In Place	CH2M HILL	Soil	X					X	X				
TTBS1100	Soil Boring	TTBS1100S001	11/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1100	Soil Boring	TTBS1100S001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1100	Soil Boring	TTBS1100S001SP	11/4/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X	X		X	X	X			X	X
TTBS1100	Soil Boring	TTBS1100S002	11/4/2008	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1100	Soil Boring	TTBS1100S002	11/4/2008	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1101	Soil Boring	TTBS1101AS001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1101	Soil Boring	TTBS1101S001	11/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1101	Soil Boring	TTBS1101S001	11/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1102	Soil Boring	TTBS1102AS001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1102	Soil Boring	TTBS1102AS002	11/4/2008	4	4.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1102	Soil Boring	TTBS1102S001	11/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1102	Soil Boring	TTBS1102S001	11/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1102	Soil Boring	TTBS1102S002	11/3/2008	4	4.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1102	Soil Boring	TTBS1102S002	11/3/2008	4	4.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1103	Soil Boring	TTBS1103D002	11/4/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1103	Soil Boring	TTBS1103D002	11/4/2008	4	5	Field Duplicate	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1103	Soil Boring	TTBS1103S001	11/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1103	Soil Boring	TTBS1103S001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1103	Soil Boring	TTBS1103S002	11/4/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1103	Soil Boring	TTBS1103S003	11/4/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1103	Soil Boring	TTBS1103S003	11/4/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1104	Soil Boring	TTBS1104AS001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1104	Soil Boring	TTBS1104S001	11/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1104	Soil Boring	TTBS1104S001	11/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1105	Soil Boring	TTBS1105S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1105	Soil Boring	TTBS1105S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1105	Soil Boring	TTBS1105S002	1/6/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1105	Soil Boring	TTBS1105S002	1/6/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1105	Soil Boring	TTBS1105S003	1/6/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1105	Soil Boring	TTBS1105S003	1/6/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1106	Soil Boring	TTBS1106S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1106	Soil Boring	TTBS1106S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1106	Soil Boring	TTBS1106S002	1/6/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1106	Soil Boring	TTBS1106S002	1/6/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1106	Soil Boring	TTBS1106S003	1/6/2009	14	15	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1106	Soil Boring	TTBS1106S003	1/6/2009	14	15	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1107	Soil Boring	TTBS1107S001	1/8/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1107	Soil Boring	TTBS1107S001	1/8/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1107	Soil Boring	TTBS1107S002	1/8/2009	4.5	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1107	Soil Boring	TTBS1107S002	1/8/2009	4.5	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1108	Soil Boring	TTBS1108S001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1108	Soil Boring	TTBS1108S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1108	Soil Boring	TTBS1108S002	1/15/2009	0.8	1.3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1108	Soil Boring	TTBS1108S002	1/15/2009	0.8	1.3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1109	Soil Boring	TTBS1109D002	12/5/2008	4.5	5.3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1109	Soil Boring	TTBS1109D002	12/5/2008	4.5	5.3	Field Duplicate	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1109	Soil Boring	TTBS1109S001	12/5/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1109	Soil Boring	TTBS1109S001	12/5/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1109	Soil Boring	TTBS1109S002	12/5/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1109	Soil Boring	TTBS1109S002	12/5/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1109	Soil Boring	TTBS1109S003	12/5/2008	6.5	7	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1109	Soil Boring	TTBS1109S003	12/5/2008	6.5	7	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1110	Soil Boring	TTBS1110S001	11/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1110	Soil Boring	TTBS1110S001	11/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1110	Soil Boring	TTBS1110S002	11/10/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1110	Soil Boring	TTBS1110S002	11/10/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1110	Soil Boring	TTBS1110S003	11/10/2008	6.2	7.2	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1110	Soil Boring	TTBS1110S003	11/10/2008	6.2	7.2	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1111	Soil Boring	TTBS1111S001	2/9/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1111	Soil Boring	TTBS1111S001	2/9/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1111	Soil Boring	TTBS1111S002	2/9/2009	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1111	Soil Boring	TTBS1111S002	2/9/2009	1.5	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1112	Soil Boring	TTBS1112S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1112	Soil Boring	TTBS1112S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1112	Soil Boring	TTBS1112S002	1/5/2009	2.25	2.75	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1112	Soil Boring	TTBS1112S002	1/5/2009	2.25	2.75	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1113	Soil Boring	TTBS1113S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1113	Soil Boring	TTBS1113S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1113	Soil Boring	TTBS1113S002	1/5/2009	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1113	Soil Boring	TTBS1113S002	1/5/2009	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1116	Soil Boring	TTBS1116S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1116	Soil Boring	TTBS1116S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1116	Soil Boring	TTBS1116S002	1/6/2009	1.5	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1116	Soil Boring	TTBS1116S002	1/6/2009	1.5	2.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1117	Soil Boring	TTBS1117D001	1/6/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X					X	X	X		X	X
TTBS1117	Soil Boring	TTBS1117S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1117	Soil Boring	TTBS1117S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X		X	X	X
TTBS1117	Soil Boring	TTBS1117S002	1/6/2009	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1117	Soil Boring	TTBS1117S002	1/6/2009	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1118	Soil Boring	TTBS1118S001	1/16/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1118	Soil Boring	TTBS1118S001	1/16/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1118	Soil Boring	TTBS1118S002	1/16/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1118	Soil Boring	TTBS1118S002	1/16/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1118	Soil Boring	TTBS1118S003	1/16/2009	14.4	15.4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1118	Soil Boring	TTBS1118S003	1/16/2009	14.4	15.4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1119	Soil Boring	TTBS1119S001	12/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1119	Soil Boring	TTBS1119S001	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1119	Soil Boring	TTBS1119S002	12/18/2008	0.8	1.8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1119	Soil Boring	TTBS1119S002	12/18/2008	0.8	1.8	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1120	Soil Boring	TTBS1120S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X			X	X
TTBS1120	Soil Boring	TTBS1120S001SP	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1120	Soil Boring	TTBS1120S001SP	12/10/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X				X	X	X		X	X
TTBS1120	Soil Boring	TTBS1120S002	12/10/2008	1	1.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1120	Soil Boring	TTBS1120S002	12/10/2008	1	1.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1121	Soil Boring	TTBS1121S001	12/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1121	Soil Boring	TTBS1121S001	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1121	Soil Boring	TTBS1121S002	12/18/2008	0.5	1.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1121	Soil Boring	TTBS1121S002	12/18/2008	0.5	1.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1122	Soil Boring	TTBS1122S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1122	Soil Boring	TTBS1122S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1122	Soil Boring	TTBS1122S002	12/16/2008	0.5	1.2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1122	Soil Boring	TTBS1122S002	12/16/2008	0.5	1.2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1123	Soil Boring	TTBS1123S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1123	Soil Boring	TTBS1123S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1123	Soil Boring	TTBS1123S002	12/16/2008	0.5	1.4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1123	Soil Boring	TTBS1123S002	12/16/2008	0.5	1.4	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1123	Soil Boring	TTBS1123S002SP	12/16/2008	0.5	1.4	Split Sample	In Place	CH2M HILL	Soil		X	X			X	X			X	X
TTBS1124	Soil Boring	TTBS1124D002	12/19/2008	4	5	Field Duplicate	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1124	Soil Boring	TTBS1124S001	12/19/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1124	Soil Boring	TTBS1124S001	12/19/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1124	Soil Boring	TTBS1124S002	12/19/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1124	Soil Boring	TTBS1124S002	12/19/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X			X	X
TTBS1124	Soil Boring	TTBS1124S003	12/19/2008	7.5	8.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1124	Soil Boring	TTBS1124S003	12/19/2008	7.5	8.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1125	Soil Boring	TTBS1125S001	1/21/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1125	Soil Boring	TTBS1125S001	1/21/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1126	Soil Boring	TTBS1126S001	1/9/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1126	Soil Boring	TTBS1126S001	1/9/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1126	Soil Boring	TTBS1126S002	1/9/2009	3	4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1126	Soil Boring	TTBS1126S002	1/9/2009	3	4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1127	Soil Boring	TTBS1127S001	2/10/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1127	Soil Boring	TTBS1127S001	2/10/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1127	Soil Boring	TTBS1127S002	2/10/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1127	Soil Boring	TTBS1127S002	2/10/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1128	Soil Boring	TTBS1128S001	1/9/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1128	Soil Boring	TTBS1128S001	1/9/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1128	Soil Boring	TTBS1128S002	1/9/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1128	Soil Boring	TTBS1128S002	1/9/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1128	Soil Boring	TTBS1128S003	1/9/2009	9.3	10.3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1128	Soil Boring	TTBS1128S003	1/9/2009	9.3	10.3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1129	Soil Boring	TTBS1129S001	1/9/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X	X		X	X
TTBS1129	Soil Boring	TTBS1129S001SP	1/9/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1129	Soil Boring	TTBS1129S001SP	1/9/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X			X	X	X	X		X	X
TTBS1129	Soil Boring	TTBS1129S002	1/9/2009	3	4	Calculated Sample	In Place	CH2M HILL	Soil											X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1129	Soil Boring	TTBS1129S002	1/9/2009	3	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1130	Soil Boring	TTBS1130D001	2/10/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X				X	X	X	X		X	X
TTBS1130	Soil Boring	TTBS1130S001	2/10/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1130	Soil Boring	TTBS1130S001	2/10/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1130	Soil Boring	TTBS1130S002	2/10/2009	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1130	Soil Boring	TTBS1130S002	2/10/2009	1.5	2	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1131	Soil Boring	TTBS1131S001	2/11/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1131	Soil Boring	TTBS1131S001	2/11/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1132	Soil Boring	TTBS1132S001	1/14/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1132	Soil Boring	TTBS1132S001	1/14/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1132	Soil Boring	TTBS1132S002	1/14/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1132	Soil Boring	TTBS1132S002	1/14/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1132	Soil Boring	TTBS1132S003	1/14/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1132	Soil Boring	TTBS1132S003	1/14/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1133	Soil Boring	TTBS1133S001	12/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1133	Soil Boring	TTBS1133S001	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1133	Soil Boring	TTBS1133S002	12/18/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1133	Soil Boring	TTBS1133S002	12/18/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1134	Soil Boring	TTBS1134S001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1134	Soil Boring	TTBS1134S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1134	Soil Boring	TTBS1134S002	1/15/2009	1	1.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1134	Soil Boring	TTBS1134S002	1/15/2009	1	1.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1135	Soil Boring	TTBS1135S001	12/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1135	Soil Boring	TTBS1135S001	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1135	Soil Boring	TTBS1135S002	12/18/2008	1.2	2.2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1135	Soil Boring	TTBS1135S002	12/18/2008	1.2	2.2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1136	Soil Boring	TTBS1136S001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1136	Soil Boring	TTBS1136S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1136	Soil Boring	TTBS1136S002	1/15/2009	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1136	Soil Boring	TTBS1136S002	1/15/2009	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1137	Soil Boring	TTBS1137D001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1137	Soil Boring	TTBS1137D001	1/15/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil					X	X	X			X	X
TTBS1137	Soil Boring	TTBS1137S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1137	Soil Boring	TTBS1137S002	1/15/2009	1	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1137	Soil Boring	TTBS1137S002	1/15/2009	1	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1138	Soil Boring	TTBS1138S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1138	Soil Boring	TTBS1138S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X			X	X
TTBS1138	Soil Boring	TTBS1138S001SP	1/5/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X				X	X	X		X	X
TTBS1138	Soil Boring	TTBS1138S002	1/5/2009	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1138	Soil Boring	TTBS1138S002	1/5/2009	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1139	Soil Boring	TTBS1139S001	12/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1139	Soil Boring	TTBS1139S001	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1139	Soil Boring	TTBS1139S002	12/11/2008	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1139	Soil Boring	TTBS1139S002	12/11/2008	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1140	Soil Boring	TTBS1140S001	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1140	Soil Boring	TTBS1140S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1140	Soil Boring	TTBS1140S002	12/10/2008	4	4.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1140	Soil Boring	TTBS1140S002	12/10/2008	4	4.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1141	Soil Boring	TTBS1141S001	12/8/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1141	Soil Boring	TTBS1141S001	12/8/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1141	Soil Boring	TTBS1141S002	12/8/2008	2.8	3.8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1141	Soil Boring	TTBS1141S002	12/8/2008	2.8	3.8	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1142	Soil Boring	TTBS1142D001	12/8/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil			X		X	X	X				X
TTBS1142	Soil Boring	TTBS1142S001	12/8/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1142	Soil Boring	TTBS1142S001	12/8/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X	X		X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1142	Soil Boring	TTBS1142S002	12/8/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1142	Soil Boring	TTBS1142S002	12/8/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1142	Soil Boring	TTBS1142S003	12/8/2008	7.2	8.2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1142	Soil Boring	TTBS1142S003	12/8/2008	7.2	8.2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1143	Soil Boring	TTBS1143S001	1/8/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1143	Soil Boring	TTBS1143S001	1/8/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1143	Soil Boring	TTBS1143S002	1/8/2009	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1143	Soil Boring	TTBS1143S002	1/8/2009	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1144	Soil Boring	TTBS1144S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1144	Soil Boring	TTBS1144S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1144	Soil Boring	TTBS1144S002	1/6/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X	X		X	X
TTBS1144	Soil Boring	TTBS1144S002SP	1/6/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1144	Soil Boring	TTBS1144S002SP	1/6/2009	4	5	Split Sample	In Place	CH2M HILL	Soil		X				X	X			X	X
TTBS1145	Soil Boring	TTBS1145S001	12/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1145	Soil Boring	TTBS1145S001	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1146	Soil Boring	TTBS1146S001	12/2/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1146	Soil Boring	TTBS1146S001	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1146	Soil Boring	TTBS1146S002	12/2/2008	4	4.9	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1146	Soil Boring	TTBS1146S002	12/2/2008	4	4.9	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1147	Soil Boring	TTBS1147S001	12/2/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1147	Soil Boring	TTBS1147S001	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1147	Soil Boring	TTBS1147S002	12/2/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1147	Soil Boring	TTBS1147S002	12/2/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1147	Soil Boring	TTBS1147S003	12/2/2008	9	10	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1147	Soil Boring	TTBS1147S003	12/2/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1148	Soil Boring	TTBS1148D001	12/2/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X				X	X	X	X			
TTBS1148	Soil Boring	TTBS1148S001	12/2/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1148	Soil Boring	TTBS1148S001	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1148	Soil Boring	TTBS1148S002	12/2/2008	4.5	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1148	Soil Boring	TTBS1148S002	12/2/2008	4.5	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1148	Soil Boring	TTBS1148S003	12/2/2008	17.5	17.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1148	Soil Boring	TTBS1148S003	12/2/2008	17.5	17.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1149	Soil Boring	TTBS1149S001	11/25/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1149	Soil Boring	TTBS1149S001	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1149	Soil Boring	TTBS1149S002	11/25/2008	1.75	2.75	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1149	Soil Boring	TTBS1149S002	11/25/2008	1.75	2.75	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1150	Soil Boring	TTBS1150S001	11/24/2008	0	0	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1150	Soil Boring	TTBS1150S001	11/24/2008	0	0	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1150	Soil Boring	TTBS1150S001SP	11/24/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1150	Soil Boring	TTBS1150S001SP	11/24/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1150	Soil Boring	TTBS1150S002	11/24/2008	1	2	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1150	Soil Boring	TTBS1150S002	11/24/2008	1	2	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1151	Soil Boring	TTBS1151S001	12/8/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1151	Soil Boring	TTBS1151S001	12/8/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1151	Soil Boring	TTBS1151S002	12/8/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1151	Soil Boring	TTBS1151S002	12/8/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1152	Soil Boring	TTBS1152AS001	12/5/2008	0	1	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1152	Soil Boring	TTBS1152AS002	12/5/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1152	Soil Boring	TTBS1152BS001	12/8/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1152	Soil Boring	TTBS1152BS002	12/8/2008	1	1.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1152	Soil Boring	TTBS1152S001	12/3/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1152	Soil Boring	TTBS1152S001	12/3/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1152	Soil Boring	TTBS1152S002	12/3/2008	1	1.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1152	Soil Boring	TTBS1152S002	12/3/2008	1	1.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1153	Soil Boring	TTBS1153S001	11/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1153	Soil Boring	TTBS1153S001	11/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1154	Soil Boring	TTBS1154S001	11/5/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1154	Soil Boring	TTBS1154S001	11/5/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1154	Soil Boring	TTBS1154S002	11/5/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1154	Soil Boring	TTBS1154S002	11/5/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1155	Soil Boring	TTBS1155D001	12/5/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil			X		X	X	X				
TTBS1155	Soil Boring	TTBS1155S001	12/5/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1155	Soil Boring	TTBS1155S001	12/5/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X	X		X	X
TTBS1155	Soil Boring	TTBS1155S002	12/5/2008	3.25	4.25	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1155	Soil Boring	TTBS1155S002	12/5/2008	3.25	4.25	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1156	Soil Boring	TTBS1156S001	1/9/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X			X	X
TTBS1156	Soil Boring	TTBS1156S001SP	1/9/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1156	Soil Boring	TTBS1156S001SP	1/9/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1156	Soil Boring	TTBS1156S002	1/9/2009	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1156	Soil Boring	TTBS1156S002	1/9/2009	1.5	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1157	Soil Boring	TTBS1157S001	2/10/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1157	Soil Boring	TTBS1157S001	2/10/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1157	Soil Boring	TTBS1157S002	2/10/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1157	Soil Boring	TTBS1157S002	2/10/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1157	Soil Boring	TTBS1157S003	2/10/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1157	Soil Boring	TTBS1157S003	2/10/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1158	Soil Boring	TTBS1158S001	12/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1158	Soil Boring	TTBS1158S001	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1158	Soil Boring	TTBS1158S002	12/18/2008	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1158	Soil Boring	TTBS1158S002	12/18/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1159	Soil Boring	TTBS1159S001	12/17/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1159	Soil Boring	TTBS1159S001	12/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1159	Soil Boring	TTBS1159S002	12/17/2008	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1159	Soil Boring	TTBS1159S002	12/17/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1160	Soil Boring	TTBS1160S001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1160	Soil Boring	TTBS1160S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1160	Soil Boring	TTBS1160S002	1/15/2009	1	1.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1160	Soil Boring	TTBS1160S002	1/15/2009	1	1.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1161	Soil Boring	TTBS1161D001	1/14/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil			X		X	X	X	X			
TTBS1161	Soil Boring	TTBS1161S001	1/14/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1161	Soil Boring	TTBS1161S001	1/14/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X			X	X
TTBS1161	Soil Boring	TTBS1161S002	1/14/2009	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1161	Soil Boring	TTBS1161S002	1/14/2009	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1162	Soil Boring	TTBS1162S001	12/19/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1162	Soil Boring	TTBS1162S001	12/19/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1162	Soil Boring	TTBS1162S002	12/19/2008	1.8	2.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1162	Soil Boring	TTBS1162S002	12/19/2008	1.8	2.8	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X		X	X	X
TTBS1162	Soil Boring	TTBS1162S002SP	12/19/2008	1.8	2.8	Split Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1163	Soil Boring	TTBS1163S001	1/15/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1163	Soil Boring	TTBS1163S001	1/15/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1164	Soil Boring	TTBS1164S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1164	Soil Boring	TTBS1164S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1164	Soil Boring	TTBS1164S002	12/16/2008	0.5	1.4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1164	Soil Boring	TTBS1164S002	12/16/2008	0.5	1.4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1166	Soil Boring	TTBS1166D001	1/5/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil			X		X	X	X			X	X
TTBS1166	Soil Boring	TTBS1166S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1166	Soil Boring	TTBS1166S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X	X		X	X
TTBS1166	Soil Boring	TTBS1166S002	1/5/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1166	Soil Boring	TTBS1166S002	1/5/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1166	Soil Boring	TTBS1166S003	1/5/2009	6.5	7	Calculated Sample	In Place	CH2M HILL	Soil											X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1166	Soil Boring	TTBS1166S003	1/5/2009	6.5	7	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1167	Soil Boring	TTBS1167S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1167	Soil Boring	TTBS1167S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X			X	X
TTBS1167	Soil Boring	TTBS1167S001SP	1/5/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X				X	X	X		X	X
TTBS1167	Soil Boring	TTBS1167S002	1/5/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1167	Soil Boring	TTBS1167S002	1/5/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1168	Soil Boring	TTBS1168S001	1/8/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1168	Soil Boring	TTBS1168S001	1/8/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1168	Soil Boring	TTBS1168S002	1/8/2009	1.75	2.75	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1168	Soil Boring	TTBS1168S002	1/8/2009	1.75	2.75	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1169	Soil Boring	TTBS1169S001	1/8/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1169	Soil Boring	TTBS1169S001	1/8/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1169	Soil Boring	TTBS1169S002	1/8/2009	1	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1169	Soil Boring	TTBS1169S002	1/8/2009	1	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1170	Soil Boring	TTBS1170S001	12/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1170	Soil Boring	TTBS1170S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1171	Soil Boring	TTBS1171S001	12/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1171	Soil Boring	TTBS1171S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1172	Soil Boring	TTBS1172D001	12/12/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X					X	X			X	X
TTBS1172	Soil Boring	TTBS1172S001	12/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1172	Soil Boring	TTBS1172S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1172	Soil Boring	TTBS1172S002	12/12/2008	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1172	Soil Boring	TTBS1172S002	12/12/2008	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1173	Soil Boring	TTBS1173S001	1/14/2009	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1173	Soil Boring	TTBS1173S001	1/14/2009	0.5	1	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1173	Soil Boring	TTBS1173S001SP	1/14/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1173	Soil Boring	TTBS1173S001SP	1/14/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1174	Soil Boring	TTBS1174S001	1/14/2009	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1174	Soil Boring	TTBS1174S001	1/14/2009	0.5	1	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1175	Soil Boring	TTBS1175S001	1/14/2009	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1175	Soil Boring	TTBS1175S001	1/14/2009	0.5	1	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1176	Soil Boring	TTBS1176S001	2/10/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1176	Soil Boring	TTBS1176S001	2/10/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1177	Soil Boring	TTBS1177S001	12/9/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1177	Soil Boring	TTBS1177S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1177	Soil Boring	TTBS1177S002	12/9/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1177	Soil Boring	TTBS1177S002	12/9/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1178	Soil Boring	TTBS1178S001	12/9/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1178	Soil Boring	TTBS1178S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1178	Soil Boring	TTBS1178S002	12/9/2008	4	4.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1178	Soil Boring	TTBS1178S002	12/9/2008	4	4.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1179	Soil Boring	TTBS1179S001	11/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1179	Soil Boring	TTBS1179S001	11/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1179	Soil Boring	TTBS1179S002	11/4/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1179	Soil Boring	TTBS1179S002	11/4/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1179	Soil Boring	TTBS1179S003	11/4/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1179	Soil Boring	TTBS1179S003	11/4/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1180	Soil Boring	TTBS1180S001	12/1/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1180	Soil Boring	TTBS1180S001	12/1/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1180	Soil Boring	TTBS1180S002	12/1/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1180	Soil Boring	TTBS1180S002	12/1/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1180A	Soil Boring	TTBS1180S003	12/2/2008	14.3	15.3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1180A	Soil Boring	TTBS1180S003	12/2/2008	14.3	15.3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1181	Soil Boring	TTBS1181S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1181	Soil Boring	TTBS1181S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1181	Soil Boring	TTBS1181S002	1/5/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1181	Soil Boring	TTBS1181S002	1/5/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1182	Soil Boring	TTBS1182S001	1/7/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1182	Soil Boring	TTBS1182S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1182	Soil Boring	TTBS1182S002	1/7/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1182	Soil Boring	TTBS1182S002	1/7/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1183	Soil Boring	TTBS1183S001	12/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1183	Soil Boring	TTBS1183S001	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1183	Soil Boring	TTBS1183S002	12/4/2008	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1183	Soil Boring	TTBS1183S002	12/4/2008	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1184	Soil Boring	TTBS1184S001	12/4/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1184	Soil Boring	TTBS1184S001	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1184	Soil Boring	TTBS1184S002	12/4/2008	3	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1184	Soil Boring	TTBS1184S002	12/4/2008	3	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1185	Soil Boring	TTBS1185S001	1/7/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1185	Soil Boring	TTBS1185S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1185	Soil Boring	TTBS1185S002	1/7/2009	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1185	Soil Boring	TTBS1185S002	1/7/2009	0.5	1	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1186	Soil Boring	TTBS1186D001	1/7/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1186	Soil Boring	TTBS1186D001	1/7/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil		X				X	X			X	X
TTBS1186	Soil Boring	TTBS1186S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X	X			X
TTBS1186	Soil Boring	TTBS1186S002	1/7/2009	0.5	1.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1186	Soil Boring	TTBS1186S002	1/7/2009	0.5	1.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1188	Soil Boring	TTBS1188D001	1/16/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil						X	X	X		X	X
TTBS1188	Soil Boring	TTBS1188S001	1/16/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1188	Soil Boring	TTBS1188S001	1/16/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1188	Soil Boring	TTBS1188S002	1/16/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1188	Soil Boring	TTBS1188S002	1/16/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1188	Soil Boring	TTBS1188S003	1/16/2009	5.6	6.6	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1188	Soil Boring	TTBS1188S003	1/16/2009	5.6	6.6	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1189	Soil Boring	TTBS1189S001	1/16/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1189	Soil Boring	TTBS1189S001	1/16/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1191	Soil Boring	TTBS1191S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1191	Soil Boring	TTBS1191S002	12/12/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1192	Soil Boring	TTBS1192S001	1/14/2009	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1192	Soil Boring	TTBS1192S001	1/14/2009	0.5	1	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1193	Soil Boring	TTBS1193S001	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1193	Soil Boring	TTBS1193S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1193	Soil Boring	TTBS1193S002	12/10/2008	1.3	2.3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1193	Soil Boring	TTBS1193S002	12/10/2008	1.3	2.3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1194	Soil Boring	TTBS1194S001	12/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1194	Soil Boring	TTBS1194S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X			X	X
TTBS1194	Soil Boring	TTBS1194S001SP	12/12/2008	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X	X			X	X	X		X	X
TTBS1194	Soil Boring	TTBS1194S002	12/12/2008	0.5	1.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1194	Soil Boring	TTBS1194S002	12/12/2008	0.5	1.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1195	Soil Boring	TTBS1195S001	12/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1195	Soil Boring	TTBS1195S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1196	Soil Boring	TTBS1196D001	12/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1196	Soil Boring	TTBS1196D001	12/12/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil			X		X	X	X	X		X	X
TTBS1196	Soil Boring	TTBS1196S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X			X	X
TTBS1196	Soil Boring	TTBS1196S002	12/12/2008	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1196	Soil Boring	TTBS1196S002	12/12/2008	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1198	Soil Boring	TTBS1198S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1198	Soil Boring	TTBS1198S002	12/12/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1199	Soil Boring	TTBS1199S001	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1199	Soil Boring	TTBS1199S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1199	Soil Boring	TTBS1199S002	12/10/2008	0.67	1.17	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1199	Soil Boring	TTBS1199S002	12/10/2008	0.67	1.17	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1200	Soil Boring	TTBS1200S001	2/10/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1200	Soil Boring	TTBS1200S001	2/10/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1200	Soil Boring	TTBS1200S002	2/10/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1200	Soil Boring	TTBS1200S002	2/10/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1200	Soil Boring	TTBS1200S002SP	2/10/2009	4	5	Split Sample	In Place	CH2M HILL	Soil		X	X			X	X			X	X
TTBS1201	Soil Boring	TTBS1201S001	12/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1201	Soil Boring	TTBS1201S001	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X	X	X	X
TTBS1201	Soil Boring	TTBS1201S002	12/11/2008	1.2	1.7	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1201	Soil Boring	TTBS1201S002	12/11/2008	1.2	1.7	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1202	Soil Boring	TTBS1202S001	12/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1202	Soil Boring	TTBS1202S001	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X	X	X	X
TTBS1202	Soil Boring	TTBS1202S002	12/11/2008	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1202	Soil Boring	TTBS1202S002	12/11/2008	1.5	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1203	Soil Boring	TTBS1203D002	12/11/2008	0.8	1.3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1203	Soil Boring	TTBS1203D002	12/11/2008	0.8	1.3	Field Duplicate	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1203	Soil Boring	TTBS1203S001	12/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1203	Soil Boring	TTBS1203S001	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1203	Soil Boring	TTBS1203S002	12/11/2008	0.8	1.3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X			X	X
TTBS1204	Soil Boring	TTBS1204S001	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1204	Soil Boring	TTBS1204S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1204	Soil Boring	TTBS1204S002	12/10/2008	0.5	1	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1205	Soil Boring	TTBS1205S001	12/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1205	Soil Boring	TTBS1205S001	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTBS1206	Soil Boring	TTBS1206S001	12/5/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1206	Soil Boring	TTBS1206S001	12/5/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1206	Soil Boring	TTBS1206S002	12/5/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1206	Soil Boring	TTBS1206S002	12/5/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1207	Soil Boring	TTBS1207S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1207	Soil Boring	TTBS1207S002	1/7/2009	3.5	4	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1208	Soil Boring	TTBS1208S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1208	Soil Boring	TTBS1208S002	1/7/2009	1	1.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1209	Soil Boring	TTBS1209S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1210	Soil Boring	TTBS1210S001	1/14/2009	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1210	Soil Boring	TTBS1210S001	1/14/2009	0.5	1	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1210	Soil Boring	TTBS1210S002	1/14/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTBS1210	Soil Boring	TTBS1210S002	1/14/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTBS1212	Soil Boring	TTBS1212S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1212	Soil Boring	TTBS1212S002	1/7/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1213	Soil Boring	TTBS1213S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1216	Soil Boring	TTBS1216S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1217	Soil Boring	TTBS1217S001	12/23/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1218	Soil Boring	TTBS1218S001	12/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1219	Soil Boring	TTBS1219S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1220	Soil Boring	TTBS1220S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1221	Soil Boring	TTBS1221S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1222	Soil Boring	TTBS1222S001	12/23/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1223	Soil Boring	TTBS1223AS001	12/17/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1223	Soil Boring	TTBS1223S001	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1224	Soil Boring	TTBS1224S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1225	Soil Boring	TTBS1225S001	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1246	Soil Boring	TTBS1246S001	1/14/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1247	Soil Boring	TTBS1247S001	1/19/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS1247	Soil Boring	TTBS1247S001	1/19/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X		X		X	X		X	X	X
TTBS1248	Soil Boring	TTBS1248S001	1/19/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1248	Soil Boring	TTBS1248S001	1/19/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil		X		X		X	X		X	X	X
TTBS1249	Soil Boring	TTBS1249S001	1/19/2009	7.5	8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1249	Soil Boring	TTBS1249S001	1/19/2009	7.5	8	Primary Sample	In Place	CH2M HILL	Soil		X		X		X	X		X	X	X
TTBS1250	Soil Boring	TTBS1250S001	1/19/2009	7.5	8	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1250	Soil Boring	TTBS1250S001	1/19/2009	7.5	8	Primary Sample	In Place	CH2M HILL	Soil		X		X		X	X		X	X	X
TTBS1251	Soil Boring	TTBS1251S001	2/27/2009	0	1	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1251	Soil Boring	TTBS1251S002	2/27/2009	3	3.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1252	Soil Boring	TTBS1252S001	2/27/2009	0	1	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1252	Soil Boring	TTBS1252S002	2/27/2009	3	3.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1253	Soil Boring	TTBS1253S001	2/25/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1253	Soil Boring	TTBS1253S002	2/25/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1254	Soil Boring	TTBS1254S001	2/25/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1254	Soil Boring	TTBS1254S002	2/25/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1255	Soil Boring	TTBS1255D001	2/23/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1255	Soil Boring	TTBS1255D001	2/23/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1255	Soil Boring	TTBS1255S001	2/23/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X				
TTBS1255	Soil Boring	TTBS1255S002	2/23/2009	3	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1255	Soil Boring	TTBS1255S002	2/23/2009	3	4	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1256	Soil Boring	TTBS1256S001	2/24/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1256	Soil Boring	TTBS1256S002	2/24/2009	3	4	Primary Sample	In Place	CH2M HILL	Soil					X	X					
TTBS1257	Trench	TTBS1257S001	2/24/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X			
TTBS1258	Soil Boring	TTBS1258S001	2/23/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1258	Soil Boring	TTBS1258S001SP	2/23/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1258	Soil Boring	TTBS1258S001SP	2/23/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil					X		X	X			X
TTBS1258	Soil Boring	TTBS1258S002	2/23/2009	4.5	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1258	Soil Boring	TTBS1258S002	2/23/2009	4.5	5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTBS1259	Soil Boring	TTBS1259D001	2/24/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil						X	X				
TTBS1259	Soil Boring	TTBS1259S001	2/24/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X		X	X		X	
TTBS1259	Soil Boring	TTBS1259S002	2/24/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	
TTBS1260	Soil Boring	TTBS1260S001	2/24/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1260	Soil Boring	TTBS1260S002	2/24/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1260	Soil Boring	TTBS1260S003	2/24/2009	12	13	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1261	Soil Boring	TTBS1261S001	2/25/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X		X				
TTBS1261	Soil Boring	TTBS1261S001SP	2/25/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1261	Soil Boring	TTBS1261S002	2/25/2009	1.5	2	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1262	Soil Boring	TTBS1262S001	2/25/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1262	Soil Boring	TTBS1262S002	2/25/2009	1	1.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1263	Soil Boring	TTBS1263S001	2/25/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X				
TTBS1269	Soil Boring	TTBS1269S001	2/23/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1269	Soil Boring	TTBS1269S001	2/23/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X	X	X		X	X
TTBS1269	Soil Boring	TTBS1269S002	2/23/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS1269	Soil Boring	TTBS1269S002	2/23/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil						X	X	X		X	X
TTBS13	Surface Soil Sample	MJ605	12/22/2005	0	0.42	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS13	Surface Soil Sample	MJ605	12/22/2005	0	0.42	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS13	Surface Soil Sample	MJ606	12/22/2005	0	0.42	Field Duplicate	In Place	CH2M HILL	Soil	X					X	X				
TTBS15	Soil Boring	WA500	2/21/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS17	Soil Boring	WA505	2/23/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS17	Soil Boring	WA505	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS18	Soil Boring	WA508	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS19	Soil Boring	WA510	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS20	Soil Boring	WA512	2/23/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS20	Soil Boring	WA512	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS22	Soil Boring	WA516	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS23	Soil Boring	WA518	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS24	Soil Boring	WA520	2/23/2006	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS24	Soil Boring	WA520	2/23/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil	X						X			X	
TTBS26	Soil Boring	WA524	2/23/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS26	Soil Boring	WA524	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS27	Soil Boring	WA527	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS28	Soil Boring	WA529	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS29	Soil Boring	WA531	2/24/2006	0.5	1	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS29	Soil Boring	WA531	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS30	Soil Boring	WA533	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS31	Soil Boring	WA535	2/24/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS31	Soil Boring	WA535	2/24/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS32	Soil Boring	WA536	2/24/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS32	Soil Boring	WA536	2/24/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X									X	
TTBS33	Soil Boring	WA537	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS35	Soil Boring	WA558	3/21/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS35	Soil Boring	WA558	3/21/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS36	Soil Boring	WA560	3/21/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS36	Soil Boring	WA560	3/21/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS42	Soil Boring	WA569	3/29/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS43	Soil Boring	WA570	5/25/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS43	Soil Boring	WA570	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X				X		X			X	
TTBS43	Soil Boring	WA572	5/25/2006	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS43	Soil Boring	WA572	5/25/2006	2.5	3	Primary Sample	In Place	CH2M HILL	Soil	X				X		X			X	
TTBS44	Soil Boring	WA574	5/25/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS44	Soil Boring	WA574	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X				X		X			X	
TTBS44	Soil Boring	WA576	5/25/2006	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS44	Soil Boring	WA576	5/25/2006	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X				X		X			X	
TTBS44	Soil Boring	WA578	5/25/2006	5.5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS44	Soil Boring	WA578	5/25/2006	5.5	6	Primary Sample	In Place	CH2M HILL	Soil	X				X		X			X	
TTBS45	Soil Boring	WA580	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS45	Soil Boring	WA582	5/25/2006	4	4.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS45	Soil Boring	WA585	5/25/2006	2	2.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS46	Soil Boring	WA584	5/25/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS47	Soil Boring	WA587	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS48	Soil Boring	WA589	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS49	Soil Boring	WA591	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X					X	X				
TTBS49	Soil Boring	WB591	5/25/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS49	Soil Boring	WB591	5/25/2006	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X						X				
TTBS52	Soil Boring	WA597	5/26/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS52	Soil Boring	WA597	5/26/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS53	Soil Boring	WA599	5/26/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS53	Soil Boring	WA599	5/26/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS54	Soil Boring	WA601	5/26/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS54	Soil Boring	WA601	5/26/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS57	Soil Boring	WA609	5/26/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS57	Soil Boring	WA611	5/26/2006	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil							X				
TTBS57	Soil Boring	WB609	5/26/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS57	Soil Boring	WB609	5/26/2006	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X						X				
TTBS62	Soil Boring	WA617	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS62	Soil Boring	WA617	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS63	Soil Boring	WA619	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS63	Soil Boring	WA619	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS63	Soil Boring	WA684	6/13/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS63	Soil Boring	WA684	6/13/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil										X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTBS65	Soil Boring	WA625	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS65	Soil Boring	WA625	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS65	Soil Boring	WA685	6/13/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS65	Soil Boring	WA685	6/13/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil										X	X
TTBS66	Soil Boring	WA627	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS66	Soil Boring	WA627	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS67	Soil Boring	WA629	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS67	Soil Boring	WA629	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS67	Soil Boring	WA631	5/30/2006	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X						X				
TTBS68	Soil Boring	WA632	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS68	Soil Boring	WA632	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS68	Soil Boring	WA634	5/30/2006	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS68	Soil Boring	WA634	5/30/2006	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS68	Soil Boring	WA687	6/13/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS68	Soil Boring	WA687	6/13/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil										X	X
TTBS68	Soil Boring	WA688	6/13/2006	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS68	Soil Boring	WA688	6/13/2006	2	2.5	Primary Sample	In Place	CH2M HILL	Soil										X	X
TTBS69	Soil Boring	WA636	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS69	Soil Boring	WA636	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS69	Soil Boring	WA686	6/13/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS69	Soil Boring	WA686	6/13/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil										X	X
TTBS70	Soil Boring	WA638	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS70	Soil Boring	WA638	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS70	Soil Boring	WA640	5/30/2006	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS70	Soil Boring	WA640	5/30/2006	1.5	2	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS70	Soil Boring	WA642	5/30/2006	3	3.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS70	Soil Boring	WA642	5/30/2006	3	3.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS71	Soil Boring	WA644	5/30/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS71	Soil Boring	WA644	5/30/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X						X				
TTBS71	Soil Boring	WA689	6/15/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS71	Soil Boring	WA689	6/15/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil										X	X
TTBS73	Soil Boring	WA650	5/31/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS73	Soil Boring	WA650	5/31/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS74	Soil Boring	WA652	5/31/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS74	Soil Boring	WA652	5/31/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS74	Soil Boring	WA654	5/31/2006	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X										
TTBS74	Soil Boring	WA656	5/31/2006	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS74	Soil Boring	WA656	5/31/2006	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS76	Soil Boring	WA660	5/31/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS76	Soil Boring	WA660	5/31/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS77	Soil Boring	WA662	5/31/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS77	Soil Boring	WA662	5/31/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS77	Soil Boring	WA664	5/31/2006	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS77	Soil Boring	WA664	5/31/2006	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS78	Soil Boring	WA666	5/31/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS78	Soil Boring	WA666	5/31/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS79	Soil Boring	WA668	5/31/2006	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS79	Soil Boring	WA668	5/31/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS79	Soil Boring	WA670	5/31/2006	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTBS79	Soil Boring	WA670	5/31/2006	3.5	4	Primary Sample	In Place	CH2M HILL	Soil	X										
TTBS80	Soil Boring	WA672	5/31/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil							X				
TTBS85	Soil Boring	WA680	6/2/2006	3	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS85	Soil Boring	WA680	6/2/2006	3	3.5	Primary Sample	In Place	CH2M HILL	Soil										X	X
TTBS86	Soil Boring	WA683	6/2/2006	3	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTBS86	Soil Boring	WA683	6/2/2006	3	3.5	Primary Sample	In Place	CH2M HILL	Soil										X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTLE01	Surface Soil Sample	WA540	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLE02	Surface Soil Sample	WA542	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS01	Surface Soil Sample	MJ191	3/5/2003	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS02	Surface Soil Sample	MJ192	3/5/2003	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS03	Surface Soil Sample	MJ193	3/5/2003	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS04	Surface Soil Sample	MJ194	3/5/2003	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS05	Surface Soil Sample	SSFL-W-147K	3/5/2003	0	0.5	Split Sample	In Place	CH2M HILL	Soil						X					
TTLS06	Surface Soil Sample	MJ196	3/5/2003	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS07	Surface Soil Sample	MJ197	3/5/2003	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS15	Soil Boring	WA555	2/21/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS17	Soil Boring	WA506	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS19	Soil Boring	WA511	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS20	Soil Boring	WA513	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS22	Soil Boring	WA517	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS23	Soil Boring	WA519	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS24	Soil Boring	WA521	2/23/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS26	Soil Boring	WA525	2/23/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS27	Soil Boring	WA528	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS28	Soil Boring	WA530	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS29	Soil Boring	WA532	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS30	Soil Boring	WA534	2/24/2006	0.5	1	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS43	Soil Boring	WA571	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS43	Soil Boring	WA573	5/25/2006	2.5	3	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS44	Soil Boring	WA575	5/25/2006	0	0.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS44	Soil Boring	WA577	5/25/2006	2	2.5	Primary Sample	In Place	CH2M HILL	Soil						X					
TTLS44	Soil Boring	WA579	5/25/2006	5.5	6	Primary Sample	In Place	CH2M HILL	Soil						X					
TTSS01	Surface Soil Sample	WA539	2/24/2006	0	0.05	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTSS01	Surface Soil Sample	WA539	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil	X							X			
TTSS02	Surface Soil Sample	WA541	2/24/2006	0	0.05	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTSS02	Surface Soil Sample	WA541	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil	X							X			
TTSS03	Surface Soil Sample	WA543	2/24/2006	0	0.05	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTSS03	Surface Soil Sample	WA543	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil	X							X			
TTSS04	Surface Soil Sample	WA545	2/24/2006	0	0.05	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTSS04	Surface Soil Sample	WA545	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil	X							X			
TTSS05	Surface Soil Sample	WA547	2/24/2006	0	0.05	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTSS05	Surface Soil Sample	WA547	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil	X							X			
TTSS06	Surface Soil Sample	WA549	2/24/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil	X										
TTSS06	Surface Soil Sample	WA551	2/24/2006	0	0.05	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTSS06	Surface Soil Sample	WA551	2/24/2006	0	0.05	Field Duplicate	In Place	CH2M HILL	Soil	X							X			
TTSS07	Surface Soil Sample	WA553	2/27/2006	0	0.05	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTSS07	Surface Soil Sample	WA553	2/27/2006	0	0.05	Primary Sample	In Place	CH2M HILL	Soil	X							X			
TTTS1000	Trench	TTTS1000S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1000	Trench	TTTS1000S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1000	Trench	TTTS1000S002	12/16/2008	2.75	3.75	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1000	Trench	TTTS1000S002	12/16/2008	2.75	3.75	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1001	Trench	TTTS1001S001	12/16/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1001	Trench	TTTS1001S001	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1001	Trench	TTTS1001S002	12/16/2008	4.8	5.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1001	Trench	TTTS1001S002	12/16/2008	4.8	5.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1002	Trench	TTTS1002S001	1/20/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1002	Trench	TTTS1002S001	1/20/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1002	Trench	TTTS1002S002	1/20/2009	4	4.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1002	Trench	TTTS1002S002	1/20/2009	4	4.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1003	Trench	TTTS1003S001	1/20/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1003	Trench	TTTS1003S001	1/20/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTTS1003	Trench	TTTS1003S002	1/20/2009	4.5	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1003	Trench	TTTS1003S002	1/20/2009	4.5	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1004	Trench	TTTS1004AS001	12/10/2008	3	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1004	Trench	TTTS1004AS001	12/10/2008	3	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1004	Trench	TTTS1004S001	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1004	Trench	TTTS1004S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1004	Trench	TTTS1004S002	12/10/2008	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1004	Trench	TTTS1004S002	12/10/2008	2.5	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1005	Trench	TTTS1005S001	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1005	Trench	TTTS1005S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1005	Trench	TTTS1005S002	12/10/2008	5.8	6.8	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1005	Trench	TTTS1005S002	12/10/2008	5.8	6.8	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1006	Trench	TTTS1006S001	12/12/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1006	Trench	TTTS1006S001	12/12/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1006	Trench	TTTS1006S002	12/12/2008	8.2	9.2	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1006	Trench	TTTS1006S002	12/12/2008	8.2	9.2	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1007	Trench	TTTS1007S001	12/10/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										
TTTS1007	Trench	TTTS1007S001	12/10/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1007	Trench	TTTS1007S001A	12/11/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1007	Trench	TTTS1007S001A	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X					X	X
TTTS1007	Trench	TTTS1007S002	12/12/2008	6.5	7.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1007	Trench	TTTS1007S002	12/12/2008	6.5	7.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1008	Trench	TTTS1008D001	2/26/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X				X	X	X		X	X	X
TTTS1008	Trench	TTTS1008S001	2/26/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1008	Trench	TTTS1008S001	2/26/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1008	Trench	TTTS1008S002	2/26/2009	12.5	13.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1008	Trench	TTTS1008S002	2/26/2009	12.5	13.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1009	Trench	TTTS1009S001	2/26/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1009	Trench	TTTS1009S001	2/26/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1009	Trench	TTTS1009S002	2/26/2009	11	12	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1009	Trench	TTTS1009S002	2/26/2009	11	12	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1010	Trench	TTTS1010S001	12/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1010	Trench	TTTS1010S001	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1010	Trench	TTTS1010S002	12/19/2008	15	15.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1010	Trench	TTTS1010S002	12/19/2008	15	15.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1011	Trench	TTTS1011D001	12/18/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil	X	X	X			X	X	X			X
TTTS1011	Trench	TTTS1011S001	12/18/2008	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1011	Trench	TTTS1011S001	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTTS1011	Trench	TTTS1011S002	12/18/2008	19	19.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1011	Trench	TTTS1011S002	12/18/2008	19	19.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1012	Trench	TTTS1012S001	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1012	Trench	TTTS1012S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1012	Trench	TTTS1012S002	1/6/2009	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1012	Trench	TTTS1012S002	1/6/2009	3.5	4	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1013	Trench	TTTS1013S001	1/6/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X	X	X	X	X
TTTS1013	Trench	TTTS1013S001SP	1/6/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1013	Trench	TTTS1013S001SP	1/6/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X		X			X	X	X	X	X	X
TTTS1013	Trench	TTTS1013S002	1/6/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1013	Trench	TTTS1013S002	1/6/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1014	Trench	TTTS1014S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1014	Trench	TTTS1014S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1014	Trench	TTTS1014S002	1/5/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1014	Trench	TTTS1014S002	1/5/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1015	Trench	TTTS1015S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1015	Trench	TTTS1015S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTTS1015	Trench	TTTS1015S002	1/5/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1015	Trench	TTTS1015S002	1/5/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1016	Trench	TTTS1016S001	1/5/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1016	Trench	TTTS1016S001	1/5/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1016	Trench	TTTS1016S002	1/5/2009	5.5	6	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1016	Trench	TTTS1016S002	1/5/2009	5.5	6	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1017	Trench	TTTS1017S001	2/3/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTTS1017	Trench	TTTS1017S001SP	2/3/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1017	Trench	TTTS1017S001SP	2/3/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1017	Trench	TTTS1017S002	2/3/2009	8.5	9	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1017	Trench	TTTS1017S002	2/3/2009	8.5	9	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1018	Trench	TTTS1018S001	2/3/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1018	Trench	TTTS1018S001	2/3/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1018	Trench	TTTS1018S002	2/3/2009	10	10.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1018	Trench	TTTS1018S002	2/3/2009	10	10.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1019	Trench	TTTS1019D001	2/3/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1019	Trench	TTTS1019S001	2/3/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1019	Trench	TTTS1019S001	2/3/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTTS1019	Trench	TTTS1019S002	2/3/2009	3	3.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1019	Trench	TTTS1019S002	2/3/2009	3	3.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1020	Trench	TTTS1020S001	2/3/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1020	Trench	TTTS1020S001	2/3/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1020	Trench	TTTS1020S002	2/3/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1020	Trench	TTTS1020S002	2/3/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1021	Trench	TTTS1021S001	2/2/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1021	Trench	TTTS1021S001	2/2/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1021	Trench	TTTS1021S002	2/2/2009	4.5	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1021	Trench	TTTS1021S002	2/2/2009	4.5	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1022	Trench	TTTS1022S001	2/2/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1022	Trench	TTTS1022S001	2/2/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1022	Trench	TTTS1022S002	2/2/2009	5.5	6	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1022	Trench	TTTS1022S002	2/2/2009	5.5	6	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1023	Trench	TTTS1023S001	2/4/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1023	Trench	TTTS1023S001	2/4/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1023	Trench	TTTS1023S002	2/4/2009	6.5	7	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1023	Trench	TTTS1023S002	2/4/2009	6.5	7	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1024	Trench	TTTS1024S001	2/4/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1024	Trench	TTTS1024S001	2/4/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1024	Trench	TTTS1024S002	2/4/2009	7	7.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1024	Trench	TTTS1024S002	2/4/2009	7	7.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1025	Trench	TTTS1025S001	2/4/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1025	Trench	TTTS1025S001	2/4/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1025	Trench	TTTS1025S002	2/4/2009	5.5	6	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1025	Trench	TTTS1025S002	2/4/2009	5.5	6	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1026	Trench	TTTS1026S001	2/4/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil			X		X	X	X			X	X
TTTS1026	Trench	TTTS1026S001SP	2/4/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1026	Trench	TTTS1026S001SP	2/4/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil		X				X	X	X		X	X
TTTS1026	Trench	TTTS1026S002	2/4/2009	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1026	Trench	TTTS1026S002	2/4/2009	1.5	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1027	Trench	TTTS1027S001	2/2/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1027	Trench	TTTS1027S001	2/2/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1028	Trench	TTTS1028S001	1/27/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1028	Trench	TTTS1028S001	1/27/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1028	Trench	TTTS1028S002	1/27/2009	4	4.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1028	Trench	TTTS1028S002	1/27/2009	4	4.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTTS1029	Trench	TTTS1029S001	1/27/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1029	Trench	TTTS1029S001	1/27/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1029	Trench	TTTS1029S002	1/27/2009	4	4.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1029	Trench	TTTS1029S002	1/27/2009	4	4.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1030	Trench	TTTS1030S001	1/27/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1030	Trench	TTTS1030S001	1/27/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1030	Trench	TTTS1030S002	1/27/2009	4	4.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1030	Trench	TTTS1030S002	1/27/2009	4	4.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1031	Trench	TTTS1031D002	1/27/2009	4	4.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1031	Trench	TTTS1031D002	1/27/2009	4	4.5	Field Duplicate	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1031	Trench	TTTS1031S001	1/27/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1031	Trench	TTTS1031S001	1/27/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X			X	X	X	X		X	X
TTTS1031	Trench	TTTS1031S001SP	1/27/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil			X		X	X	X	X			X
TTTS1031	Trench	TTTS1031S002	1/27/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1031	Trench	TTTS1031S002	1/27/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1032	Trench	TTTS1032S001	1/26/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1032	Trench	TTTS1032S001	1/26/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1032	Trench	TTTS1032S002	1/26/2009	1.5	2	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1032	Trench	TTTS1032S002	1/26/2009	1.5	2	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1033	Trench	TTTS1033S001	1/26/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1033	Trench	TTTS1033S001	1/26/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1033	Trench	TTTS1033S002	1/26/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1033	Trench	TTTS1033S002	1/26/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1034	Trench	TTTS1034S001	1/21/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1034	Trench	TTTS1034S001	1/21/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1034	Trench	TTTS1034S002	1/21/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1034	Trench	TTTS1034S002	1/21/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1035	Trench	TTTS1035S001	1/21/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1035	Trench	TTTS1035S001	1/21/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1035	Trench	TTTS1035S002	1/21/2009	2.5	3	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1035	Trench	TTTS1035S002	1/21/2009	2.5	3	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1036	Trench	TTTS1036S001	1/23/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1036	Trench	TTTS1036S001	1/23/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1036	Trench	TTTS1036S002	1/23/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1036	Trench	TTTS1036S002	1/23/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1037	Trench	TTTS1037S001	1/23/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X		X	X	X
TTTS1037	Trench	TTTS1037S001SP	1/23/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1037	Trench	TTTS1037S001SP	1/23/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTTS1037	Trench	TTTS1037S002	1/23/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1037	Trench	TTTS1037S002	1/23/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1038	Trench	TTTS1038S001	1/28/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1038	Trench	TTTS1038S001	1/28/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1038	Trench	TTTS1038S002	1/28/2009	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1038	Trench	TTTS1038S002	1/28/2009	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1039	Trench	TTTS1039D001	1/28/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1039	Trench	TTTS1039D001	1/28/2009	0	0.5	Field Duplicate	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1039	Trench	TTTS1039S001	1/28/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil					X	X	X	X		X	X
TTTS1039	Trench	TTTS1039S002	1/28/2009	3.5	4	Calculated Sample	In Place	CH2M HILL	Soil											X
TTTS1039	Trench	TTTS1039S002	1/28/2009	3.5	4	Primary Sample	In Place	CH2M HILL	Soil		X	X		X	X	X	X		X	X
TTTS1040	Trench	TTTS1040S001	1/28/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1040	Trench	TTTS1040S001	1/28/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1040	Trench	TTTS1040S002	1/28/2009	4.5	5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1040	Trench	TTTS1040S002	1/28/2009	4.5	5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1041	Trench	TTTS1041S001	1/28/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1041	Trench	TTTS1041S001	1/28/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X

Appendix D – Table D.3-1A
Sampling Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type[1]	Remediation Status	Consultant	Matrix	Dioxin, Furan	Energetics	General Chemistry	Herbicide	Hydrocarbons	Inorganics	Metals	PCBs	Pesticides	SVOC	VOC
TTTS1041	Trench	TTTS1041S002	1/28/2009	2	2.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1041	Trench	TTTS1041S002	1/28/2009	2	2.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1042	Trench	TTTS1042S001	2/2/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1042	Trench	TTTS1042S001	2/2/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1042	Trench	TTTS1042S002	2/2/2009	1	1.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1042	Trench	TTTS1042S002	2/2/2009	1	1.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1043	Trench	TTTS1043S001	1/19/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1043	Trench	TTTS1043S001	1/19/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1043	Trench	TTTS1043S002	1/19/2009	16	16.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1043	Trench	TTTS1043S002	1/19/2009	16	16.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1044	Trench	TTTS1044S001	1/7/2009	0	0.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1044	Trench	TTTS1044S001	1/7/2009	0	0.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1044	Trench	TTTS1044S001SP	1/7/2009	0	0.5	Split Sample	In Place	CH2M HILL	Soil	X	X			X	X	X	X	X	X	X
TTTS1044	Trench	TTTS1044S002	1/19/2009	8	8.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1044	Trench	TTTS1044S002	1/19/2009	8	8.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X
TTTS1044	Trench	TTTS1044S003	1/19/2009	17	17.5	Calculated Sample	In Place	CH2M HILL	Soil	X										X
TTTS1044	Trench	TTTS1044S003	1/19/2009	17	17.5	Primary Sample	In Place	CH2M HILL	Soil	X	X	X		X	X	X	X	X	X	X

Note:

1. Calculated samples are samples for which 1) Dioxin Furan TEQ values were calculated based on dioxin furan congener data provided by the analytical laboratories and/or 2) Total Xylene results were calculated using m-, p-, and o-xylene results provided by the analytical laboratories.

Appendix D – Table D.3-1B
Sampling Summary for Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type [1]	Remediation Status	Consultant	Matrix	VOC
TTSV1002	Soil Vapor Sample	TTSV1002S001	11/24/2008	4.75	5.75	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1002	Soil Vapor Sample	TTSV1002S001	11/24/2008	4.75	5.75	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1003	Soil Vapor Sample	TTSV1003S001	11/21/2008	5.5	6.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1003	Soil Vapor Sample	TTSV1003S001	11/21/2008	5.5	6.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1004	Soil Vapor Sample	TTSV1004S001	11/21/2008	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1004	Soil Vapor Sample	TTSV1004S001	11/21/2008	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1005	Soil Vapor Sample	TTSV1005S001	1/16/2009	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1005	Soil Vapor Sample	TTSV1005S001	1/16/2009	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1007	Soil Vapor Sample	TTSV1007D001	1/16/2009	5	6	Field Duplicate	In Place	CH2M HILL	Soil Vapor	X
TTSV1007	Soil Vapor Sample	TTSV1007S001	1/16/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1007	Soil Vapor Sample	TTSV1007S001	1/16/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1008	Soil Vapor Sample	TTSV1008S001	11/21/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1008	Soil Vapor Sample	TTSV1008S001	11/21/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1010	Soil Vapor Sample	TTSV1010S001	1/16/2009	3.5	4.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1010	Soil Vapor Sample	TTSV1010S001	1/16/2009	3.5	4.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1013	Soil Vapor Sample	TTSV1013S001	1/16/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1013	Soil Vapor Sample	TTSV1013S001	1/16/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1013	Soil Vapor Sample	TTSV1013S002	1/16/2009	6.5	7.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1013	Soil Vapor Sample	TTSV1013S002	1/16/2009	6.5	7.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1014	Soil Vapor Sample	TTSV1014S001	11/24/2008	4.5	5.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1014	Soil Vapor Sample	TTSV1014S001	11/24/2008	4.5	5.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1015	Soil Vapor Sample	TTSV1015S001	11/24/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1015	Soil Vapor Sample	TTSV1015S001	11/24/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1015	Soil Vapor Sample	TTSV1015S002	11/24/2008	7.5	8.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1015	Soil Vapor Sample	TTSV1015S002	11/24/2008	7.5	8.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1016	Soil Vapor Sample	TTSV1016S001	1/16/2009	5.6	6.6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1016	Soil Vapor Sample	TTSV1016S001	1/16/2009	5.6	6.6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1017	Soil Vapor Sample	TTSV1017D002	1/20/2009	11.25	12.25	Field Duplicate	In Place	CH2M HILL	Soil Vapor	X
TTSV1017	Soil Vapor Sample	TTSV1017S001	1/20/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1017	Soil Vapor Sample	TTSV1017S001	1/20/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1017	Soil Vapor Sample	TTSV1017S002	1/20/2009	11.25	12.25	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1017	Soil Vapor Sample	TTSV1017S002	1/20/2009	11.25	12.25	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1018	Soil Vapor Sample	TTSV1018S001	1/20/2009	5.2	6.2	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1018	Soil Vapor Sample	TTSV1018S001	1/20/2009	5.2	6.2	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1019	Soil Vapor Sample	TTSV1019D001	1/21/2009	2.25	3.25	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1019	Soil Vapor Sample	TTSV1019D001	1/21/2009	2.25	3.25	Field Duplicate	In Place	CH2M HILL	Soil Vapor	X
TTSV1019	Soil Vapor Sample	TTSV1019S001	1/21/2009	2.25	3.25	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X

Appendix D – Table D.3-1B
Sampling Summary for Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type [1]	Remediation Status	Consultant	Matrix	VOC
TTSV1019	Soil Vapor Sample	TTSV1019S001	1/21/2009	2.25	3.25	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1020	Soil Vapor Sample	TTSV1020S001	1/21/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1020	Soil Vapor Sample	TTSV1020S001	1/21/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1022	Soil Vapor Sample	TTSV1022S001	1/26/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1022	Soil Vapor Sample	TTSV1022S001	1/26/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1022	Soil Vapor Sample	TTSV1022S002	1/26/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1022	Soil Vapor Sample	TTSV1022S002	1/26/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1022	Soil Vapor Sample	TTSV1022S003	1/26/2009	15.9	16.9	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1022	Soil Vapor Sample	TTSV1022S003	1/26/2009	15.9	16.9	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1023	Soil Vapor Sample	TTSV1023S001	1/21/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1023	Soil Vapor Sample	TTSV1023S001	1/21/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1023	Soil Vapor Sample	TTSV1023S002	1/21/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1023	Soil Vapor Sample	TTSV1023S002	1/21/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1024	Soil Vapor Sample	TTSV1024S001	1/20/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1024	Soil Vapor Sample	TTSV1024S001	1/20/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1025	Soil Vapor Sample	TTSV1025S001	1/14/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1025	Soil Vapor Sample	TTSV1025S001	1/14/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1026	Soil Vapor Sample	TTSV1026S001	1/20/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1026	Soil Vapor Sample	TTSV1026S001	1/20/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1026	Soil Vapor Sample	TTSV1026S002	1/20/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1026	Soil Vapor Sample	TTSV1026S002	1/20/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1028	Soil Vapor Sample	TTSV1028S001	1/14/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1028	Soil Vapor Sample	TTSV1028S001	1/14/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1028	Soil Vapor Sample	TTSV1028S002	1/14/2009	9.5	10.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1028	Soil Vapor Sample	TTSV1028S002	1/14/2009	9.5	10.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1029	Soil Vapor Sample	TTSV1029S001	1/20/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1029	Soil Vapor Sample	TTSV1029S001	1/20/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1030	Soil Vapor Sample	TTSV1030S001	1/14/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1030	Soil Vapor Sample	TTSV1030S001	1/14/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1030	Soil Vapor Sample	TTSV1030S002	1/14/2009	6.3	7.3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1030	Soil Vapor Sample	TTSV1030S002	1/14/2009	6.3	7.3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1031	Soil Vapor Sample	TTSV1031S001	1/14/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1031	Soil Vapor Sample	TTSV1031S001	1/14/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1031	Soil Vapor Sample	TTSV1031S002	1/14/2009	7.3	8.3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1031	Soil Vapor Sample	TTSV1031S002	1/14/2009	7.3	8.3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1033	Soil Vapor Sample	TTSV1033S001	11/19/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1033	Soil Vapor Sample	TTSV1033S001	11/19/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X

Appendix D – Table D.3-1B
Sampling Summary for Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type [1]	Remediation Status	Consultant	Matrix	VOC
TTSV1033	Soil Vapor Sample	TTSV1033S002	11/19/2008	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1033	Soil Vapor Sample	TTSV1033S002	11/19/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1034	Soil Vapor Sample	TTSV1034S001	11/24/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1034	Soil Vapor Sample	TTSV1034S001	11/24/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1034	Soil Vapor Sample	TTSV1034S002	11/24/2008	10.8	11.8	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1034	Soil Vapor Sample	TTSV1034S002	11/24/2008	10.8	11.8	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1035	Soil Vapor Sample	TTSV1035S001	11/25/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1035	Soil Vapor Sample	TTSV1035S001	11/25/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1035	Soil Vapor Sample	TTSV1035S002	11/25/2008	11.9	12.9	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1035	Soil Vapor Sample	TTSV1035S002	11/25/2008	11.9	12.9	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1036	Soil Vapor Sample	TTSV1036S001	11/25/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1036	Soil Vapor Sample	TTSV1036S001	11/25/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1036	Soil Vapor Sample	TTSV1036S002	11/25/2008	12	13	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1036	Soil Vapor Sample	TTSV1036S002	11/25/2008	12	13	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1037	Soil Vapor Sample	TTSV1037S001	1/21/2009	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1037	Soil Vapor Sample	TTSV1037S001	1/21/2009	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1037	Soil Vapor Sample	TTSV1037S002	1/21/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1037	Soil Vapor Sample	TTSV1037S002	1/21/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1038	Soil Vapor Sample	TTSV1038S001	11/25/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1038	Soil Vapor Sample	TTSV1038S001	11/25/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1038	Soil Vapor Sample	TTSV1038S002	11/25/2008	12	13	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1038	Soil Vapor Sample	TTSV1038S002	11/25/2008	12	13	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1039	Soil Vapor Sample	TTSV1039S001	11/24/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1039	Soil Vapor Sample	TTSV1039S001	11/24/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1039	Soil Vapor Sample	TTSV1039S002	11/24/2008	10	11	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1039	Soil Vapor Sample	TTSV1039S002	11/24/2008	10	11	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1040	Soil Vapor Sample	TTSV1040S001	1/26/2009	4.5	5.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1040	Soil Vapor Sample	TTSV1040S001	1/26/2009	4.5	5.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1041	Soil Vapor Sample	TTSV1041S001	1/26/2009	4.5	5.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1041	Soil Vapor Sample	TTSV1041S001	1/26/2009	4.5	5.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1042	Soil Vapor Sample	TTSV1042S001	11/18/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1042	Soil Vapor Sample	TTSV1042S001	11/18/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1042	Soil Vapor Sample	TTSV1042S002	11/18/2008	8	9	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1042	Soil Vapor Sample	TTSV1042S002	11/18/2008	8	9	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1043	Soil Vapor Sample	TTSV1043S001	1/26/2009	3.5	4.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1043	Soil Vapor Sample	TTSV1043S001	1/26/2009	3.5	4.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1044	Soil Vapor Sample	TTSV1044S001	11/19/2008	4.5	5.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X

Appendix D – Table D.3-1B
Sampling Summary for Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type [1]	Remediation Status	Consultant	Matrix	VOC
TTSV1044	Soil Vapor Sample	TTSV1044S001	11/19/2008	4.5	5.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1045	Soil Vapor Sample	TTSV1045S001	11/18/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1045	Soil Vapor Sample	TTSV1045S001	11/18/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1046	Soil Vapor Sample	TTSV1046S001	11/19/2008	5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1046	Soil Vapor Sample	TTSV1046S001	11/19/2008	5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1046	Soil Vapor Sample	TTSV1046S002	11/19/2008	11	12	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1046	Soil Vapor Sample	TTSV1046S002	11/19/2008	11	12	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047D003	1/27/2009	14	15	Field Duplicate	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S001	1/27/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S001	1/27/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S002	1/27/2009	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S002	1/27/2009	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S003	1/27/2009	14	15	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S003	1/27/2009	14	15	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S004	1/27/2009	19	20	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S004	1/27/2009	19	20	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S005	1/27/2009	24	25	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1047	Soil Vapor Sample	TTSV1047S005	1/27/2009	24	25	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1048	Soil Vapor Sample	TTSV1048S001	1/20/2009	2.75	3.75	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1048	Soil Vapor Sample	TTSV1048S001	1/20/2009	2.75	3.75	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1052	Soil Vapor Sample	TTSV1052S001	1/27/2009	3	4	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1052	Soil Vapor Sample	TTSV1052S001	1/27/2009	3	4	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1053	Soil Vapor Sample	TTSV1053S001	1/21/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1053	Soil Vapor Sample	TTSV1053S001	1/21/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1053	Soil Vapor Sample	TTSV1053S002	1/21/2009	7.5	8.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1053	Soil Vapor Sample	TTSV1053S002	1/21/2009	7.5	8.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1054	Soil Vapor Sample	TTSV1054S001	1/26/2009	4.5	5.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1054	Soil Vapor Sample	TTSV1054S001	1/26/2009	4.5	5.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1055	Soil Vapor Sample	TTSV1055S001	1/26/2009	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1055	Soil Vapor Sample	TTSV1055S001	1/26/2009	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1056	Soil Vapor Sample	TTSV1056S001	11/17/2008	2.5	3.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1056	Soil Vapor Sample	TTSV1056S001	11/17/2008	2.5	3.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1057	Soil Vapor Sample	TTSV1057S001	11/17/2008	4.5	5.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1057	Soil Vapor Sample	TTSV1057S001	11/17/2008	4.5	5.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1057	Soil Vapor Sample	TTSV1057S002	11/17/2008	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1057	Soil Vapor Sample	TTSV1057S002	11/17/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1058	Soil Vapor Sample	TTSV1058S001	11/17/2008	3	4	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X

Appendix D – Table D.3-1B
Sampling Summary for Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type [1]	Remediation Status	Consultant	Matrix	VOC
TTSV1058	Soil Vapor Sample	TTSV1058S001	11/17/2008	3	4	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1059	Soil Vapor Sample	TTSV1059S001	11/25/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1059	Soil Vapor Sample	TTSV1059S001	11/25/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1059	Soil Vapor Sample	TTSV1059S002	11/25/2008	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1059	Soil Vapor Sample	TTSV1059S002	11/25/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1059	Soil Vapor Sample	TTSV1059S003	11/25/2008	14	15	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1059	Soil Vapor Sample	TTSV1059S003	11/25/2008	14	15	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1060	Soil Vapor Sample	TTSV1060D002	11/18/2008	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1060	Soil Vapor Sample	TTSV1060D002	11/18/2008	9	10	Field Duplicate	In Place	CH2M HILL	Soil Vapor	X
TTSV1060	Soil Vapor Sample	TTSV1060S001	11/17/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1060	Soil Vapor Sample	TTSV1060S001	11/17/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1060	Soil Vapor Sample	TTSV1060S002	11/18/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1061	Soil Vapor Sample	TTSV1061S001	11/18/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1061	Soil Vapor Sample	TTSV1061S001	11/18/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1062	Soil Vapor Sample	TTSV1062S001	11/18/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1062	Soil Vapor Sample	TTSV1062S001	11/18/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1063	Soil Vapor Sample	TTSV1063S001	11/19/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1063	Soil Vapor Sample	TTSV1063S001	11/19/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1063	Soil Vapor Sample	TTSV1063S002	11/19/2008	9	10	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1063	Soil Vapor Sample	TTSV1063S002	11/19/2008	9	10	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1065	Soil Vapor Sample	TTSV1065S001	11/19/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1065	Soil Vapor Sample	TTSV1065S001	11/19/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1066	Soil Vapor Sample	TTSV1066D001	11/21/2008	2	3	Field Duplicate	In Place	CH2M HILL	Soil Vapor	
TTSV1066	Soil Vapor Sample	TTSV1066S001	11/21/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1066	Soil Vapor Sample	TTSV1066S001	11/21/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1069	Soil Vapor Sample	TTSV1069S001	11/18/2008	2	3	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1069	Soil Vapor Sample	TTSV1069S001	11/18/2008	2	3	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1070	Soil Vapor Sample	TTSV1070S001	11/21/2008	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1070	Soil Vapor Sample	TTSV1070S001	11/21/2008	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1072	Soil Vapor Sample	TTSV1072S001	11/18/2008	3	4	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1072	Soil Vapor Sample	TTSV1072S001	11/18/2008	3	4	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1080	Soil Vapor Sample	TTSV1080S001	1/27/2009	3	4	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1080	Soil Vapor Sample	TTSV1080S001	1/27/2009	3	4	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1083	Soil Vapor Sample	TTSV1083S001	2/27/2009	2.2	2.8	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1083	Soil Vapor Sample	TTSV1083S001	2/27/2009	2.2	2.8	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1084	Soil Vapor Sample	TTSV1084S001	1/27/2009	4	5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1084	Soil Vapor Sample	TTSV1084S001	1/27/2009	4	5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X

Appendix D – Table D.3-1B
Sampling Summary for Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type [1]	Remediation Status	Consultant	Matrix	VOC
TTSV1085	Soil Vapor Sample	TTSV1085D001	2/27/2009	2.3	2.9	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1085	Soil Vapor Sample	TTSV1085D001	2/27/2009	2.3	2.9	Field Duplicate	In Place	CH2M HILL	Soil Vapor	X
TTSV1088	Soil Vapor Sample	TTSV1088S001	2/27/2009	4.5	6	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1088	Soil Vapor Sample	TTSV1088S001	2/27/2009	4.5	6	Primary Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1088	Soil Vapor Sample	TTSV1088S002	2/27/2009	8.5	9.5	Calculated Sample	In Place	CH2M HILL	Soil Vapor	X
TTSV1088	Soil Vapor Sample	TTSV1088S002	2/27/2009	8.5	9.5	Primary Sample	In Place	CH2M HILL	Soil Vapor	X

Note:

1. Calculated samples are samples for which Total Xylene results were calculated using m-, p-, and o-xylene results provided by the analytical laboratories.

Appendix D – Table D.3-1C
Sampling Summary for Surface Water
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth (feet bgs)	Base Depth (feet bgs)	Sample Type	Remediation Status	Consultant	Matrix	Inorganics
TTSW01	Surface Water Sample	SSFL-W-150K	3/5/2003	0	0.5	Split Sample	In Place	DTSC	Surface Water	X
TTSW01	Surface Water Sample	SSFL-W-168K	3/15/2003	0	0.5	Split Sample	In Place	DTSC	Surface Water	X
TTSW02	Surface Water Sample	SSFL-W-167K	3/15/2003	0	0.5	Split Sample	In Place	DTSC	Surface Water	X
TTSW03	Surface Water Sample	SSFL-W-166K	3/15/2003	0	0.5	Split Sample	In Place	DTSC	Surface Water	X
TTSW04	Surface Water Sample	MJ218	3/15/2003	0	0.5	Primary Sample	In Place	MWH	Surface Water	X

Appendix D – Table D.3-1D
Sampling Summary for Near Surface Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type[1]	Remediation Status	Consultant	Matrix	Energetics	Inorganics	Metals	SVOC	VOC
RS-06	Groundwater Monitoring Well	2222	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	
RS-06	Groundwater Monitoring Well	2223	8/14/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-06	Groundwater Monitoring Well	BASE-62	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater	X				
RS-06	Groundwater Monitoring Well	COMMON-259	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater		X	X		
RS-06	Groundwater Monitoring Well	RS-06 (2/17/1999)	2/17/1999			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater		X			
RS-06	Groundwater Monitoring Well	RS-06 (5/11/2001)	5/11/2001			Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater		X			
RS-06	Groundwater Monitoring Well	RS-06 (5/7/2000)	5/7/2000			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater		X			
RS-06	Groundwater Monitoring Well	VOC-2645	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-06	Groundwater Monitoring Well	VOC-2646	7/18/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-06	Groundwater Monitoring Well	VOC-2648	3/5/1988			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-06	Groundwater Monitoring Well	VOC-2649	6/3/1989			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-06	Groundwater Monitoring Well	VOC-2651	6/6/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-06	Groundwater Monitoring Well	VOC-2652	12/14/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-06	Groundwater Monitoring Well	VOC-2653	6/4/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	2224	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	
RS-07	Groundwater Monitoring Well	2225	11/3/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	9502295*18-8010	2/15/1995			Field Duplicate	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	9508142*25-8010	8/4/1995			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	9602198*9-8260	2/7/1996			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	9602198*9-8260	2/7/1996			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	9608389*5-8260	8/16/1996			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	9608389*5-8260	8/16/1996			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	9702067*23-8260	2/3/1997			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	9702067*23-8260	2/3/1997			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	9708066*23-8260A	8/3/1997			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	9708066*23-8260A	8/3/1997			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	ACID-58	3/5/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	
RS-07	Groundwater Monitoring Well	BASE-63	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater	X				
RS-07	Groundwater Monitoring Well	BASE-64	3/5/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater	X				
RS-07	Groundwater Monitoring Well	COMMON-260	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater		X	X		
RS-07	Groundwater Monitoring Well	COMMON-261	9/16/1987			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater		X	X		
RS-07	Groundwater Monitoring Well	L65964-008-8260B	2/19/2000			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L76841-012	11/6/2000			Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater	X	X		X	
RS-07	Groundwater Monitoring Well	L76841-012-8260B	11/6/2000			Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L80495-019-8260B	2/2/2001			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L80495-019-8260B	2/2/2001			Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	L9800455-001	2/17/1998			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L9800455-001	2/17/1998			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L9800555-004	2/17/1998			Field Duplicate	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L9800555-006	2/17/1998			Field Duplicate	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	
RS-07	Groundwater Monitoring Well	L9802616-003-8260B	8/6/1998			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L9802616-003-8260B	8/6/1998			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	L9900740-007-8260B	2/17/1999			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	L9900740-007-8260B	2/17/1999			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07 (2/17/1998)	2/17/1998			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater		X			
RS-07	Groundwater Monitoring Well	RS-07 (5/7/1998)	5/7/1998			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater		X			
RS-07	Groundwater Monitoring Well	RS-07_013108_01_L	1/31/2008	2.5	7.5	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_013108_01_L	1/31/2008	2.5	7.5	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_021506_01_D	2/15/2006	2	8	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_021506_01_D	2/15/2006	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_021506_03_D	2/15/2006	2	8	Split Sample	In Place	Haley & Aldrich	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_022103_01	2/21/2003	2	8	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_022103_01	2/21/2003	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater		X		X	X

Appendix D – Table D.3-1D
Sampling Summary for Near Surface Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type[1]	Remediation Status	Consultant	Matrix	Energetics	Inorganics	Metals	SVOC	VOC
RS-07	Groundwater Monitoring Well	RS-07_022704_01	2/27/2004	2	8	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_022704_01	2/27/2004	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_03	2/19/2002	2.5	7.5	Split Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_030805_01_D	3/8/2005	2	8	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_030805_01_D	3/8/2005	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_051106_01_D	5/11/2006	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_051107_01_T	5/11/2007			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_051107_01_T	5/11/2007			Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_082203_01	8/22/2003	2	8	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_082203_01	8/22/2003	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_090106_01_T	9/1/2006	2	8	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_090106_01_T	9/1/2006	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-07_120105_01_D	12/1/2005	2	8	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-07_120105_01_D	12/1/2005	2	8	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater	X	X		X	X
RS-07	Groundwater Monitoring Well	RS-07_120105_36_P	12/1/2005	2	8	Field Duplicate	In Place	Haley & Aldrich	Shallow Groundwater				X	
RS-07	Groundwater Monitoring Well	RS-207	2/19/2002	2.5	7.5	Field Duplicate	In Place	Haley & Aldrich	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	RS-7	2/19/2002	2.5	7.5	Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	RS-7	2/19/2002	2.5	7.5	Primary Sample	In Place	Haley & Aldrich	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2654	6/13/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2655	7/18/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2656	8/15/1985			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2657	9/30/1986			Calculated Sample	In Place		Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2657	9/30/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2658	12/10/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2659	9/16/1987			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2660	3/5/1988			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2661	9/24/1988			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2662	6/3/1989			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2663	12/10/1989			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2664	6/30/1990			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2665	12/3/1990			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2666	3/5/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2667	9/8/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2668	3/9/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2669	9/13/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2670	3/4/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2671	6/4/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2673	6/4/1993			Split Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater					X
RS-07	Groundwater Monitoring Well	VOC-2674	8/6/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2676	11/3/1993			Split Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2677	2/5/1994			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X
RS-07	Groundwater Monitoring Well	VOC-2678	8/7/1994			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Shallow Groundwater				X	X

Note:
1. Calculated samples are samples for which Total Xylene results were calculated using m-, p-, and o-xylene results provided by the analytical laboratories.

Appendix D – Table D.3-1E
Sampling Summary for Chatsworth Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type[1]	Remediation Status	Consultant	Matrix	Energetics	Inorganics	Metals	SVOC	VOC
RD-03	Groundwater Monitoring Well	2487	11/18/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	2966	7/9/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	2974	8/6/1986			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	2974	8/6/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	9502129*9-8010	2/6/1995			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	9508201*10-8010	8/9/1995			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	9603006*8-8260	2/29/1996			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	9603006*8-8260	2/29/1996			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	9608254*10-8260	8/9/1996			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	9608254*10-8260	8/9/1996			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	9702651*1-8260	2/25/1997			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	9702651*1-8260	2/25/1997			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	9708066*16-8260A	8/3/1997			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	9708066*16-8260A	8/3/1997			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	ACID-115	7/9/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	
RD-03	Groundwater Monitoring Well	BASE-121	7/9/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater	X				
RD-03	Groundwater Monitoring Well	COMMON-12	7/9/1986			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	COMMON-12	7/9/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater		X	X		
RD-03	Groundwater Monitoring Well	COMMON-13	9/18/1987			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater		X	X		
RD-03	Groundwater Monitoring Well	L44772-001	8/6/1998			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	L44772-001	8/6/1998			Split Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	L77809-009	11/30/2000			Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	L77809-009	11/30/2000			Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater	X	X		X	
RD-03	Groundwater Monitoring Well	L77809-009-8260B	11/30/2000			Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	L84735-008-8260B	5/15/2001			Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	L9801427-009-8260A	5/7/1998			Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	L9801427-009-8260A	5/7/1998			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	L9802616-008-8260B	8/6/1998			Field Duplicate	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	L9900580-015-8260B	2/9/1999			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	L9900580-015-8260B	2/9/1999			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03 (5/7/1998)	5/7/1998			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater		X			
RD-03	Groundwater Monitoring Well	RD-03 (8/6/1998)	8/6/1998			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_021406_01_D	2/14/2006	27	300	Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_021406_01_D	2/14/2006	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_021803_01	2/18/2003	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_021803_01	2/18/2003	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater		X			
RD-03	Groundwater Monitoring Well	RD-03_021803_02	2/18/2003	27	300	Field Duplicate	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_022504_02	2/25/2004	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_022504_02	2/25/2004	27	300	Field Duplicate	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_030805_01_D	3/8/2005	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_030805_01_D	3/8/2005	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_051107_01_T	5/11/2007			Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_051107_01_T	5/11/2007			Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_080406_01_T	8/4/2006	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_080406_01_T	8/4/2006	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_081503_01	8/15/2003	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_081503_01	8/15/2003	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_081508_01_L	8/15/2008	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_081508_01_L	8/15/2008	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_081804_01_D	8/18/2004	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_081804_01_D	8/18/2004	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_081804_02_D	8/18/2004	27	300	Field Duplicate	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_081804_03_A	8/18/2004	27	300	Split Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X

Appendix D – Table D.3-1E
Sampling Summary for Chatsworth Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type[1]	Remediation Status	Consultant	Matrix	Energetics	Inorganics	Metals	SVOC	VOC
RD-03	Groundwater Monitoring Well	RD-03_081805_01_D	8/18/2005	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_081805_01_D	8/18/2005	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater	X	X		X	X
RD-03	Groundwater Monitoring Well	RD-03_081805_36_P	8/18/2005	27	300	Field Duplicate	In Place	Haley & Aldrich	Chatsworth Groundwater				X	
RD-03	Groundwater Monitoring Well	RD-03_082807_36_L	8/28/2007			Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_082807_36_L	8/28/2007			Field Duplicate	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_082902_01	8/29/2002	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_082902_01	8/29/2002	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	RD-03_111102_01	11/11/2002	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-03_111102_01	11/11/2002	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater		X		X	X
RD-03	Groundwater Monitoring Well	RD-03_120605_36_D	12/6/2005	27	300	Field Duplicate	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-3	3/6/2002	27	300	Calculated Sample	In Place	Haley & Aldrich	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	RD-3	3/6/2002	27	300	Primary Sample	In Place	Haley & Aldrich	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1373	1/23/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	VOC-1374	7/9/1986			Split Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1376	8/6/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	
RD-03	Groundwater Monitoring Well	VOC-1377	8/6/1986			Split Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	VOC-1378	10/16/1986			Calculated Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	VOC-1378	10/16/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1379	12/9/1986			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1380	9/18/1987			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1382	12/3/1987			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1383	3/3/1988			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1384	6/5/1988			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1385	9/23/1988			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1386	12/2/1988			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1387	3/5/1989			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1388	6/7/1989			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	VOC-1389	9/10/1989			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1390	12/9/1989			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1391	3/28/1990			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1393	6/30/1990			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1394	9/13/1990			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1395	12/7/1990			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1397	3/6/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1398	6/3/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1399	9/8/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1400	12/4/1991			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1401	3/7/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1402	6/5/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1403	9/12/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1404	12/19/1992			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1406	6/3/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1407	8/7/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1408	11/18/1993			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	
RD-03	Groundwater Monitoring Well	VOC-1409	2/5/1994			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1410	5/8/1994			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1411	8/7/1994			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater					X
RD-03	Groundwater Monitoring Well	VOC-1412	8/7/1994			Split Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X
RD-03	Groundwater Monitoring Well	VOC-1413	11/5/1994			Primary Sample	In Place	Groundwater Resources Consultants, Inc.	Chatsworth Groundwater				X	X

Note:
1. Calculated samples are samples for which Total Xylene results were calculated using m-, p-, and o-xylene results provided by the analytical laboratories.

Appendix D – Table D.3-1F
Sampling Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type	Remediation Status	Consultant	Matrix	Radioisotopes Burn Pit Soil
TTBS1002	Soil Boring	TTBS1002S001RAD	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1002	Soil Boring	TTBS1002S002RAD	11/13/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1002	Soil Boring	TTBS1002S003RAD	11/13/2008	7.5	8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1006	Soil Boring	TTBS1006S001RAD	11/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1006	Soil Boring	TTBS1006S002RAD	11/11/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1006	Soil Boring	TTBS1006S002RAD	11/11/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1009	Soil Boring	TTBS1009S001RAD	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1009	Soil Boring	TTBS1009S002RAD	11/13/2008	3.25	3.75	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1010	Soil Boring	TTBS1010S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1010	Soil Boring	TTBS1010S001SPRAD	12/11/2008	0	0.5	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1010	Soil Boring	TTBS1010S001SPRAD	12/11/2008	0	0.5	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1010	Soil Boring	TTBS1010S002RAD	12/11/2008	2	2.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1013	Soil Boring	TTBS1013D001RAD	11/11/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTBS1013	Soil Boring	TTBS1013S001RAD	11/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1013	Soil Boring	TTBS1013S002RAD	11/11/2008	1.2	2.2	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1016	Soil Boring	TTBS1016S001RAD	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1016	Soil Boring	TTBS1016S002RAD	11/13/2008	3.5	4.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1016	Soil Boring	TTBS1016S002SPRAD	11/13/2008	3.5	4.5	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1016	Soil Boring	TTBS1016S002SPRAD	11/13/2008	3.5	4.5	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1020	Soil Boring	TTBS1020S001RAD	11/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1020	Soil Boring	TTBS1020S002RAD	11/11/2008	2.5	3	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1020	Soil Boring	TTBS1020S002RAD	11/11/2008	2.5	3	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027D001RAD	11/18/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027D001RAD	11/18/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027D001SPRAD	11/18/2008	0	0.5	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027D001SPRAD	11/18/2008	0	0.5	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027S001RAD	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027S001RAD	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027S002RAD	11/18/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1027	Soil Boring	TTBS1027S003RAD	11/18/2008	7	8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1030	Soil Boring	TTBS1030S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1030	Soil Boring	TTBS1030S002RAD	12/2/2008	2.4	3.4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1033	Soil Boring	TTBS1033S001RAD	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1033	Soil Boring	TTBS1033S001RAD	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1033	Soil Boring	TTBS1033S002RAD	11/25/2008	2.1	3.1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1035	Soil Boring	TTBS1035S001RAD	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1035	Soil Boring	TTBS1035S002RAD	11/25/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1035	Soil Boring	TTBS1035S003RAD	11/25/2008	8.5	9.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1035	Soil Boring	TTBS1035S003RAD	11/25/2008	8.5	9.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1036	Soil Boring	TTBS1036S001RAD	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1036	Soil Boring	TTBS1036S002RAD	11/25/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1036	Soil Boring	TTBS1036S003RAD	11/25/2008	6.4	7.4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1039B[1]	Soil Boring	TTBS - 1039 B	9/25/2008	0	0	Primary Sample	In Place	CH2M HILL	SOIL	X

Appendix D – Table D.3-1F
Sampling Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type	Remediation Status	Consultant	Matrix	Radioisotopes Burn Pit Soil
TTBS1039B[1]	Soil Boring	TTBS - 1039 B	9/25/2008	0	0	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1040	Soil Boring	TTBS1040S001RAD	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1040	Soil Boring	TTBS1040S001RAD	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1040	Soil Boring	TTBS1040S002RAD	11/6/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1040	Soil Boring	TTBS1040S002RAD	11/6/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1042	Soil Boring	TTBS1042S001RAD	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1043	Soil Boring	TTBS1043S001RAD	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1043	Soil Boring	TTBS1043S002RAD	11/25/2008	3	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1046	Soil Boring	TTBS1046S001RAD	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1046	Soil Boring	TTBS1046S001RAD	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1046	Soil Boring	TTBS1046S002RAD	11/13/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1046	Soil Boring	TTBS1046S003RAD	11/13/2008	14	15	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1048	Soil Boring	TTBS1048S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1048	Soil Boring	TTBS1048S002RAD	12/2/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1048	Soil Boring	TTBS1048S003RAD	12/2/2008	7.5	8.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1050	Soil Boring	TTBS1050D001RAD	11/18/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTBS1050	Soil Boring	TTBS1050S001RAD	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1050	Soil Boring	TTBS1050S002RAD	11/18/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1050	Soil Boring	TTBS1050S003RAD	11/18/2008	11	12	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1053	Soil Boring	TTBS1053S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1053	Soil Boring	TTBS1053S002RAD	12/2/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1054	Soil Boring	TTBS1054S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1054	Soil Boring	TTBS1054S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1054	Soil Boring	TTBS1054S002RAD	12/4/2008	2	2.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1059	Soil Boring	TTBS1059S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1059	Soil Boring	TTBS1059S002RAD	12/4/2008	2.3	2.8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1061	Soil Boring	TTBS1061S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1061	Soil Boring	TTBS1061S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1061	Soil Boring	TTBS1061S002RAD	12/2/2008	1.5	2	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1062	Soil Boring	TTBS1062S001RAD	11/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1062	Soil Boring	TTBS1062S002RAD	11/18/2008	2	2.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1062	Soil Boring	TTBS1062S002RAD	11/18/2008	2	2.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1064	Soil Boring	TTBS1064S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1064	Soil Boring	TTBS1064S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1064	Soil Boring	TTBS1064S002RAD	12/4/2008	2	3	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1064	Soil Boring	TTBS1064S002SPRAD	12/4/2008	2	3	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1064	Soil Boring	TTBS1064S002SPRAD	12/4/2008	2	3	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1064A[1]	Soil Boring	TTBS - 1064 A	9/26/2008	0	0	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1064A[1]	Soil Boring	TTBS - 1064 A	9/26/2008	0	0	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1067	Soil Boring	TTBS1067S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1067	Soil Boring	TTBS1067S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1068	Soil Boring	TTBS1068S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1068	Soil Boring	TTBS1068S002RAD	12/16/2008	1.5	2	Primary Sample	In Place	CH2M HILL	SOIL	X

Appendix D – Table D.3-1F
Sampling Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type	Remediation Status	Consultant	Matrix	Radioisotopes Burn Pit Soil
TTBS1069	Soil Boring	TTBS1069S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1069	Soil Boring	TTBS1069S002RAD	12/16/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1069	Soil Boring	TTBS1069S003RAD	12/16/2008	6	6.8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1075A[1]	Soil Boring	TTBS1075A	10/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1075A[1]	Soil Boring	TTBS1075A	10/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1077A[1]	Soil Boring	TTBS1077A	10/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1078	Soil Boring	TTBS1078S001RAD	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1078	Soil Boring	TTBS1078S002RAD	11/13/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1079	Soil Boring	TTBS1079S001RAD	11/13/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1079	Soil Boring	TTBS1079S001SPRAD	11/13/2008	0	0.5	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1079	Soil Boring	TTBS1079S002RAD	11/13/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1079	Soil Boring	TTBS1079S002RAD	11/13/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1083	Soil Boring	TTBS1083D001RAD	11/6/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTBS1083	Soil Boring	TTBS1083S001RAD	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1083	Soil Boring	TTBS1083S002RAD	11/6/2008	3.5	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1085	Soil Boring	TTBS1085S001RAD	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1085	Soil Boring	TTBS1085S002RAD	11/6/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1085	Soil Boring	TTBS1085S003RAD	11/6/2008	6	7	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1096	Soil Boring	TTBS1096S001RAD	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1096	Soil Boring	TTBS1096S002RAD	11/6/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1096	Soil Boring	TTBS1096S001RAD	11/6/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1096	Soil Boring	TTBS1096S002RAD	11/6/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1119	Soil Boring	TTBS1119S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1119	Soil Boring	TTBS1119S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1119	Soil Boring	TTBS1119S002RAD	12/18/2008	0.8	1.8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1121	Soil Boring	TTBS1121S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1121	Soil Boring	TTBS1121S002RAD	12/18/2008	0.5	1.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1122	Soil Boring	TTBS1122S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1122	Soil Boring	TTBS1122S002RAD	12/16/2008	0.5	1.2	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1123	Soil Boring	TTBS1123S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1123	Soil Boring	TTBS1123S002RAD	12/16/2008	0.5	1.4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1123	Soil Boring	TTBS1123S002RADSP	12/16/2008	0.5	1.4	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1123	Soil Boring	TTBS1123S002RADSP	12/16/2008	0.5	1.4	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1133	Soil Boring	TTBS1133S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1133	Soil Boring	TTBS1133S002RAD	12/18/2008	2	3	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1135	Soil Boring	TTBS1135S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1135	Soil Boring	TTBS1135S002RAD	12/18/2008	1.2	2.2	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1139	Soil Boring	TTBS1139S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1139	Soil Boring	TTBS1139S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1139	Soil Boring	TTBS1139S002RAD	12/11/2008	2	2.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1145	Soil Boring	TTBS1145S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1146	Soil Boring	TTBS1146S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1146	Soil Boring	TTBS1146S002RAD	12/2/2008	4	4.9	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1147	Soil Boring	TTBS1147S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1147	Soil Boring	TTBS1147S002RAD	12/2/2008	4	5	Primary Sample	In Place	CH2M HILL	SOIL	X

Appendix D – Table D.3-1F
Sampling Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type	Remediation Status	Consultant	Matrix	Radioisotopes Burn Pit Soil
TTBS1147	Soil Boring	TTBS1147S003RAD	12/2/2008	9	10	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1148	Soil Boring	TTBS1148D001RAD	12/2/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTBS1148	Soil Boring	TTBS1148S001RAD	12/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1148	Soil Boring	TTBS1148S002RAD	12/2/2008	4.5	5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1148	Soil Boring	TTBS1148S003RAD	12/2/2008	17.5	17.8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1149	Soil Boring	TTBS1149S001RAD	11/25/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1149	Soil Boring	TTBS1149S002RAD	11/25/2008	1.75	2.75	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1149	Soil Boring	TTBS1149S002RAD	11/25/2008	1.75	2.75	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1158	Soil Boring	TTBS1158S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1158	Soil Boring	TTBS1158S002RAD	12/18/2008	0.5	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1164	Soil Boring	TTBS1164S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1164	Soil Boring	TTBS1164S002RAD	12/16/2008	0.5	1.4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1177	Soil Boring	TTBS1177S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1177	Soil Boring	TTBS1177S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1177	Soil Boring	TTBS1177S002RAD	12/9/2008	2	3	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1178	Soil Boring	TTBS1178S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1178	Soil Boring	TTBS1178S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1178	Soil Boring	TTBS1178S002RAD	12/9/2008	4	4.8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1183	Soil Boring	TTBS1183S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1183	Soil Boring	TTBS1183S002RAD	12/4/2008	2.5	3.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1183	Soil Boring	TTBS1183S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1183	Soil Boring	TTBS1183S002RAD	12/4/2008	2.5	3.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1184	Soil Boring	TTBS1184S001RAD	12/4/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1184	Soil Boring	TTBS1184S002RAD	12/4/2008	3	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1184	Soil Boring	TTBS1184S002RAD	12/4/2008	3	4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1201	Soil Boring	TTBS1201S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1201	Soil Boring	TTBS1201S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1201	Soil Boring	TTBS1201S002RAD	12/11/2008	1.2	1.7	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1202	Soil Boring	TTBS1202S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1202	Soil Boring	TTBS1202S002RAD	12/11/2008	1.5	2	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1203	Soil Boring	TTBS1203D002RAD	12/11/2008	0.8	1.3	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTBS1203	Soil Boring	TTBS1203S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1203	Soil Boring	TTBS1203S002RAD	12/11/2008	0.8	1.3	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1205	Soil Boring	TTBS1205S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1205	Soil Boring	TTBS1205S002RAD	12/11/2008	0.9	1.4	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1213	Soil Boring	TTBS1213S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1215	Soil Boring	TTBS1215S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1215	Soil Boring	TTBS1215S002RAD	12/9/2008	0.5	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1216	Soil Boring	TTBS1216S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1216	Soil Boring	TTBS1216S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1219	Soil Boring	TTBS1219S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1220	Soil Boring	TTBS1220S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1221	Soil Boring	TTBS1221S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1224	Soil Boring	TTBS1224S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X

Appendix D – Table D.3-1F
Sampling Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Sample Location	Location Type	Sample Name	Collection Date	Top Depth	Base Depth	Sample Type	Remediation Status	Consultant	Matrix	Radioisotopes Burn Pit Soil
TTBS1225	Soil Boring	TTBS1225S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1225	Soil Boring	TTBS1225S001RAD	12/9/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1226[1]	Soil Boring	TTBS1226S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1226[1]	Soil Boring	TTBS1226S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1227[1]	Soil Boring	TTBS1227S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1228[1]	Soil Boring	TTBS1228S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1229[1]	Soil Boring	TTBS1229S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1229[1]	Soil Boring	TTBS1229S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1230[1]	Soil Boring	TTBS1230S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1231[1]	Soil Boring	TTBS1231S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1232[1]	Soil Boring	TTBS1232S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1232[1]	Soil Boring	TTBS1232S001RAD	10/30/2008	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1233	Soil Boring	TTBS1233S001RAD	1/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1233	Soil Boring	TTBS1233S001RADSP	1/20/2009	0	1	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1233	Soil Boring	TTBS1233S001RADSP	1/20/2009	0	1	Split Sample	In Place	CH2M HILL	SOIL	X
TTBS1234[2]	Soil Boring	TTBS1234S001RAD	1/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1235[2]	Soil Boring	TTBS1235S001RAD	1/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1235[2]	Soil Boring	TTBS1235S001RAD	1/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1236[2]	Soil Boring	TTBS1236S001RAD	1/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1237[2]	Soil Boring	TTBS1237S001RAD	1/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1238	Soil Boring	TTBS1238S001RAD	3/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTBS1238	Soil Boring	TTBS1238S001RAD	3/20/2009	0	1	Primary Sample	In Place	CH2M HILL	SOIL	X
TTSV1034A[1]	Soil Boring	TTSV1034A-RAD	10/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTSV1035A[1]	Soil Boring	TTSV1035A-RAD	10/2/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1000	Trench	TTTS1000S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1000	Trench	TTTS1000S002RAD	12/16/2008	2.75	3.75	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1001	Trench	TTTS1001S001RAD	12/16/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1001	Trench	TTTS1001S002RAD	12/16/2008	4.8	5.8	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1007	Trench	TTTS1007S001RAD	12/11/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1008N[1]	Soil Boring	TTTS1008N	10/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1009NE[1]	Soil Boring	TTTS1009NE	10/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1009NE[1]	Soil Boring	TTTS1009NE	10/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1009SW[1]	Soil Boring	TTTS1009SW	10/7/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1010	Trench	TTTS1010S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1011	Trench	TTTS1011D001RAD	12/18/2008	0	0.5	Field Duplicate	In Place	CH2M HILL	SOIL	X
TTTS1011	Trench	TTTS1011S001RAD	12/18/2008	0	0.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1011	Trench	TTTS1011S002RAD	12/18/2008	19	19.5	Primary Sample	In Place	CH2M HILL	SOIL	X
TTTS1011	Trench	TTTS1011S002RAD	12/18/2008	19	19.5	Primary Sample	In Place	CH2M HILL	SOIL	X

Notes:
1. Soil samples were collected because radioisotope levels greater than twice background were identified during a surface scan in 2008 (see Section D.3.7 and Attachment D-4).
2. Soil samples were collected based on results of the Gamma Walkover Survey performed in 2008 (see Section D.3.7 and Attachment D-4).

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	**Chemical Use Area Name**[1] (see Section 2 texts and tables for Site History)	**Potential Chemicals Used/Stored**	**Sampling Scope and Rationale** (see Figures D.2-2A through 2-2F for sampling locations)	**Sampling Results** Chemical Concentrations detected greater than background and/or risk screening levels?	**Chemical Use Area sufficiently evaluated for risk assessment?**	**Is delineation sufficient to estimate soil volume in CMS**[2]**?** (see Figure D.5-1 for CMS areas)
1	Area I Burn Pit RFI Site - Western Area: Earth Ponds 1 and 2, including the western hummocky area	VOCs	Chemical uses included VOCs. Screen for VOCs to evaluate potential presence. Soil Vapor: Samples were collected at 7 locations: 1 location inside Earth Pond 2 4 locations near Earth Ponds 1 and 2 2 locations at former buildings Soil vapor sampling was also attempted at 5 additional locations. However, no soil vapor samples could be collected due to the presence of shallow bedrock. Soil Matrix: Samples were collected at approximately 59 locations: 6 locations inside Earth Pond 1 8 locations inside Earth Pond 2 2 locations near the former burn pit identified in aerial photographs located west of the ponds ~11 locations in downslope drainages Remaining locations at former buildings	Soil Vapor: VOCs were detected above residential RBSLs and/or ecological RBSLs in 2 samples. TTSV1005 at 2 to 3 ft bgs (1,1-DCE [1,1-dichloroethene], TCE [trichloroethene]) TTSV1007 at 5 to 6 ft bgs (1,1-DCE) Soil Matrix: VOCs were detected above residential RBSLs in 4 samples. TTBS1255 at 3 to 4 ft bgs (TCE) TTBS1013 at 1.2 to 2.2 ft bgs (PCE [tetrachloroethene]) TR_TTF_0229-6 at 1 ft bgs (carbon disulfide, methylene chloride) SB_TTF-4 at 2 to 2.5 (chloroform, methylene chloride) ***Earth Pond 1 and Earth Pond 2:*** The lateral extent of VOCs in soil is defined to the north, south, east, and west by samples with concentrations below RBSLs. The lateral extent of 1,1-DCE and TCE in soil vapor is defined to the south by samples with non-detect results for VOCs. While the lateral extent of VOCs in soil vapor is not defined to the north, east, and west of Earth Pond 1, several attempts were made to install additional soil vapor probes in this area but samples could not be collected due to refusal on weathered bedrock or poor air flow. Formaldehyde was analyzed to evaluate potential hydrazine impacts and was detected at ~5 locations near Earth Ponds 1 and 2 at concentrations below RBSLs. Further characterization of VOCs is not recommended in this area. Discussion of results is presented in Section D.3.4.2.1. Data are presented in Tables D.3-3A and D.3-3B and Figures D.3-1A through D.3-1E, and analytical results are presented in Figures D.3-9A through D.3-9J.	**Yes.** The extent of VOC impacts is adequately defined for risk assessment.	**Yes.**
		SVOCs	Chemical uses included SVOCs. Screen for SVOCs to evaluate potential presence. Soil samples were collected at 60 locations: 6 locations inside Earth Pond 1, 9 locations inside Earth Pond 2 2 locations near the former burn pit identified in aerial photographs located west of the ponds ~11 locations in downslope drainages Remaining locations at former buildings	SVOCs were detected above their respective residential and/or ecological RBSLs in 6 samples. SB_TTF-4 at 0 to 0.5 ft bgs (pentachlorophenol) TTBS1006 at 3.5 to 4 ft bgs (benzo(a)pyrene) TTBS1014 at 0 to 0.5 ft bgs (bis(2-ethylhexyl) phthalate) TTBS1188 at 0 to 0.5 ft bgs (benzo(a)pyrene) and 4 to 5 ft bgs (benzo(a)pyrene) TTBS1189 at 0 to 0.5 ft bgs (benzo(a)pyrene) ***Earth Pond 2:*** The lateral extent of SVOCs in Earth Pond 2 is defined by 23 surrounding soil samples with results below RBSLs or with no detectable SVOCs. ***Western hummocky area:*** The lateral extent of benzo(a)pyrene in the western hummocky area is defined to the east, south, and west by 13 surrounding soil samples with results below RBSLs. **Additional characterization is recommended in the western hummocky area to define the lateral extent of benzo(a)pyrene north of TTBS1189.** NDMA was analyzed to evaluate potential hydrazine impacts and was detected at 8 locations near Earth Ponds 1 and 2 at concentrations below RBSLs. Discussion of results is presented in Section D.3.4.2.2. Data are presented in Table D.3-3A and Figures D.3-2A through D.3-2C, and analytical results are presented in Figures D.3-10A through D.3-10M.	**Yes.** The extent of SVOC impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
1	Area I Burn Pit RFI Site - Western Area: Earth Ponds 1 and 2, including the western hummocky area	TPH	Chemical uses included TPH. Screen for TPH to evaluate potential presence. Soil samples were collected at 60 locations: 6 locations inside Earth Pond 1 9 locations inside Earth Pond 2 2 locations near the former burn pit identified in aerial photographs located west of the ponds ~11 locations in downslope drainages Remaining locations at former buildings	TPH was detected above residential RBSLs in 3 samples. TTBS1255 at 0 to 0.5 ft bgs (jet fuel-range hydrocarbons) TTBS1258 0 to 0.5 ft bgs (jet fuel-range hydrocarbons) 4.5 to 5 ft bgs (jet fuel-range hydrocarbons) ***Earth Pond 1 and Earth Pond 2:*** The lateral extent of jet fuel-range hydrocarbons is defined to the north, south, east and downslope/west by 16 soil samples with concentrations below RBSLs. Further characterization of TPH is not recommended in this area. Discussion of results is presented in Section D.3.4.2.3. Data are presented in Table D.3-3A and Figures D.3-3A through D.3-3C, and analytical results are presented in Figures D.3-11A through D.3-11F.	**Yes.** The extent of TPH impacts is adequately defined for risk assessment.	**N/A**
		PCBs	Chemical uses included PCBs. Screen for PCBs to evaluate potential presence. Soil samples were collected at 58 locations: 3 locations inside Earth Pond 1 6 locations inside Earth Pond 2 2 locations near the former burn pit identified in aerial photographs located west of the ponds ~13 locations in downslope drainages Remaining locations at former buildings	PCBs were detected above their respective residential and/or ecological RBSLs in 21 samples. TTBS1001 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1002 at 4 to 5 ft bgs (Aroclor 1248, Aroclor 1254, Aroclor 1260) TTBS1007 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) 2 to 2.5 ft bgs (Aroclor 1254) TTBS1009 at 0 to 0.5 ft bgs (Aroclor 1248) TTBS1013 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1019 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1021 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) 6.5 to 7 ft bgs (Aroclor 1254) TTBS1188 at 5.6 to 6.6 (Aroclor 1260) TTTS1001 at 0 to 0.5 ft bgs (Aroclor 1254) TTTS1002 at 0 to 0.5 ft bgs (Aroclor 1254) TTTS1003 at 0 to 0.5 ft bgs (Aroclor 1254) TTTS1017 at 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) TTTS1018 at 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) TTTS1021 at 4.5 to 5 ft bgs (Aroclor 1254) TTTS1022 at 0 to 0.5 ft bgs (Aroclor 1254) TTTS1023 0 to 0.5 ft bgs (Aroclor 1254) 6.5 to 7 ft bgs (Aroclor 1254) TTTS1024 at 0 to 0.5 ft bgs (Aroclor 1254) TTTS1025 at 5.5 to 6 ft bgs (Aroclor 1254, Aroclor 1260) ***Earth Pond 1 and Earth Pond 2:*** The lateral extent of Aroclor 1248, Aroclor 1254, and Aroclor 1260 in the Earth Ponds 1 and 2 area is defined by 15 surrounding and down slope samples with no detectable concentration of PCBs. ***Western hummocky area:*** The lateral extent of Aroclor 1254 and Aroclor 1260 in the western hummocky area is defined to the south, east, and west by 10 surrounding soil samples with results below RBSLs. **Additional characterization is recommended to define the lateral extent of Aroclor 1254 and Aroclor 1260 north of TTTS1025.** Discussion of results is presented in Section D.3.4.2.4. Data are presented in Table D.3-3A and Figures D.3-4A through D.3-4C, and analytical results are presented in Figures D.3-11A through D.3-11F.	**Yes.** The extent of PCB impacts is adequately defined for risk assessment.	**Yes.**
		Metals	Chemical uses included metals. Further characterize presence of metals. Soil samples were collected at 68 locations: 5 locations inside Earth Pond 1 9 locations inside Earth Pond 2 2 locations near the former burn pit identified in aerial photographs located west of the ponds ~15 locations in downslope drainages Remaining locations at former buildings	Metals were detected above background and residential and/or ecological RBSLs in 61 samples. SB_TTF-1 at 0 to 0.5 ft bgs (cadmium, lithium, mercury) SB_TTF-2 at 0 to 0.5 ft bgs (cadmium, lithium) SB_TTF-3 at 0 to 0.5 ft bgs (cadmium, copper, lead) SB_TTF-4 0 to 0.5 ft bgs (boron, cadmium, copper, silver) 2 to 2.5 ft bgs (cadmium, mercury) SB_TTF-5 at 0 to 0.5 ft bgs (cadmium) SB_TTF-6 at 0 to 0.5 ft bgs (cadmium) TTBS10 at 0 to 0.42 ft bgs (mercury) TTBS11 at 0 to 0.42 ft bgs (copper, mercury, silver) TTBS13 at 0 to 0.42 ft bgs (mercury) TTBS80 at 0 to 0.5 ft bgs (copper, silver) TTBS1020 at 0 to 0.5 ft bgs (mercury) TTBS1021 0 to 0.5 ft bgs (cadmium, mercury) 4 to 4.5 ft bgs (mercury) 6.5 to 7 ft bgs (copper, mercury) TTBS1172 at 0 to 0.5 ft bgs (selenium) TTBS1188 0 to 0.5 ft bgs (mercury) 4 to 5 ft bgs (selenium) 5.5 to 6.6 ft bgs (mercury) TTBS1194 0 to 0.5 ft bgs (selenium) 0.5 to 1.5 ft bgs (selenium, lithium) TTBS1196 at 0 to 0.5 ft bgs (selenium)	**Yes.** The extent of metals impacts is adequately defined for risk assessment.	**N/A**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	**Chemical Use Area Name**[1] (see Section 2 texts and tables for Site History)	**Potential Chemicals Used/Stored**	**Sampling Scope and Rationale** (see Figures D.2-2A through 2-2F for sampling locations)	**Sampling Results** Chemical Concentrations detected greater than background and/or risk screening levels?	**Chemical Use Area sufficiently evaluated for risk assessment?**	**Is delineation sufficient to estimate soil volume in CMS**[2]**?** (see Figure D.5-1 for CMS areas)
1	Area I Burn Pit RFI Site - Western Area: Earth Ponds 1 and 2, including the western hummocky area	Metals		TTBS1000 0 to 0.5 ft bgs (mercury), 4 to 5 ft bgs (mercury), 6 to 7 ft bgs (selenium) TTBS1001 0 to 0.5 ft bgs (mercury) 4 to 5 ft bgs (selenium) TTBS1002 0 to 0.5 ft bgs (copper) 4 to 5 ft bgs (copper) TTBS1003 at 0.5 to 1 foot bgs (lithium) TTBS1004 at 1 to 1.8 ft bgs (selenium) TTBS1007 0 to 0.5 ft bgs (lithium) 2 to 2.5 ft bgs (lithium) TTBS1011 at 0 to 0.5 ft bgs (selenium) TTBS1013 1.2 to 2.2 ft bgs (lithium) TTBS1014 at 0 to 0.5 ft bgs (silver) TTBS1015 0 to 0.5 ft bgs (copper) 4 to 5 ft bgs (copper) TTBS1016 0 to 0.5 ft bgs (selenium) 3.5 to 4.5 (aluminum, lithium, vanadium, zirconium) TTBS1017 0 to 0.5 ft bgs (copper) 5 to 6 ft bgs (hexavalent chromium, mercury) TTBS1019 0 to 0.5 ft bgs (selenium) 3.5 to 4 (copper, selenium, zinc) TTBS1255 0 to 0.5 ft bgs (mercury, selenium) 3 to 4 ft bgs (selenium) TTBS1258 0 to 0.5 ft bgs (hexavalent chromium, mercury, selenium) 4.5 to 5 ft bgs (selenium) TTTS1000 0 to 0.5 ft bgs (arsenic, copper) 2.75 to 3.75 (copper) TTTS1001 at 0 to 0.5 ft bgs (copper) TTTS1017 at 0 to 0.5 ft bgs (copper, mercury) TTTS1018 at 0 to 0.5 ft bgs (cadmium, copper, mercury, silver) TTTS1019 at 0 to 0.5 ft bgs (mercury) TTTS1020 0 to 0.5 ft bgs (mercury) 2.5 to 3 ft bgs (mercury) TTTS1023 at 6.5 to 7 ft bgs (mercury) TTTS1025 0 to 0.5 ft bgs (mercury) 5.5 to 6 ft bgs (copper, mercury) TTTS1026 0 to 0.5 ft bgs (mercury) 1.5 to 2 ft bgs (mercury) ***Western Area:*** The lateral extent of metals is generally defined by surrounding samples with results below background concentrations. **Additional characterization is recommended in the western hummocky area to define the extent of mercury north of TTTS1025.** Discussion of results is presented in Section D.3.4.2.5. Data are presented in Table D.3-3A and Figures D.3-5A through D.3-5D, and analytical results are presented in Figures D.3-11A through D.3-11I.		
		Perchlorate	Chemical uses included perchlorate. No prior sampling had been performed. Screen for perchlorate to evaluate potential presence. Soil Matrix: samples were collected at 31 locations: 4 locations inside Earth Pond 1 6 locations inside Earth Pond 2 1 location near the former burn pit identified in aerial photographs located west of the ponds ~6 locations in downslope drainages Remaining locations at former buildings	Soil Matrix: Perchlorate was detected above its ecological RBSL in 6 samples. TTTS1003 at 4.5 to 5 ft bgs TTBS1008 0 to 0.5 ft bgs 1.7 to 2.7 ft bgs, TTBS1012 at 5 to 6 ft bgs TTBS1022 at 2 to 2.5 ft bgs TTBS1253 at 2 to 2.5 ft bgs ***Earth Pond 1 and Earth Pond 2 (including Explosive Shed 1 and southern SWMU 4.8 boundary area):*** The lateral extent of perchlorate is defined to the south, east, and west by approximately 18 surrounding samples with no detectable perchlorate. **Additional characterization is recommended to define the extent of perchlorate to the south of TTBS1253 and north of TTBS1022.** Discussion of results is presented in Section D.3.4.2.5. Data are presented in Tables D.3-3A and 3-3C and Figure D.3-8A through D.3-8C, and analytical results are presented in Figures D.3-13A through D.3-13I.	**Yes.** The extent of perchlorate impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	**Chemical Use Area Name**[1] (see Section 2 texts and tables for Site History)	**Potential Chemicals Used/Stored**	**Sampling Scope and Rationale** (see Figures D.2-2A through 2-2F for sampling locations)	**Sampling Results** Chemical Concentrations detected greater than background and/or risk screening levels?	**Chemical Use Area sufficiently evaluated for risk assessment?**	**Is delineation sufficient to estimate soil volume in CMS**[2]**?** (see Figure D.5-1 for CMS areas)
1	Area I Burn Pit RFI Site - Western Area: Earth Ponds 1 and 2, including the western hummocky area	Dioxins, Furans	Chemical uses included dioxins. Further characterize the presence of dioxins. Soil samples were collected at 52 locations: 3 locations inside Earth Pond 1, ~11 locations inside Earth Pond 2 1 location near the former burn pit identified in aerial photographs located west of the ponds ~11 locations in downslope drainages Remaining locations at former buildings	The dioxins and furans TEQ value for mammals exceeded its background concentration and residential and/or ecological RBSLs in 39 samples. SB_TTFD-01 at 0 to 0.5 ft bgs SB_TTFD-02 at 0 to 0.5 ft bgs SB_TTFD-03 at 0 to 0.5 ft bgs SB_TTFD-04 at 0 to 0.5 ft bgs SB_TTF_DR1 at 0 to 0.5 ft bgs SB_TTF_DR2 at 0 to 0.5 ft bgs SB_TTF_DR4 at 0 to 0.5 ft bgs TTBS08 at 0 to 0.42 ft bgs TTBS31 at 0 to 0.5 ft bgs TTBS32 at 0 to 0.5 ft bgs TTBS77 0 to 0.5 ft bgs 2 to 2.5 ft bgs TTBS79 at 0 to 0.5 ft bgs TTBS1003 at 0 to 0.5 ft bgs TTBS1004 at 0 to 0.5 ft bgs TTBS1010 at 0 to 0.5 ft bgs TTBS1011 at 0 to 0.5 ft bgs TTBS1012 0 to 0.5 ft bgs 4 to 5 ft bgs 5 to 6 ft bgs TTBS1013 0 to 0.5 ft bgs 1.2 to 2.2 ft bgs TTBS1014 0 to 0.5 ft bgs 2.5 to 3 ft bgs TTBS1015 0 to 0.5 ft bgs 4 to 5 ft bgs TTBS1016 0 to 0.5 ft bgs 3.5 to 4.5 ft bgs TTBS1017 at 0 to 0.5 ft bgs TTBS1021 at 0 to 0.5 ft bgs TTBS1170 at 0 to 0.5 ft bgs TTBS1171 at 0 to 0.5 ft bgs TTSS05 at 0 to 0.05 ft bgs TTSS07 at 0 to 0.05 ft bgs TTTS1000 0 to 0.5 ft bgs 2.75 to 3.75 ft bgs TTTS1001 at 0 to 0.5 ft bgs TTTS1002 at 0 to 0.5 ft bgs TTTS1003 at 0 to 0.5 ft bgs ***Western hummocky area migration pathway:*** The lateral extent of DioxinFuran_TEQ_Mammal in the drainage pathways in the western hummocky area is defined by samples with results below RBSLs upstream (north) and downstream (south) in the drainage. ***Earth Pond 1 and Earth Pond 2:*** The lateral extent of DioxinFuran_TEQ_Mammal in the vicinity of Earth Ponds 1 and 2 is generally defined to the north, east, and west by approximately 13 surrounding samples with results below RBSLs and/or background concentrations. Although the lateral extent of dioxins is not defined to the south, DioxinFuran_TEQ_Mammal was not detected at concentrations exceeding RBSLs in down slope samples collected in the drainage west of Earth Ponds 1 and 2. Further characterization of dioxins is not recommended in this area. Discussion of results is presented in Section D.3.4.2.6. Data are presented in Table D.3-3A and Figures D.3-6A through D.3-6C, and analytical results are presented in Figures D.3-14A through D.3-14F.	**Yes.** The extent of dioxins impacts is adequately defined for risk assessment.	**Yes.**
		Energetics	Chemical uses included energetics. No prior sampling had been performed. Screen for energetics to evaluate potential presence. Soil samples were collected at 57 locations: 3 locations inside Earth Pond 1, ~11 locations inside Earth Pond 2 1 location near the former burn pit identified in aerial photographs located west of the ponds ~11 locations in downslope drainages Remaining locations at former buildings	No energetics were detected in the samples. Further characterization of energetics is not recommended in this area. Discussion of results is presented in Section D.3.4.2.7. Data are presented in Table D.3-3A and Figures D.3-7A through D.3-7C, and analytical results are presented in Figures D.3-15A through D.3-15C.	**Yes.** The extent of energetics impacts is adequately defined for risk assessment.	**N/A.**
		Pesticides	Chemical uses included herbicides. No prior sampling had been performed. Screen for herbicides to evaluate potential presence. Soil samples were collected at 31 locations.	Pesticides were detected above their respective residential and/or ecological RBSLs in 3 samples. TTBS1017 at 0 to 0.5 ft bgs (4,4'-DDE) TTTS1002 at 0 to 0.5 ft bgs (4,4'-DDE) TTTS1003 at 0 to 0.5 ft bgs (4,4'-DDE) ***Earth Pond 1 and Earth Pond 2:*** The lateral extent of 4,4'-DDE is defined in all directions by surrounding samples with results below RBSLs or no detectable pesticides. Further characterization of pesticides is not recommended in this area. Discussion of results is presented in Section D.3.4.2.9. Data are presented in Table D.3-3A and analytical results are presented in Figures D.3-15A through D.3-15C.	**Yes.** The extent of pesticide impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	VOCs	Chemical uses included VOCs. Further characterize presence of VOCs. Soil Vapor: Samples were collected at 51 locations: 1 location inside Burn Pit 1 1 location inside Burn Pit 2 (TTF) 1 location inside Concrete Pad 1 1 location inside Concrete Pad 2 (TTF) 12 locations inside 1982 Excavation Areas 1 through 6 1 location in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents. Soil vapor sampling was also attempted at 20 additional locations. However, no soil vapor samples could be collected due to the presence of shallow bedrock. Soil Matrix: Samples were collected at 233 locations: 3 locations inside Concrete Pond 1 3 locations inside Concrete Pond 3 1 location inside Concrete Pad 1 4 locations inside Concrete Pad 2 (TTF) ~8 locations inside Burn Pit 1 ~8 locations inside Burn Pit 2 (TTF) ~ 31 locations inside 1982 Excavation Areas 1 through 6 ~20 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	Soil Vapor: VOCs were detected above residential RBSLs and/or ecological RBSLs in 54 samples. TTSV1014 at 4.5 to 5.5 ft. bgs (1,1-DCE, TCE) TTSV1015 5 to 6 ft. bgs (1,1-DCE, TCE) 7.5 to 8.5 ft bgs (1,1-DCE, TCE) TTSV1016 5.6 to 6.6 ft. bgs (1,1-DCE, 1,1-DCA [1,1-dichloroethane], 1,1,1-TCA [1,1,1-trichloroethane], PCE, TCE, cis-1,2-DCE [cis-1,2-dichloroethene], VC [vinyl chloride]) TTSV1017 5 to 6 ft. bgs (1,1-DCE, TCE) 11.25 to 12.25 feet bgs (1,1-DCE, TCE) TTSV1018 at 5.2 to 6.2 ft. bgs (1,1-DCE, TCE) TTSV1023 5 to 6 ft. bgs (1,1-DCE) 9 to 10 ft bgs (1,1-DCE) TTSV1024 at 5 to 6 ft. bgs (1,1,1-TCA, 1,1-DCE, PCE, TCE) TTSV1025 at 5 to 6 ft. bgs (1,1,1-TCA, 1,1-DCE, PCE, TCE) TTSV1026 5 to 6 ft. bgs (1,1,1-TCA, 1,1-DCE, TCE) 9 to 10 ft bgs (1,1,1-TCA, 1,1-DCE, PCE, TCE, 1,1,2-Trichloro-1,2,2-trifluoroethane) TTSV1030 5 to 6 ft. bgs (1,1,1-TCA, 1,1-DCA, 1,1-DCE, cis-1,2-DCE, TCE) 6.3 to 7.3 ft bgs (1,1,1-TCA, 1,1-DCA, 1,1-DCE, cis-1,2-DCE, TCE) TTSV1031 5 to 6 ft. bgs (TCE) 7.3 to 8.3 ft bgs (TCE) TTSV1033 5 to 6 ft. bgs (TCE) 9 to 10 ft bgs (TCE) TTSV1034 5 to 6 ft. bgs (1,1-DCE, TCE) 10.8 to 11.8 ft bgs (1,1-DCE, TCE) TTSV1035 5 to 6 ft. bgs (1,1-DCE) 11.9 to 12.9 ft bgs (1,1-DCE, TCE, 1,1,2-Trichloro-1,2,2-trifluoroethane) TTSV1036 12 to 13 ft. bgs (1,1-DCE) TTSV1037 5 to 6 ft. bgs (1,1-DCE) 9 to 10 ft bgs (1,1-DCE) TTSV1038 at 12 to 13 ft. bgs (1,1-DCE) TTSV1039 at 10 to 11 ft. bgs (1,1-DCE) TTSV1040 at 4.5 to 5.5 ft. bgs (1,1-DCE) TTSV1042 at 8 to 9 ft. bgs (TCE, cis-1,2-DCE) TTSV1047 9 to 10 ft. bgs (TCE, 1,1-DCE, toluene), 14 to 15 ft bgs (TCE, 1,1-DCE, toluene), 19 to 20 ft bgs (TCE, 1,1-DCE), 24 to 25 ft bgs (TCE, 1,1-DCE, toluene) TTSV1055 at 2.5 to 3.5 ft bgs (1,1-DCE) TTSV1056 at 2.5 to 3.5 ft bgs (1,1-DCE) TTSV1057 4.5 to 5.5 ft bgs (1,1-DCE, TCE) 9 to 10 ft bgs (1,1-DCE, 1,1-DCA, cis-1,2-DCE, chloroform, TCE) TTSV1058 at 3 to 4 ft. bgs (TCE) TTSV1059 4 to 5 ft bgs (1,1-DCE, 1,1-DCA, TCE), 9 to 10 ft bgs (1,1,1-TCA, 1,1-DCE, 1,1-DCA, 1,1,2-Trichloro-1,2,2-trifluoroethane, cis-1,2-DCE, chloroform, TCE) 14 to 15 ft bgs (1,1,1-TCA, 1,1-DCE, 1,1-DCA, 1,1,2-Trichloro-1,2,2-trifluoroethane, cis-1,2-DCE, TCE) TTSV1060 4 to 5 ft bgs (1,1,1-TCA, 1,1-DCE, 1,1-DCA, benzene, cis-1,2-DCE, PCE, TCE) and 9 to 10 ft bgs (1,1,1-TCA, 1,1-DCE, 1,1-DCA, cis-1,2-DCE, PCE, TCE) TTSV1061 at 2 to 3 ft bgs (1,1-DCE, TCE) TTSV1062 at 2 to 3 ft bgs (1,1,1-TCA, 1,1-DCE, PCE, TCE) TTSV1063 2 to 3 ft bgs (1,1-DCE, TCE) and 9 to 10 ft bgs (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,1,1-TCA, 1,1-DCE, 1,1-DCA, cis-1,2-DCE, PCE, TCE) TTSV1065 at 2 to 3 ft bgs (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,1,1-TCA, 1,1-DCE, carbon tetrachloride, chloroform, PCE, TCE) TTSV1066 at 2 to 3 ft bgs (1,1-DCE, TCE) TTSV1069 at 2 to 3 ft bgs (1,1-DCE, TCE) TTSV1070 at 4 to 5 ft bgs (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,1,1-TCA, 1,1-DCE, PCE, TCE) TTSV1088 4.5 to 6 ft. bgs (1,1-DCE, TCE) 8.5 to 9.5 ft bgs (1,1-DCA, 1,1-DCE, TCE, VC) Soil Matrix: VOCs were detected above Residential RBSLs and/or Ecological RBSLs in 99 samples. TTBS1028 0 to 0.5 ft bgs (TCE), 4 to 5 ft bgs (TCE), 5 to 6 ft bgs (PCE, TCE) TTBS1029 0 to 0.5 ft bgs (TCE), 4 to 5 ft bgs (PCE, TCE), 7 to 8 ft bgs (1,1,1-TCA, 1,1,2-TCA [1,1,2-trichloroethane], 1,1-DCA, 1,1-DCE, benzene, chloroform, PCE, TCE) TTBS1030 0 to 0.5 ft bgs (TCE) 2.4 to 3.4 ft bgs (TCE) TTBS1031 at 10 to 11 ft bgs (TCE) TTBS1105 0 to 0.5 ft bgs (TCE), 4 to 5 ft bgs (TCE), 9 to 10 ft bgs (TCE)	**Yes.** The extent of VOC impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	**Chemical Use Area Name**[1] (see Section 2 texts and tables for Site History)	**Potential Chemicals Used/Stored**	**Sampling Scope and Rationale** (see Figures D.2-2A through 2-2F for sampling locations)	**Sampling Results** Chemical Concentrations detected greater than background and/or risk screening levels?		**Chemical Use Area sufficiently evaluated for risk assessment?**	**Is delineation sufficient to estimate soil volume in CMS**[2]**?** (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	VOCs		TTBS1035 0 to 0.5 ft bgs (TCE), 4 to 5 ft bgs (TCE), 8.5 to 9.5 ft bgs (TCE) TTBS1036 0 to 0.5 ft bgs (TCE), 4 to 5 ft bgs (TCE), 6.4 to 7.4 ft bgs (TCE) TTBS1037 0 to 0.5 ft bgs (TCE), 4 to 5 ft bgs (TCE), 5 to 6 ft bgs (TCE) TTBS1038 4 to 5 ft bgs (TCE) 7 to 8 ft bgs (TCE) TTBS1039 0 ft bgs (TCE), 4 ft bgs (TCE), 5 ft bgs (TCE) SB_TTF-19 2 to 2.5 ft bgs (methylene chloride) 4 to 4.5 ft bgs (methylene chloride) SB_TTF-22 at 0 to 0.5 ft bgs (benzene) SB_TTF-32 2 to 2.5 ft bgs (methylene chloride), 4 to 4.5 ft bgs (methylene chloride), 6 to 6.5 ft bgs (methylene chloride), 8 to 8.5 ft bgs (methylene chloride), 10 to 10.5 ft bgs (methylene chloride), 12 to 12.5 ft bgs (methylene chloride). SB_TTF-33 at 2 to 2.5 ft bgs (methylene chloride) and 4 to 4.5 ft bgs (methylene chloride) SB_TTF-35 at 0 to 0.5 ft bgs (benzene) SB_TTF-40 at 2 to 2.5 ft bgs (methylene chloride) SB_TTF-41 at 0 to 0.5 ft bgs (benzene) PPBS1009 at 0 to 1 ft bgs (chloroform) SB_TTF-24 at 0 to 0.5 ft bgs (TCE) SB_TTF-25 at 0 to 0.5 ft bgs (TCE) SB_TTF-28 2 to 2.5 ft bgs (TCE) 4 to 4.5 (1,1,1-TCA, 1,1-DCE, carbon tetrachloride, PCE, TCE, toluene) TTBS1057 0 to 0.5 ft bgs (TCE) 4 to 5 ft bgs (TCE) TR_TTF_0229-1 at 1 ft bgs (methylene chloride) TTBS1090 0 to 0.5 ft bgs (TCE) 4 to 5 ft bgs (TCE) 9.5 to 10.5 ft bgs (1,1,1-TCA, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, 1,1-DCE, 1,1-DCA, cis-1,2-DCE, chloroform, ethylbenzene, TCE, m-Xylene & p-Xylene, o-Xylene, benzene, PCE)	TTBS1040 0 to 0.5 ft bgs (TCE) 3.5 to 4 ft bgs (TCE) TTBS1041 at 0 to 0.25 ft bgs (TCE) TTBS1044 at 0 to 0.5 ft bgs (TCE) TTBS1045 at 11.5 to 12 ft bgs (TCE) TTBS1084 0 to 0.5 ft bgs (PCE, TCE) 3.5 to 4.5 ft bgs (TCE) TTBS1148 at 17.5 to 17.8 ft bgs (TCE) TTBS1180 at 4 to 5 ft bgs (TCE) TR_TTF_0229-9 at 1 ft bgs (methylene chloride) TR_TTF_0229-13 at 2 ft bgs (methylene chloride) TR_TTF_0229-15 at 2 to 3 ft bgs (1,1-DCA, methylene chloride, TCE) TR_TTF_0229-19 at 3 ft bgs (1,1-DCA, toluene) TR_TTF_0229-20 at 3 ft bgs (1,1-DCA, toluene) TR_TTF_0229-17 at 3 ft. bgs (1,1-DCA, toluene) TR_TTF_0229-18 at 2 ft. bgs (1,1-DCA) TTTS1010 at 15 to 15.5 ft bgs (1,1-DCE, 1,1-DCA, cis-1,2-DCE, chloroform, PCE, TCE, benzene) TTTS1011 at 0 to 0.5 ft bgs (1,1-DCA, TCE) TTTS1012 0 to 0.5 ft bgs (1,2-Dibromoethane, 1,1,2-Trichloroethane, carbon tetrachloride, chloroform, PCE, TCE) 3.5 to 4 ft bgs (1,1-DCE, 1,2-DCA, 1,2-Dibromoethane, 1,1,2-Trichloroethane, bromodichloromethane, carbon tetrachloride, chloroform, PCE, TCE, benzene) TTTS1013 0 to 0.5 ft bgs (TCE) 2.5 to 3 ft bgs (TCE) TTTS1014 0 to 0.5 ft bgs (TCE) 2 to 2.5 ft bgs (TCE) TTTS1015 at 0 to 0.5 ft bgs (TCE) TTTS1016 0 to 0.5 ft bgs (TCE) 5.5 to 6 ft bgs (TCE)		

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	VOCs		TTBS1092 0 to 0.5 ft bgs (TCE) 4 to 5 ft bgs (TCE) 6.3 to 7.3 ft bgs (cis-1,2-DCE, TCE) TTBS1094 at 4 to 5 ft bgs (TCE) TTBS1095 0 to 0.5 ft bgs (TCE), 4 to 5 ft bgs (1,1-DCA, PCE, TCE), 7.5 to 8 ft bgs (1,1-DCE, 1,1-DCA, 1,2-DCA [1,2-dichloroethane], benzene, cis-1,2-DCE, chloroform, ethylbenzene, PCE, TCE) 12 to 13 ft bgs (1,1,2-TCA, 1,1-DCA, 1,2-DCA, benzene, cis-1,2-DCE, TCE) TTBS1097 4 to 5 ft bgs (TCE) 8 to 9 ft bgs (TCE) TTBS1101 at 0 to 0.5 ft bgs (TCE) TTBS1102 0 to 0.5 ft bgs (1,1,2-TCA, PCE, TCE) and 4 to 4.5 ft bgs (1,1,1-TCA, 1,1,1,2-PCA [1,1,1,2-Tetrachloroethane], 1,1-DCA, 1,2-DCA, 1,2-Dibromoethane, benzene, bromodichloromethane, chloroform, ethylbenzene, methylene chloride, TCE, m-Xylene & p-Xylene) TTBS1154 at 2 to 3 ft bgs (TCE) TTBS1175 at 0.5 to 1 ft bgs (1,2-DCA) TTTS1043 0 to 0.5 ft bgs (TCE) 16 to 16.5 ft bgs (1,1,2-TCA, 1,1-DCA, 1,2-DCA, benzene, cis-1,2-DCE, chloroform, TCE) TTTS1044 0 to 0.5 ft bgs (TCE), 8 to 8.5 ft bgs (1,1,2-TCA, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, cis-1,2-DCE, ethylbenzene, n-Propylbenzene, PCE, TCE, m-Xylene & p-Xylene, o-Xylene) and 17 to 17.5 ft bgs (1,1,1-TCA, 1,1-DCE, 1,1-DCA, 1,2-DCA, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, benzene, cis-1,2-DCE, ethylbenzene, PCE, TCE, m-Xylene & p-Xylene, o-Xylene) TTBS85 3 to 3.5 ft bgs (1,1-DCE, 1,2-dibromomethane, PCE, TCE) **VOCs were detected above RBSLs in three general areas:** ***Former Fire Demonstration Area 4 (including 1982 excavations 1 through 3 and three geophysical anomalies):*** The lateral extent of VOCs in this area is defined by surrounding samples with results below RBSLs or with no detectable VOCs. ***Burn Pits 1 and 2, Concrete Pads 1 and 2 (including 1982 excavations 4 and 5, and northern SWMU 4.8 boundary area):*** The lateral extent of VOCs in this area is defined by surrounding samples with results below RBSLs or with no detectable VOCs. ***Concrete Pond 2 and Earth Pond 3 (including the control center and three geophysical anomalies east of Earth Pond 3):*** The lateral extent of VOCs in soil in this area is defined by surrounding samples with results below RBSLs or with no detectable VOCs. The lateral extent of VOCs in soil vapor in this area is defined to the south and west by samples with results below RBSLs or with no detectable VOCs. Although the lateral extent of VOCs in soil vapor is not defined to the east and north, many attempts were made to install additional soil vapor probes in these directions; soil vapor probes could not be installed due to refusal on shallow weathered bedrock. Formaldehyde was analyzed to evaluate potential hydrazine impacts and was detected in soil near the following features at concentrations below RBSLs: 1XXX-006 1XXX-007 1982 Excavations 1 through 4 1982 Excavation 6 Burn Pit 2 Concrete Pond 1 Concrete Pond 2 Potential drum and equipment storage area identified in aerial photographs located west of Burn Pit 2 Potential drum and equipment storage area identified in aerial photographs located north of Concrete Pad 2 Potential former burn pit identified in aerial photographs located west of Earth Pond 3 Potential former burn pit identified in historical documents located west of Earth Pond 3 Further characterization of VOCs is not recommended in these areas. Discussion of results is presented in Section D.3.4.2.1. Data are presented in Tables D.3-3A and D.3-3B and Figure D.3-2, and analytical results are presented in Figures D.3-9A through D.3-9J.		

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	SVOCs	Chemical uses included SVOCs. Screen for SVOCs to further characterize the extent. Soil samples were collected at 238 locations: 2 locations inside Concrete Pond 1 3 locations inside Concrete Pond 3 1 location inside Concrete Pad 1 4 locations inside Concrete Pad 2 (TTF) ~8 locations inside Burn Pit 1 ~8 locations inside Burn Pit 2 (TTF) ~ 29 locations inside 1982 Excavation Areas 1 through 6 ~22 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	SVOCs were detected above their respective residential and/or ecological RBSLs in 19 samples. SB_TTF-28 at 4 to 4.5 ft bgs (1,2-dichlorobenzene, 1,4-dichlorobenzene) TR_TTF_0229-9 at 1 ft bgs (di-n-butyl phthalate) TR_TTF_0229-17 at 3 ft bgs (fluorene) TR_TTF_0229-18 at 2 ft bgs (di-n-butyl phthalate) TTBS1028 at 5 to 6 ft bgs (bis(2-Ethylhexyl) phthalate) TTBS1029 at 7 to 8 ft bgs (bis(2-Ethylhexyl) phthalate) TTBS1036 at 0 to 0.5 ft bgs (benzo(a)pyrene) TTBS1073 at 0 to 0.5 ft bgs (bis(2-Ethylhexyl) phthalate) TR_TTF_0229-19 at 3 ft bgs (phenanthrene) TTBS1075 at 10 to 11 ft bgs (benzo(a)pyrene) TTBS1090 at 9.5 to 10.5 ft bgs (1,4-dichlorobenzene) TTBS1095 0 to 0.5 ft bgs (benzo(a)pyrene) 7.5 to 8 ft bgs (1,4-dichlorobenzene) TTBS1102 at 4 to 4.5 ft bgs (1,2-dichlorobenzene, 1,4-dichlorobenzene) TTBS1120 at 0 to 0.5 ft bgs (acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene) TTTS1012 at 0 to 0.5 ft bgs (benzo(a)pyrene, bis(2-Ethylhexyl) phthalate) TTTS1043 at 0 to 0.5 ft bgs (benzo(a)pyrene) TTTS1044 8 to 8.5 ft bgs (1,4-dichlorobenzene) 17 to 17.5 ft bgs (1,4-dichlorobenzene) **SVOCs were detected above RBSLs in four general areas:** ***1982 excavations 1 and 2:*** The lateral extent of SVOCs in this area is defined by 13 surrounding samples with results below RBSLs or with no detectable SVOCs. ***Potential former drum and storage area in central portion of Area I Burn Pit RFI Site at the southern SWMU 4.8 boundary:*** The lateral extent of SVOCs in soil at TTBS1120 is defined by 7 surrounding soil samples with results below RBSLs or no detectable SVOCs. ***Burn Pit 2 and Concrete Pad 2 (including 1982 excavation 4):*** The lateral extent of SVOCs in this area is defined by approximately 31 surrounding soil samples with results below RBSLs or with no detectable SVOCs. ***Concrete Pond 2 and Earth Pond 3:*** The lateral extent of SVOCs in this area is defined by approximately 25 surrounding soil samples with results below RBSLs or with no detectable SVOCs. NDMA was analyzed to evaluate potential hydrazine impacts and was detected at 3 locations near Concrete Pad 2, Concrete Pond 2, and Concrete Pond 3 at concentrations below RBSLs. Further characterization of SVOCs is not recommended in this area. Discussion of results is presented in Section D.3.4.2.2. Data are presented in Table D.3-3A and Figure D.3-2, and analytical results are presented in Figures D.3-10A through D.3-10M.	**Yes.** The extent of SVOC impacts is adequately defined for risk assessment.	**Yes.**
		TPH	Chemical uses included TPH. Screen for TPH to evaluate potential presence. Soil samples were collected at 214 locations: 2 locations inside Concrete Pond 1 3 locations inside Concrete Pond 3 1 location inside Concrete Pad 1 4 locations inside Concrete Pad 2 (TTF) ~3 locations adjacent to Burn Pit 1 ~8 locations inside Burn Pit 2 (TTF) ~ 20 locations inside 1982 Excavation Areas 1 through 6 ~21 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	TPH was detected above residential RBSLs in 18 samples. SB_TTF-28 at 4 to 4.5 ft bgs (C15-C20 [Diesel Range]) TTBS1090 at 9.5 to 10.5 ft bgs (C8-C11 [Jet Fuel Range] and C12-C14 [Kerosene Range]) TTBS1095 0 to 0.5 ft bgs (C8-C11 [Jet Fuel Range]), 7.5 to 8 ft bgs (C4-C12 [Gasoline Range] and C8-C11 [Jet Fuel Range]), and 12 to 13 ft bgs (C4-C12 [Gasoline Range] and C8-C11 [Jet Fuel Range]) TTBS1102 at 4 to 4.5 ft bgs (C4-C12 [Gasoline Range] and C8-C11 [Jet Fuel Range]) TTTS1010 at 15 to 15.5 ft bgs (C4-C12 [Gasoline Range], C8-C11 [Jet Fuel Range], and C12-C14 [Kerosene Range]) TTTS1012 at 3.5 to 4 ft bgs (C4-C12 [Gasoline Range] and C8-C11 [Jet Fuel Range]) TTTS1044 8 to 8.5 ft bgs (C4-C12 [Gasoline Range], C8-C11 [Jet Fuel Range], and C12-C14 [Kerosene Range]) and 17 to 17.5 ft bgs (C4-C12 [Gasoline Range], C8-C11 [Jet Fuel Range], and C12-C14 [Kerosene Range]) TTBS1156 0 to 0.5 ft bgs (C8-C11 [Jet Fuel Range]) 1.5 to 2 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1028 0 to 0.5 ft bgs (C4 - C12 [Gasoline Range]) 4 to 5 ft bgs (C4-C12 [Gasoline Range]) TTBS1029 0 to 0.5 ft bgs (C4-C12 [Gasoline Range]) 7 to 8 ft bgs (C4-C12 [Gasoline Range]) TTBS1044 0 to 0.5 ft bgs (C4-C12 [Gasoline Range]) TTTS1043 16 to 16.5 ft bgs (C4-C12 [Gasoline Range])	**Yes.** The extent of TPH impacts is adequately defined for risk assessment.	**N/A**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	TPH		***1982 Excavations 1 and 2:*** The lateral extent of gasoline-range hydrocarbons in this area is defined by surrounding samples with results below RBSLs or with no detectable TPH. ***1982 Excavation 4:*** The lateral extent of TPH in this area is defined by surrounding soil samples with results below RBSLs or with no detectable SVOCs. ***Concrete Pond 2 and Earth Pond 3:*** The lateral extent of TPH in this area is defined by approximately 30 surrounding samples with results below RBSLs. Further characterization of TPH is not recommended in this area. Discussion of results is presented in Section D.3.4.2.3. Data are presented in Table D.3-3A and Figure D.3-3, and analytical results are presented in Figures D.3-11A through D.3-11F.		
		PCBs	Chemical uses included PCBs. Screen for PCBs to evaluate potential presence. Soil samples were collected at 162 locations: 1 location inside (and 2 locations outside) Concrete Pond 1 1 location inside Concrete Pond 3 1 location inside Concrete Pad 1 1 location inside Concrete Pad 2 (TTF) 2 locations near Burn Pit 1 5 locations inside Burn Pit 2 (TTF) ~15 locations inside 1982 Excavation Areas 1 through 6 ~16 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	PCBs were detected above their respective residential and/or ecological RBSLs in 43 samples. TTBS1027 at 0 to 0.5 ft bgs (Aroclor 1248) TTBS1035 4 to 5 ft bgs (Aroclor 1254) 8.5 to 9.5 ft bgs (Aroclor 1254) TTBS1036 4 to 5 ft bgs (Aroclor 1254) 6.4 to 7.4 ft bgs (Aroclor 1254) TTBS1039 at 4 to 5 ft bgs (Aroclor 1248, Aroclor 1254) TTBS1040 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) 3.5 to 4 ft bgs (Aroclor 1254, Aroclor 1260) TTBS1043 at 3 to 4 ft bgs (Aroclor 1254, Aroclor 1260) TTBS1055 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1056 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1068 at 1.5 to 2 ft bgs (Aroclor 1248) TTBS1090 0 to 0.5 ft bgs (Aroclor 1254) 4 to 5 ft bgs (Aroclor 1254) 9.5 to 10.5 ft bgs (Aroclor 1254) TTBS1091 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1092 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) 6.3 to 7.3 ft bgs (Aroclor 1254) TTBS1094 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1095 0 to 0.5 ft bgs (Aroclor 1254) 4 to 5 ft bgs (Aroclor 1254) 7.5 to 8 ft bgs (Aroclor 1254) 12 to 13 ft bgs (Aroclor 1254) TTBS1096 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1098 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1099 at 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) TTBS1101 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1102 at 4 to 4.5 ft bgs (Aroclor 1254) TTBS1119 at 0 to 0.5 ft bgs (Aroclor 1248) TTBS1148 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1149 at 1.75 to 2.75 ft bgs (Aroclor 1254) TTBS1179 4 to 5 ft bgs (Aroclor 1254) 5 to 6 ft bgs (Aroclor 1254) TTTS1004 at 0 to 0.5 ft bgs (Aroclor 1254) TTTS1010 at 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) TTTS1011 0 to 0.5 ft bgs (Aroclor 1254) 19 to 19.5 ft bgs (Aroclor 1248) TTTS1012 0 to 0.5 ft bgs (Aroclor 1254) 3.5 to 4 ft bgs (Aroclor 1254) TTTS1013 at 0 to 0.5 ft bgs (Aroclor 1254) TTTS1015 0 to 0.5 ft bgs (Aroclor 1254) 2.5 to 3 ft bgs (Aroclor 1254) TTTS1044 at 0 to 0.5 ft bgs (Aroclor 1254) ***Former Fire Demonstration Area 4:*** The lateral extent of PCBs in this area (TTTS1004) is defined by 9 surrounding soil samples with no detectable concentration of PCBs. ***1982 Excavation 4:*** The lateral extent of PCBs in this area is defined by 8 surrounding soil samples with no results below RBSLs or with no detectable PCBs. ***Concrete Pond 2, Concrete Pond 3, and Earth Pond 3 (including 1982 excavation 5):*** The lateral extent of PCBs in this area is defined by approximately 22 surrounding soil samples with results below RBSLs or with no detectable PCBs. ***Northern SWMU 4.8 Boundary Area:*** The lateral extent of PCBs in the northern SWMU 4.8 boundary area (TTBS1119 and TTBS1068) is generally defined by 9 surrounding soil samples with results below RBSLs or with no detectable PCBs. Further characterization of PCBs is not recommended in this area. Discussion of results is presented in Section D.3.4.2.4. Data are presented in Table D.3-3A and Figure D.3-4, and analytical results are presented in Figures D.3-11A through D.3-11F.	**Yes.** The extent of PCB impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	Metals	Chemical uses included metals. Screen for metals to further characterize the extent. Soil samples were collected at 277 locations: 2 locations inside Concrete Pond 1 3 locations inside Concrete Pond 3 1 location inside Concrete Pad 1 4 locations inside Concrete Pad 2 (TTF) ~8 locations inside and adjacent to Burn Pit 1 ~13 locations inside and adjacent to Burn Pit 2 (TTF) ~ 29 locations inside 1982 Excavation Areas 1 through 6 ~21 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	Metals were detected above background and residential and/or ecological RBSLs in 227 samples. CTBS1107 at 0 to 1 ft bgs (selenium) SB_TTF-7 at 0 to 0.5 ft bgs (cadmium) SB_TTF-8 at 0 to 0.5 ft bgs (cadmium) SB_TTF-9 at 0 to 0.5 ft bgs (boron, cadmium) SB_TTF-10 at 0 to 0.5 ft bgs (cadmium) SB_TTF-11 at 0 to 0.5 ft bgs (cadmium) SB_TTF-12 at 0 to 0.5 ft bgs (cadmium) SB_TTF-13 at 0 to 0.5 ft bgs (cadmium) SB_TTF-14 at 0 to 0.5 ft bgs (cadmium) SB_TTF-15 at 0 to 0.5 ft bgs (cadmium) SB_TTF-16 at 0 to 0.5 ft bgs (cadmium) SB_TTF-17 at 0 to 0.5 ft bgs (cadmium) SB_TTF-18 at 0 to 0.5 ft bgs (cadmium) SB_TTF-19 0 to 0.5 ft bgs (boron, cadmium) 2 to 2.5 ft bgs (cadmium, silver) 4 to 4.5 ft bgs (cadmium, mercury, nickel) SB_TTF-20 at 0 to 0.5 ft bgs (cadmium) SB_TTF-21 at 0 to 0.5 ft bgs (cadmium) SB_TTF-22 at 0 to 0.5 ft bgs (boron, cadmium, copper, lead, mercury) SB_TTF-23 at 0 to 0.5 ft bgs (cadmium) SB_TTF-24 at 0 to 0.5 ft bgs (barium, boron, cadmium, copper, molybdenum, nickel, silver) SB_TTF-25 at 0 to 0.5 ft bgs (boron, cadmium, molybdenum, nickel) SB_TTF-26 at 0 to 0.5 ft bgs (barium, boron, cadmium, copper, lead, lithium, mercury, molybdenum, nickel, silver, zinc) SB_TTF-27 at 0 to 0.5 ft bgs (boron, cadmium, copper, mercury, molybdenum, nickel) SB_TTF-28 2 to 2.5 ft bgs (boron, cadmium, copper, mercury, nickel) 4 to 4.5 ft bgs (boron, cadmium) SB_TTF-30 at 0 to 0.5 ft bgs (cadmium) SB_TTF-31 at 0 to 0.5 ft bgs (boron, cadmium) SB_TTF-32 0 to 0.5 ft bgs (boron, cadmium, copper, mercury), 2 to 2.5 ft bgs (cadmium), 4 to 4.5 ft bgs (cadmium), 6 to 6.5 ft bgs (cadmium), 8 to 8.5 ft bgs (cadmium), 10 to 10.5 ft bgs (cadmium), and 12 to 12.5 ft bgs (cadmium, mercury) SB_TTF-33 0 to 0.5 ft bgs (boron, cadmium, copper, zinc), 2 to 2.5 ft bgs (cadmium), and 4 to 4.5 ft bgs (cadmium, mercury) SB_TTF-34 at 0 to 0.5 ft bgs (boron, cadmium, lead) SB_TTF-35 at 0 to 0.5 ft bgs (boron, cadmium) SB_TTF-36 at 0 to 0.5 ft bgs (boron, cadmium, lead) SB_TTF-37 at 0 to 0.5 ft bgs (boron, cadmium, copper, lead, nickel, zinc) SB_TTF-38 at 0 to 0.5 ft bgs (boron, cadmium) SB_TTF-39 at 0 to 0.5 ft bgs (cadmium)	TTBS1077 0 to 0.5 ft bgs (lead, selenium, zinc) 1.75 to 2.75 ft bgs (selenium) TTBS1080 at 4 to 5 ft bgs (selenium) TTBS1081 at 2.8 to 3.8 ft bgs (selenium) TTBS1083 at 0 to 0.5 ft bgs (mercury) TTBS1084 at 0 to 0.5 ft bgs (zinc) TTBS1086 at 0 ft bgs (selenium) TTBS1087 0 ft bgs (nickel) 4 to 5 ft bgs (selenium) TTBS1088 at 0 to 0.5 ft bgs (selenium) TTBS1089 0 to 0.5 ft bgs (barium, manganese, nickel) and 2 to 2.5 ft bgs (manganese) TTBS1090 0 to 0.5 ft bgs (boron, cadmium, hexavalent chromium, lead, lithium, silver, zinc) 4 to 5 ft bgs (silver) TTBS1091 0 to 0.5 ft bgs (nickel, selenium) 4.8 to 5.3 ft bgs (nickel, vanadium) TTBS1092 at 0 to 0.5 ft bgs (copper, lithium) TTBS1093 0 to 0.5 ft bgs (selenium) 2 to 2.5 ft bgs (aluminum, selenium) TTBS1094 at 0 to 0.5 feet bgs (nickel) TTBS1095 0 to 0.5 ft bgs (cadmium, copper, lead, lithium, nickel) 4 to 5 ft bgs (lithium) 7.5 to 8 ft bgs (aluminum, cobalt, copper, manganese, nickel, vanadium) 12 to 13 ft bgs (aluminum, cobalt, copper, manganese, nickel, vanadium) TTBS1096 at 4 to 5 ft bgs (boron) TTBS1097 4 to 5 ft bgs (aluminum, cobalt, copper, hexavalent chromium, manganese, nickel, vanadium) 8 to 9 ft bgs (aluminum, cobalt, copper, manganese, nickel, vanadium) TTBS1098 0 to 0.5 ft bgs (copper, hexavalent chromium, mercury, molybdenum, nickel) 3.3 to 3.8 ft bgs (boron, manganese, nickel, vanadium) TTBS1100 at 3.5 to 4 ft bgs (lithium) TTBS1101 at 0 to 0.5 ft bgs (copper, lead, nickel, zinc) TTBS1102 0 to 0.5 ft bgs (nickel) 4 to 4.5 ft bgs (zinc) TTBS1103 at 5 to 6 ft bgs (nickel, lithium) TTBS1105 0 to 0.5 ft bgs (boron), 4 to 5 ft bgs (boron) 9 to 10 ft bgs (boron). TTBS1106 at 4 to 5 ft bgs (boron) TTBS1109 0 to 0.5 ft bgs (hexavalent chromium), 4.5 to 5.3 ft bgs (zinc) TTBS1110 at 0 to 0.5 ft bgs (zinc) TTBS1111 0 to 0.5 ft bgs (manganese, selenium) 1.5 to 2 ft bgs (manganese, selenium) TTBS1140 at 0 to 0.5 ft bgs (zinc) TTBS1148 4.5 to 5 ft bgs (mercury) 17.5 to 17.8 ft bgs (cobalt, manganese, nickel, vanadium)	**Yes.** The extent of metals impacts is adequately definedfor risk assessment.	**N/A**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?		Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	Metals		SB_TTF-40 0 to 0.5 ft bgs (cadmium) 2 to 2.5 ft bgs (cadmium, copper, mercury, zinc) SB_TTF-41 at 0 to 0.5 ft bgs (cadmium, copper) SB_TTF-42 at 0 to 0.5 ft bgs (cadmium) SB_TTF-43 at 0 to 0.5 ft bgs (cadmium) SB_TTF-44 at 0 to 0.5 ft bgs (cadmium, nickel) SB_TTF_RR-5 at 0 to 0.5 ft bgs (mercury) SB_TTF_RR-8 at 0 to 0.5 ft bgs (boron, cadmium, copper, lead, mercury, nickel) SWBS1007 at 0 to 1 foot bgs (hexavalent chromium, zinc) TTBS1024 0 to 0.5 ft bgs (selenium) 4 to 5 ft bgs (selenium) 5 to 6 ft bgs (selenium) TTBS1025 0 to 0.5 ft bgs (selenium) 4 to 4.5 ft bgs (selenium) TTBS1026 0 to 0.5 ft bgs (selenium), 4 to 5 ft bgs (selenium) 7 to 7.5 ft bgs (selenium) TTBS1027 at 7 to 8 ft bgs (manganese) TTBS1028 0 to 0.5 ft bgs (copper, hexavalent chromium) 5 to 6 ft bgs (hexavalent chromium) TTBS1029 4 to 5 ft bgs (silver) 7 to 8 ft bgs (copper, lead) TTBS1031 at 0 to 0.5 ft bgs (selenium). TTBS1032 at 4 to 5 ft bgs (nickel) TTBS1033 at 2.1 to 3.1 ft bgs (vanadium) TTBS1034 0 to 0.5 ft bgs (aluminum), 4 to 5 ft bgs (lithium, selenium, vanadium) 5.6 to 6.6 ft bgs (lithium, nickel, selenium) TTBS1035 0 to 0.5 ft bgs (copper, zinc) 8.5 to 9.5 ft bgs (copper) TTBS1036 0 to 0.5 ft bgs (copper, zinc), 4 to 5 ft bgs (copper, manganese) 6.4 to 7.4 ft bgs (lead, zinc) TTBS1037 0 to 0.5 ft bgs (copper) 4 to 5 ft bgs (copper, nickel, selenium) TTBS1038 4 to 5 ft bgs (copper, nickel, selenium) 7 to 8 ft bgs (selenium) TTBS1039 0 to 0.5 ft bgs (copper) 4 to 5 ft bgs (copper) TTBS1040 0 to 0.5 ft bgs (copper, nickel, zinc) 3.5 to 4 ft bgs (arsenic) TTBS1041 at 0 to 0.25 ft bgs (manganese) TTBS1046 at 14 to 15 ft bgs (nickel) TTBS1047 at 9 to 10 ft bgs (cobalt)	TTBS1149 at 1.75 to 2.75 ft bgs (antimony, copper, mercury, molybdenum, nickel, zinc) TTBS1150 0 ft bgs (selenium), 0 to 0.5 ft bgs (hexavalent chromium) 1 to 2 ft bgs (selenium) TTBS1152 0 to 0.5 ft bgs (selenium) 1 to 1.5 ft bgs (selenium) TTBS1154 at 2 to 3 ft bgs (barium, manganese) TTBS1155 0 to 0.5 ft bgs (lithium, nickel) 3.25 to 4.25 (aluminum, lithium, nickel) TTBS1156 at 0 to 0.5 ft bgs (lithium) TTBS1174 at 0.5 to 1 ft bgs (lithium, selenium) TTBS1175 at 0.5 to 1 ft bgs (barium, lithium, manganese, nickel, selenium) TTBS1179 0 to 0.5 ft bgs (mercury), 4 to 5 ft bgs (hexavalent chromium, lead, lithium, nickel) 5 to 6 ft bgs (lithium, nickel) TTBS1180 0 to 0.5 ft bgs (mercury) 4 to 5 ft bgs (mercury, selenium) TTBS1180A at 14.3 to 15.3 ft bgs (aluminum, copper, mercury, nickel, vanadium) TTBS1184 at 0 to 0.5 ft bgs (zinc) TTBS1193 0 to 0.5 ft bgs (aluminum, cobalt, copper, manganese, nickel, vanadium) 1.3 to 2.3 ft bgs (aluminum, cobalt, copper, lithium, manganese, nickel, vanadium, zinc) TTBS1247 at 2 to 2.5 ft bgs (nickel, selenium) TTBS1248 at 2 to 2.5 ft bgs (copper) TTBS1253 at 2 to 2.5 ft bgs (selenium) TTBS1261 0 to 0.5 ft bgs (aluminum, cobalt, copper, manganese, nickel, vanadium) 1.5 to 2 ft bgs (aluminum, cobalt, copper, nickel, vanadium) TTBS1262 0 to 0.5 ft bgs (aluminum, cobalt, copper, nickel, selenium, vanadium, zirconium) 1 to 1.5 ft bgs (cobalt, copper, nickel, selenium, vanadium) TTBS1263 at 0 to 0.5 ft bgs (selenium) TTBS15 at 0 to 0.5 ft bgs (nickel) TTBS17 at 0 to 0.5 ft bgs (barium, boron, copper, lead, molybdenum, nickel, silver, zinc) TTBS18 at 0 to 0.5 ft bgs (mercury, nickel) TTBS19 at 0 to 0.5 ft bgs (aluminum, boron, nickel) TTBS22 at 0 to 0.5 ft bgs (mercury, nickel) TTBS23 at 0 to 0.5 ft bgs (copper, zinc) TTBS24 at 0.5 to 1 ft bgs (boron) TTBS45 0 to 0.5 ft bgs (boron, lead, mercury) 2 to 2.5 ft bgs (boron) 4 to 4.5 ft bgs (boron) TTBS46 at 0.5 to 1 foot bgs (mercury) TTBS49 at 0 to 0.5 ft bgs (mercury) TTBS52 at 0 to 0.5 ft bgs (boron) TTBS53 at 0 to 0.5 ft bgs (nickel, silver, zinc) TTBS54 at 0 to 0.5 ft bgs (aluminum, boron, nickel, silver) TTBS57 at 0 to 0.5 ft bgs (boron, nickel) TTBS62 at 0 to 0.5 ft bgs (boron) TTBS63 at 0 to 0.5 ft bgs (boron, nickel)		

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?		Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	Metals		TTBS1051 at 0 to 0.5 ft bgs (hexavalent chromium, manganese, silver) TTBS1057 0 to 0.5 ft bgs (mercury, nickel), 4 to 5 ft bgs (aluminum, cobalt, copper, manganese, mercury, nickel, selenium, vanadium) 9 to 10 ft bgs (aluminum, cobalt, copper, lithium, manganese, nickel, vanadium) TTBS1060 0 to 0.5 ft bgs (selenium) 1.5 to 2 ft bgs (boron, mercury) TTBS1063 at 4 to 5 ft bgs (selenium) TTBS1064 at 2 to 3 ft bgs (arsenic) TTBS1068 at 0 to 0.5 ft bgs (nickel) TTBS1070 0 to 0.5 ft bgs (manganese, nickel) 2 to 3 ft bgs (cobalt, manganese, nickel, vanadium) TTBS1075 0 to 0.5 ft bgs (copper, lead, selenium) 4 to 5 ft bgs (manganese, selenium) 10 to 11 ft bgs (selenium) TTBS1076 0 to 0.5 ft bgs (selenium, zinc) 3 to 4 ft bgs (selenium) TTTS1015 0 to 0.5 ft bgs (mercury, nickel) 2 to 3 ft bgs (hexavalent chromium) TTTS1038 0 to 0.5 ft bgs (selenium) 3.5 to 4 ft bgs (lithium, nickel, selenium, vanadium, zinc) TTTS1039 0 to 0.5 ft bgs (selenium) 3.5 to 4 ft bgs (selenium) TTTS1042 at 0 to 0.5 ft bgs (boron)	TTBS66 at 0 to 0.5 ft bgs (nickel) TTBS67 at 0 to 0.5 ft bgs (boron, nickel) TTBS68 at 2 to 2.5 ft bgs (nickel) TTBS70 0 to 0.5 ft bgs (boron) 1.5 to 2 ft bgs (boron) 3 to 3.5 ft bgs (aluminum, boron) TTBS71 at 0 to 0.5 ft bgs (boron, mercury) TTTS1011 0 to 0.5 ft bgs (boron, copper, lithium, nickel) 19 to 19.5 ft bgs (aluminum, cobalt, copper, lithium, manganese, nickel, vanadium) TTTS1012 at 3.5 to 4 ft bgs (copper, lead, lithium, nickel, silver, zinc) TTTS1013 0 to 0.5 ft bgs (hexavalent chromium, mercury, nickel, vanadium) 2.5 to 3 ft bgs (barium, lithium, manganese, nickel) TTTS1004 0 to 0.5 ft bgs (boron, cadmium, copper, hexavalent chromium, lead, lithium, manganese, mercury, nickel) 2.5 to 3 ft bgs (boron, cadmium, hexavalent chromium, lithium, zirconium) TTTS1005 at 0 to 0.5 ft bgs (lithium) TTTS1007 at 0 to 0.5 ft bgs (copper) TTTS1008 at 12.5 to 13.5 ft bgs (nickel) TTTS1010 0 to 0.5 ft bgs (mercury, molybdenum, nickel) 15 to 15.5 ft bgs (aluminum, cobalt, copper, lithium, manganese, nickel, vanadium) TTTS1043 0 to 0.5 ft bgs (aluminum, nickel, hexavalent chromium) 16 to 16.5 ft bgs (aluminum, cobalt, copper, manganese, nickel, vanadium) TTTS1044 0 to 0.5 ft bgs (aluminum, barium, boron, copper, hexavalent chromium, lead, lithium, molybdenum, nickel), 8 to 8.5 ft bgs (aluminum, cobalt, copper, lithium, manganese, nickel, vanadium) 17 to 17.5 ft bgs (aluminum, cobalt, copper, manganese, nickel, selenium, vanadium) The lateral extent of metals in the central area of the Are I Burn Pit RFI Site is generally defined by surrounding samples with results below RBSLs. Although the northern extent of selenium and zinc is not defined to their respective background concentrations near the northern SWMU 4.8 boundary (at CTBS1107 and SWBS1007, respectively), they were detected at concentrations only slightly above the background concentrations and are likely naturally occurring. **Additional characterization is recommended to define the extent of hexavalent chromium north of SWBS1007.** Discussion of results is presented in Section D.3.4.2.5. Data are presented in Table D.3-3A and Figure D.3-5, and analytical results are presented in Figures D.3-11A through D.3-11I.		

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	**Chemical Use Area Name**[1] (see Section 2 texts and tables for Site History)	**Potential Chemicals Used/Stored**	**Sampling Scope and Rationale** (see Figures D.2-2A through 2-2F for sampling locations)	**Sampling Results** Chemical Concentrations detected greater than background and/or risk screening levels?	**Chemical Use Area sufficiently evaluated for risk assessment?**	**Is delineation sufficient to estimate soil volume in CMS**[2]**?** (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	Perchlorate	Chemical uses included perchlorate. Screen for perchlorate to further characterize the extent. Soil samples were collected at 92 locations: 1 location inside Concrete Pond 1 1 location inside Concrete Pond 3 1 location inside Concrete Pad 1 1 location inside Concrete Pad 2 (TTF) 2 locations inside and adjacent to Burn Pit 1 2 locations inside and adjacent to Burn Pit 2 (TTF) 14 locations inside 1982 Excavation Areas 1 through 6 ~7 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	Perchlorate was detected above ecological RBSLs in 47 samples: TTBS1024 0 to 0.5 ft bgs 4 to 5 ft bgs 5 to 6 ft bgs TTBS1025 0 to 0.5 ft bgs 4 to 4.5 ft bgs TTBS1026 4 to 5 ft bgs 7 to 7.5 ft bgs TTBS1040 0 to 0.5 ft bgs 3.5 to 4 ft bgs TTBS1042 1 to 1.5 ft bgs TTBS1045 0 to 0.5 ft bgs TTBS1050 0 to 0.5 ft bgs 4 to 5 ft bgs 11 to 12 ft bgs TTBS1051 0 to 0.5 ft bgs TTBS1057 0 to 0.5 ft bgs 4 to 5 ft bgs 9 to 10 ft bgs TTBS1059 0 to 0.5 ft bgs 2.3 to 2.8 ft bgs TTBS1091 0 to 0.5 ft bgs 4.8 to 5.3 ft bgs TTBS1097 0 to 0.5 ft bgs 4 to 5 ft bgs 8 to 9 ft bgs TTBS1098 0 to 0.5 ft bgs 3.3 to 3.8 ft bgs TTBS1109 0 to 0.5 ft bgs 4 to 5 ft bgs TTBS1117 0 to 0.5 ft bgs TTBS1149 0 to 0.5 ft bgs 1.75 to 2.75 ft bgs TTBS1179 0 to 0.5 ft bgs TTBS1206 0 to 0.5 ft bgs 4 to 5 ft bgs TTTS1008 0 to 0.5 ft bgs 12.5 to 13.5 ft bgs TTTS1009 0 to 0.5 ft bgs 11 to 12 ft bgs TTTS1010 0 to 0.5 ft bgs TTTS1011 19 to 19.5 ft bgs TTBS1060 0 to 0.5 ft bgs 1.5 to 2 ft bgs TTBS1073 0 to 0.5 ft bgs 4 to 5 ft bgs 10.25 to 11.25 ft bgs TTBS1074 0 to 0.5 ft bgs TTBS1075 0 to 0.5 ft bgs 4 to 5 ft bgs 10 to 11 ft bgs TTBS1081 0 to 0.5 ft bgs 2.8 to 3.8 ft bgs TTBS1084 3.5 to 4.5 ft bgs TTBS1090 0 to 0.5 ft bgs 4 to 5 ft bgs 9.5 to 10.5 ft bgs TTTS1004 0 to 0.5 ft bgs 2.5 to 3 ft bgs 3 to 4 ft bgs TTLS24 0.5 to 1 ft bgs TTLS26 0 to 0.5 ft bgs TTLS19 0 to 0.5 ft bgs TTTS1012 0 to 0.5 ft bgs TTTS1013 0 to 0.5 ft bgs 2.5 to 3 ft bgs TTTS1014 0 to 0.5 ft bgs 2 to 2.5 ft bgs TTTS1016 0 to 0.5 ft bgs TTTS1043 0 to 0.5 ft bgs 16 to 16.5 ft bgs TTTS1044 0 to 0.5 ft bgs TTTS1027 0 to 0.5 ft bgs TTTS1005 0 to 0.5 ft bgs 5.8 to 6.8 ft bgs TTTS1042 0 to 0.5 ft bgs TTTS1006 8.2 to 9.2 ft bgs TTTS1015 0 to 0.5 ft bgs TTLS17 0 to 0.5 ft bgs TTTS1007 0 to 0.5 ft bgs TTBS1036 6.4 to 7.4 ft bgs **Perchlorate was detected above RBSLs in four general areas:** ***Former Fire Demonstration Area 4:*** The lateral extent of perchlorate in this area is defined by 8 surrounding samples with no detectable perchlorate. ***1982 Excavation 4:*** The lateral extent of perchlorate in this area is defined by approximately 10 surrounding samples with no detectable perchlorate.	**Yes.** The extent of perchlorate impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	Perchlorate		***Thermal Treatment Facility (including Burn Pits 1 and 2, Concrete Pads/Ponds, and Earth Pond 3):*** The lateral extent of perchlorate in this area is defined by approximately 22 surrounding samples with no detectable perchlorate. **Additional characterization is recommended to define the lateral extent of perchlorate north of TTBS1117, north and east of TTBS1060, and east of Earth Pond 3.** Discussion of results is presented in Section D.3.4.2.5. Data are presented in Tables D.3-3A and 3-3C and Figure D.3-8A through D.3-8C, and analytical results are presented in Figures D.3-13A through D.3-13I.		
		Dioxins, Furans	Chemical uses included dioxins. Screen for dioxins to evaluate potential presence. Soil samples were collected at 100 locations: 1 location inside Concrete Pond 1 1 location inside Concrete Pond 3 1 location inside Concrete Pad 1 1 location inside Concrete Pad 2 (TTF) 2 locations inside and adjacent to Burn Pit 1 2 locations inside and adjacent to Burn Pit 2 (TTF) ~ 17 locations inside 1982 Excavation Areas 1 through 6 ~12 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	Dioxins were detected above their respective background concentrations and residential and/or ecological RBSLs in 40 samples. TTBS1029 at 7 to 8 ft bgs TTBS1031 at 10 to 11 ft bgs TTBS1035 0 to 0.5 ft bgs 8.5 to 9.5 ft bgs TTBS1037 at 4 to 5 ft bgs TTBS1038 at 4 to 5 ft bgs TTBS1039 at 0 ft bgs TTBS1040 0 to 0.5 ft bgs 3.5 to 4 ft bgs TTBS1051 at 4.5 to 5 ft bgs TTBS1060 at 1.5 to 2 ft bgs TTBS1073 at 0 to 0.5 ft bgs TTBS1075 at 0 to 0.5 ft bgs TTBS1084 at 0 to 0.5 ft bgs TTBS1090 0 to 0.5 ft bgs 4 to 5 ft bgs 9.5 to 10.5 ft bgs TTBS1091 at 0 to 0.5 ft bgs TTBS1098 at 0 to 0.5 ft bgs TTBS1110 at 0 to 0.5 ft bgs TTBS1118 at 0 to 0.5 ft bgs TTBS1149 at 1.75 to 2.75 ft bgs TTBS1179 0 to 0.5 ft bgs 4 to 5 ft bgs 5 to 6 ft bgs TTBS17 at 0 to 0.5 ft bgs TTBS24 at 0.5 to 1 ft bgs TTBS52 at 0 to 0.5 ft bgs TTBS53 at 0 to 0.5 ft bgs TTBS66 at 0 to 0.5 ft bgs TTBS67 at 0 to 0.5 ft bgs TTTS1004 0 to 0.5 ft bgs 2.5 to 3 ft bgs TTTS1009 at 0 to 0.5 ft bgs TTTS1010 at 0 to 0.5 ft bgs TTTS1011 at 0 to 0.5 ft bgs TTTS1012 at 3.5 to 4 ft bgs TTTS1013 0 to 0.5 ft bgs 2.5 to 3 ft bgs TTTS1044 at 0 to 0.5 ft bgs ***Former Fire Department Demonstration Area 4:*** The lateral extent of dioxins in this area generally is defined by surrounding samples with results below RBSLs. ***Concrete Pond 2, Concrete Pond 3, and Earth Pond 3 (including 1982 excavation 5):*** The lateral extent of dioxins in the Concrete Pond 2 and Earth Pond 3 area is defined by approximately 18 surrounding samples with results below RBSLs. ***Burn Pit 1, Burn Pit 2, Concrete Pond 1, Concrete Pad 2 (including 1982 excavations 1 through 4 and northern SWMU 4.8 boundary area):*** The lateral extent of dioxins in this area is generally defined to the west, south, and east by approximately 17 surrounding soil samples with results below RBSLs. **Further characterization of dioxins is recommended north of TTBS1118 in the northern SWMU 4.8 boundary area.** Discussion of results is presented in Section D.3.4.2.6. Data are presented in Table D.3-3A and Figures D.3-6A through D.3-6C, and analytical results are presented in Figures D.3-14A through D.3-14F.	**Yes.** The extent of dioxins impacts is adequately defined for risk assessment.	**Yes.**
		Energetics	Screen for energetics to evaluate potential presence. Soil samples were collected at 200 locations: 2 locations inside Concrete Pond 1 3 locations inside Concrete Pond 3 1 location inside Concrete Pad 1 4 locations inside Concrete Pad 2 (TTF) ~8 locations inside and adjacent to Burn Pit 1 ~8 locations inside and adjacent to Burn Pit 2 (TTF) ~ 20 locations inside 1982 Excavation Areas 1 through 6 ~12 locations in downslope drainages Remaining locations at former buildings, potential former burn pits, and potential drum and equipment storage areas identified in aerial photographs/historical documents.	Energetics were detected but did not exceed their respective RBSLs. Further characterization of energetics is not recommended in this area. Discussion of results is presented in Section D.3.4.2.7. Data are presented in Table D.3-3A and Figures D.3-7A through D.3-7C, and analytical results are presented in Figures D.3-15A through D.3-15C.	**Yes.** The extent of energetics impacts is adequately defined for risk assessment.	**N/A**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	**Chemical Use Area Name**[1] (see Section 2 texts and tables for Site History)	**Potential Chemicals Used/Stored**	**Sampling Scope and Rationale** (see Figures D.2-2A through 2-2F for sampling locations)	**Sampling Results** Chemical Concentrations detected greater than background and/or risk screening levels?	**Chemical Use Area sufficiently evaluated for risk assessment?**	**Is delineation sufficient to estimate soil volume in CMS**[2]**?** (see Figure D.5-1 for CMS areas)
2	Area I Burn Pit RFI Site - Central Area: TTF, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	Herbicides	Screen for herbicides to evaluate potential presence. Soil samples were collected at 4 locations (all were adjacent to Burn Pit 1).	Herbicides were detected but did not exceed their respective RBSLs. Further characterization of herbicides is not recommended in this area. Discussion of results is presented in Section D.3.4.2.8. Data are presented in Table D.3-3A and analytical results are presented in Figures D.3-15A through D.3-15C.	**Yes.** The extent of herbicide impacts is adequately defined for risk assessment.	**N/A**
		Pesticides	Screen for pesticides to evaluate potential presence. Soil samples were collected at 53 locations.	Pesticides were detected above their respective residential and/or ecological RBSLs in 10 samples. TTBS1032 at 4 to 5 ft bgs (4,4'-DDT) TTBS1035 at 8.5 to 9.5 ft bgs (4,4'-DDT) TTBS1036 at 6.4 to 7.4 ft bgs (4,4'-DDT) TTBS1037 at 4 to 5 ft bgs (4,4'-DDT) TTBS1090 0 to 0.5 ft bgs (Heptachlor epoxide) 4 to 5 ft bgs (Heptachlor epoxide) TTBS1149 at 1.75 to 2.75 ft bgs (4,4'-DDE, 4,4'-DDT) TTTS1013 at 0 to 0.5 ft bgs (4,4'-DDT) TTTS1015 at 0 to 0.5 ft bgs (4,4'-DDT) TTTS1044 at 0 to 0.5 ft bgs (4,4'-DDE, 4,4'-DDT, Endrin) ***1982 Excavation 4:*** The lateral extent of pesticides in this area is defined by surrounding samples with results below RBSLs. ***Concrete Pond 2 and Earth Pond 3:*** The lateral extent of pesticides in this area is defined by surrounding samples with results below RBSLs. Further characterization of pesticides is not recommended in this area. Discussion of results is presented in Section D.3.4.2.9. Data are presented in Table D.3-3A,and analytical results are presented in Figures D.3-15A through D.3-15C.	**Yes.** The extent of pesticide impacts is adequately defined for risk assessment.	**Yes.**
3	Area I Burn Pit RFI Site - Eastern Area: Eastern hummocky area north of Perimeter Pond	VOCs	Chemical uses included VOCs. No prior sampling had been performed. Screen for VOCs to evaluate potential presence. Soil Vapor: Samples were collected at 4 locations in the far east of the hummocky area at several potential drum and equipment storage areas identified during the document review. Soil vapor sampling was also attempted at 6 additional locations. However, no soil vapor samples could be collected due to the presence of shallow bedrock. Soil Matrix: Samples were collected at 41 locations: ~8 locations at the potential former burn pit identified in aerial photographs (and 5 locations down slope) ~9 locations in the drainage from CTL-V RFI Site and the TTF Control Center area ~15 locations at potential former drum and equipment storage areas ~ 12 locations down slope of the Eastern Hummocky Area (in the Perimeter Pond stormwater bypass)	Soil Vapor: No VOCs were detected in the samples. Soil Matrix: VOCs were detected but did not exceed their respective RBSLs. Formaldehyde was analyzed to evaluate potential hydrazine impacts and was detected at the following features at concentrations below RBSLs: Potential former burn pit identified in historical documents located in the southern portion of the eastern drainage from CTL-V RFI Site Two potential former drum and equipment storage areas identified in aerial photographs located in the southern portion of the eastern drainage from CTL-V RFI Site Former storage tank located in the far eastern portion of the Eastern Hummocky Area Two potential former drum and equipment storage areas identified in aerial photographs located in the southern and central portion of the Eastern Hummocky Area near the road to the southern portion of the CTL-III RFI Site Potential former drum and equipment storage area identified in aerial photographs located in the far eastern portion of the Eastern Hummocky Area east of the road to the southern portion of the CTL-III RFI Site Further characterization of VOCs is not recommended in the eastern hummocky area. Discussion of results is presented in Section D.3.4.2.1. Data are presented in Tables D.3-3A and D.3-3B and Figure D.3-2, and analytical results are presented in Figures D.3-9A through D.3-9J.	**Yes.** The extent of VOC impacts is adequately defined for risk assessment.	**N/A**
		SVOCs	Chemical uses included SVOCs. No prior sampling had occurred to evaluate SVOCs for potential presence. Soil samples were collected at 42 locations: ~8 locations at the potential former burn pit identified in aerial photographs (and 5 locations down slope)	SVOCs were detected above their respective residential and/or ecological RBSLs in 6 samples. TTBS1126 at 0 to 0.5 ft bgs (benzo(a)pyrene) TTBS1131 at 0 to 0.5 ft bgs (benzo(a)pyrene) TTBS1161 at 0 to 0.5 ft bgs (bis(2-Ethylhexyl) phthalate) TTBS1192 at 0.5 to 1 ft bgs (bis(2-Ethylhexyl) phthalate) TTTS1034 at 0 to 0.5 ft bgs (benzo(a)pyrene) TTTS1035 at 0 to 0.5 ft bgs (benzo(a)pyrene)	**Yes.** The extent of SVOC impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
3	Area I Burn Pit RFI Site - Eastern Area: Eastern hummocky area north of Perimeter Pond	SVOCs	~9 locations in the drainage from CTL-V RFI Site and the TTF Control Center area ~15 locations at potential former drum and equipment storage areas ~ 12 locations down slope of the Eastern Hummocky Area (in the Perimeter Pond stormwater bypass)	***Eastern Hummocky Area:*** The lateral extent of SVOCs in this area is generally defined to the north, south, east, and west by samples with results below RBSLs or with no detectable SVOCs. Soil samples collected down slope of the eastern hummocky area in the Perimeter Pond spillway did not contain detectable concentrations of SVOCs. NDMA was analyzed to evaluate potential hydrazine impacts and was detected at 1 location in the southern-central portion of the Eastern Hummocky Area at concentrations below RBSLs. Further characterization of SVOCs is not recommended in this area. Discussion of results is presented in Section D.3.4.2.2. Data are presented in Table D.3-3A and Figure D.3-2, and analytical results are presented in Figures D.3-10A through D.3-10M.		
		TPH	Chemical uses included TPH. No prior sampling had occurred to evaluate TPH for potential presence. Soil samples were collected at 45 locations: ~8 locations at the potential former burn pit identified in aerial photographs (and 5 locations down slope) ~9 locations in the drainage from CTL-V RFI Site and the TTF Control Center area ~15 locations at potential former drum and equipment storage areas ~ 12 locations down slope of the Eastern Hummocky Area (in the Perimeter Pond stormwater bypass)	TPH was detected above residential RBSLs in 17 samples. TTBS1126 0 to 0.5 ft bgs (C8-C11 [Jet Fuel Range]) 3 to 4 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1128 0 to 0.5 ft bgs (C8-C11 [Jet Fuel Range]) 4 to 5 ft bgs (C8-C11 [Jet Fuel Range]) 9.3 to 10.3 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1129 0 to 0.5 ft bgs (C8-C11 [Jet Fuel Range]) 3 to 4 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1174 0.5 to 1 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1132 0 to 0.5 ft bgs (C8-C11 [Jet Fuel Range]) 4 to 5 ft bgs (C8-C11 [Jet Fuel Range]) 5 to 6 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1161 0 to 0.5 ft bgs (C8-C11 [Jet Fuel Range]) 2.5 to 3.5 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1173 at 0.5 to 1 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1192 at 0.5 to 1 ft bgs (C8-C11 [Jet Fuel Range]) TTBS1210 0.5 to 1 ft bgs (C8-C11 [Jet Fuel Range]) 2.5 to 3 ft bgs (C8-C11 [Jet Fuel Range])	**Yes.** The extent of TPH impacts is adequately defined for risk assessment.	**N/A**
		TPH		***Eastern Hummocky Area:*** The lateral extent of TPH in this area is generally defined to the west, north, east, and south/southeast by samples with results below RBSLs. Although the lateral extent of TPH is not defined to the north of the northernmost exceedance (TTBS1129), the detected concentration (2.2 mg/kg) is not significantly above the RBSL (1.4 mg/kg) and benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected, indicating that hydrocarbon impacts to soil are limited. Further characterization of TPH is not recommended in this area. Discussion of results is presented in Section D.3.4.2.3. Data are presented in Table D.3-3A and Figure D.3-3, and analytical results are presented in Figures D.3-11A through D.3-11F.		
		PCBs	Chemical uses included PCBs. No prior sampling had occurred to evaluate PCBs for potential presence. Soil samples were collected at 44 locations: ~8 locations at the potential former burn pit identified in aerial photographs (and 5 locations down slope) ~9 locations in the drainage from CTL-V RFI Site and the TTF Control Center area ~15 locations at potential former drum and equipment storage areas ~ 12 locations down slope of the Eastern Hummocky Area (in the Perimeter Pond stormwater bypass)	PCBs were detected above their respective residential and/or ecological RBSLs in 7 samples. TTBS1125 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1127 at 2.5 to 3 ft bgs (Aroclor 1254) TTBS1129 at 0 to 0.5 ft bgs (Aroclor 1254) TTBS1130 0 to 0.5 ft bgs (Aroclor 1254, Aroclor 1260) 1.5 to 2 ft bgs (Aroclor 1254) TTBS1192 at 0.5 to 1 ft bgs (Aroclor 1254) TTTS1031 at 0 to 0.5 ft bgs (Aroclor 1254) ***Eastern Hummocky Area:*** The lateral extent of PCBs in the eastern hummocky area is generally defined to the east, west, and south by over a dozen samples with results below RBSLs or with no detectable PCBs. While the lateral extent of PCB impacts are not defined north of TTBS1129, north is the upslope direction. Downslope samples had results below RBSLs. Further characterization of PCBs is not recommended in this area. Discussion of results is presented in Section D.3.4.2.4. Data are presented in Table D.3-3A and Figure D.3-4, and analytical results are presented in Figures D.3-11A through D.3-11F.	**Yes.** The extent of PCB impacts is adequately defined for risk assessment.	**Yes.**

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	**Chemical Use Area Name**[1] (see Section 2 texts and tables for Site History)	**Potential Chemicals Used/Stored**	**Sampling Scope and Rationale** (see Figures D.2-2A through 2-2F for sampling locations)	**Sampling Results** Chemical Concentrations detected greater than background and/or risk screening levels?	**Chemical Use Area sufficiently evaluated for risk assessment?**	**Is delineation sufficient to estimate soil volume in CMS**[2]**?** (see Figure D.5-1 for CMS areas)
3	Area I Burn Pit RFI Site - Eastern Area: Eastern hummocky area north of Perimeter Pond	Metals	Chemical uses included metals. No prior sampling had been performed. Screen for metals to evaluate potential presence. Soil samples were collected at 42 locations: ~8 locations at the potential former burn pit identified in aerial photographs (and 5 locations down slope) ~9 locations in the drainage from CTL-V RFI Site and the TTF Control Center area ~15 locations at potential former drum and equipment storage areas ~ 12 locations down slope of the Eastern Hummocky Area (in the Perimeter Pond stormwater bypass)	Metals were detected above background and residential and/or ecological RBSLs in 31 samples. CTBS1017 at 0 to 1 ft bgs (lead, nickel, zinc) PPBS1039 at 0 to 1 ft bgs (selenium) TTBS1125 at 0 to 0.5 ft bgs (cadmium, hexavalent chromium) TTBS1126 0 to 0.5 ft bgs (cadmium) 3 to 4 ft bgs (selenium) TTBS1129 at 0 to 0.5 ft bgs (copper) TTBS1130 at 0 to 0.5 ft bgs (cadmium, lead) TTBS1131 at 0 to 0.5 f bgs (selenium) TTBS1133 at 2 to 3 ft bgs (selenium) TTBS1135 0 to 0.5 ft bgs (selenium) 1.2 to 2.2 ft bgs (lithium, vanadium) TTBS1157 0 to 0.5 ft bgs (nickel) 4 to 5 ft bgs (aluminum, cobalt, copper, manganese, nickel, vanadium) 9 to 10 ft bgs (aluminum, cobalt, copper, nickel, vanadium) TTBS1158 at 0 to 0.5 ft bgs (selenium) TTBS1159 at 0 to 0.5 ft bgs (manganese) TTBS1161 at 0 to 0.5 ft bgs (selenium) TTBS1162 0 to 0.5 ft bgs (mercury, selenium) 1.8 to 2.8 ft bgs (mercury, selenium) TTBS1192 at 0.5 to 1 foot bgs (silver) TTTS1032 0 to 0.5 ft bgs (manganese, selenium) 1.5 to 2 ft bgs (selenium) TTTS1033 at 2.5 to 3 ft bgs (aluminum, copper, lithium, selenium) TTTS1036 at 4 to 5 ft bgs (selenium) TTTS1037 0 to 0.5 ft bgs (hexavalent chromium, selenium) 2 to 2.5 ft bgs (selenium) TTTS1040 0 to 0.5 ft bgs (selenium) 4.5 to 5 ft bgs (selenium) TTTS1041 0 to 0.5 ft bgs (selenium, silver) 2 to 2.5 ft bgs (selenium)	**Yes.** The extent of metals impacts is adequately definedfor risk assessment.	**N/A**
		Metals		***Eastern Hummocky Area:*** The lateral extent of metals in this area is generally defined by surrounding and down slope samples with results below RBSLs. Although the northern extent of nickel is not defined to its background concentration near the northern SWMU 4.8 boundary (at TTBS1129), it was detected at a concentration only slightly above its background concentration and is likely naturally occurring. Further characterization of metals is not recommended in this area. Discussion of results is presented in Section D.3.4.2.5. Data are presented in Table D.3-3A and Figure D.3-5, and analytical results are presented in Figures D.3-11A through D.3-11I.		

Appendix D – Table D.3-2A
Evaluation of Soil and Soil Vapor Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Area of Evaluation[1]	Chemical Use Area Name[1] (see Section 2 texts and tables for Site History)	Potential Chemicals Used/Stored	Sampling Scope and Rationale (see Figures D.2-2A through 2-2F for sampling locations)	Sampling Results Chemical Concentrations detected greater than background and/or risk screening levels?	Chemical Use Area sufficiently evaluated for risk assessment?	Is delineation sufficient to estimate soil volume in CMS[2]? (see Figure D.5-1 for CMS areas)
3	Area I Burn Pit RFI Site - Eastern Area: Eastern hummocky area north of Perimeter Pond	Perchlorate	Chemical uses included perchlorate. No prior sampling had been performed. Screen for perchlorate to evaluate potential presence. Soil samples were collected at 12 locations: ~6 locations at potential former drum and equipment storage areas 3 locations at a potential former burn pit (and 3 locations down slope of the burn pit)	Perchlorate was detected above the ecological RBSL in 7 samples. TTBS1121 at 0 to 0.5 ft bgs and 0.5 to 1.5 ft bgs TTBS1130 at 1.5 to 2 ft bgs TTBS1159 at 0 to 0.5 ft bgs and 0.5 to 1 ft bgs TTBS1210 at 0.5 to 1 ft bgs TTTS1036 at 4 to 5 ft bgs ***Eastern Hummocky Area:*** Along the drainage extending to Perimeter Pond on the western side of the eastern hummocky area, the lateral extent of perchlorate is defined to the west, northeast, ar east by samples with no detectable perchlorate. In the eastern and central portions of the eastern hummocky area, the lateral extent of perchlorate is defined to the east, west and south by samples with no detectable perchlorate. **Additional characterization is recommended in the eastern hummocky area to define the extent of perchlorate northwest and southeast of TTBS1210, TTBS1159, and TTBS1121 (along the drainage) and north of TTTS1036 and TTBS1130.** Discussion of results is presented in Section D.3.4.2.5. Data are presented in Tables D.3-3A and 3-3C and Figure D.3-8A through D.3-8C, and analytical results are presented in Figures D.3-13A through D.3-13I.	**Yes.** The extent of perchlorate impacts is adequately defined for risk assessment.	**Yes.**
		Dioxins, Furans	Chemical uses included dioxins. No prior sampling had been performed. Screen for dioxins to evaluate potential presence. Soil samples were collected at 12 locations: ~6 locations at potential former drum and equipment storage areas 3 locations at a potential former burn pit (and 3 locations down slope of the burn pit)	Dioxins were detected but did not exceed their respective background concentrations and RBSLs. Further characterization of dioxins is not recommended in this area. Discussion of results is presented in Section D.3.4.2.6. Data are presented in Table D.3-3A and Figures D.3-6A through D.3-6C, and analytical results are presented in Figures D.3-14A through D.3-14F.	**Yes.** The extent of dioxins impacts is adequately defined for risk assessment.	**N/A**
		Energetics	Chemical uses included energetics. No prior sampling had been performed. Screen for energetics to evaluate potential presence. Soil samples were collected at 41 locations: ~8 locations at the potential former burn pit identified in aerial photographs (and 5-6 locations down slope) ~10 locations in the drainage from CTL-V RFI Site and the TTF Control Center area ~15 locations at potential former drum and equipment storage areas ~12 locations down slope of the Eastern Hummocky Area (in the Perimeter Pond stormwater bypass)	No energetics were detected in the samples. Further characterization of energetics is not recommended in this area. Discussion of results is presented in Section D.3.4.2.7. Data are presented in Table D.3-3A and Figures D.3-7A through D.3-7C, and analytical results are presented in Figures D.3-15A through D.3-15C.	**Yes.** The extent of energetics impacts is adequately defined for risk assessment.	**N/A**
		Pesticides	Chemical uses included pesticides. No prior sampling had been performed. Screen for pesticides to evaluate potential presence. Soil samples were collected at 30 locations: 2 locations at the potential former burn pit identified in aerial photographs Remaining locations at potential drum and equipment storage areas	Pesticides were detected but did not exceed their respective RBSLs. Further characterization of pesticides is not recommended in this area. Discussion of results is presented in Section D.3.4.2.9. Data are presented in Table D.3-3A, and analytical results are presented in Figures D.3-15A through D.3-15C.	**Yes.** The extent of pesticide impacts is adequately defined for risk assessment.	**N/A**

Notes:
1. To assist with data evaluation, the Area I Burn Pit RFI Site was divided into the following three areas, each of which includes their associated down slope drainages and migration pathways (note that the boundaries for these areas are drawn to facilitate data evaluation and are not intended to indicate separate chemical use areas):

(1) Earth Ponds 1 and 2, including the Western Hummocky Area and three geophysical anomalies near Earth Pond 2. The easternmost boundary of this area is the western edge of Explosive Shed 1. This area includes the drainage west of the western SWMU 4.8 boundary and all down drainage locations through and including TTSS03.

(2) Central Area I Burn Pit, including the interim status facility/TTF, 1982 Excavation Areas 1 through 6, geophysical anomalies (excluding those at Earth Pond 2), Burn Pits 1 and 2, Concrete Ponds 2 and 3 and Earth Pond 3. The easternmost boundary of this area is the western edge of the eastern drainage separating the central burn pit area from the Eastern Hummocky Area, and the western edge of locations TTBS1208 and TTBS1163. This area includes Debris Area 1037, the drainage from Perimeter Pond and Outfall 011, all down drainage locations through and including TTSS01.

(3) Eastern Hummocky Area located north and west of Perimeter Pond.

2. N/A – There is no need to estimate a CMS soil volume for the specific Chemical Use Area and chemical group combination indicated

Appendix D – Table D.3-2B
Evaluation of Groundwater Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Analytical Group	Site Soil Impacts (Summary of relevant impacts)	Monitored in Groundwater?	Constituent detected in groundwater? (Above screening criteria?)	Site related?	Groundwater characterized sufficiently for risk assessment?
VOCs	VOCs were detected above residential and ecological RBSLs throughout the Area I Burn Pit RFI Site.	**NSGW - Yes.** VOCs were monitored at 2 locations (RS-06, RS-07). **CFOU Groundwater - Yes.** VOCs were monitored at 1 location (RD-03).	**NSGW - Yes.** Trans-1,2-DCE, TCE, and Vinyl Chloride were detected at concentrations above groundwater screening levels. **CFOU Groundwater- Yes.** Cis-1,2-DCE, TCE, and Vinyl Chloride were detected at concentrations above groundwater screening levels.	**Likely.** VOCs detected in NSGW and CFOU groundwater are likely associated with previous releases at the Area I Burn Pit RFI Site.	**NSGW - Yes** **CFOU Groundwater** [1]
SVOCs	SVOCs were detected above residential and ecological RBSLs throughout the Area I Burn Pit RFI Site.	**NSGW - Yes.** SVOCs were monitored at 2 locations (RS-06, RS-07). **CFOU Groundwater - Yes.** SVOCs were monitored at 1 location (RD-03).	**NSGW - Yes.** 2-n-Butoxyethanol is the only SVOC that was detected. **CFOU Groundwater- No.** SVOCs were not detected in any groundwater samples.	**Unlikely.**	**NSGW - Yes** **CFOU Groundwater** [1]
TPH	TPH were detected above residential RBSLs near Earth Ponds 1, 2, and 3, Concrete Pond 2, and the eastern hummocky area.	**NSGW - No** **CFOU Groundwater- No.**	**N/A**	**Unknown.**	**NSGW - Yes** **CFOU Groundwater** [1]
PCBs	PCBs were detected above residential and ecological RBSLs throughout the Area I Burn Pit RFI Site.	**NSGW - No** **CFOU Groundwater- No.**	**N/A**	**Unlikely.** While PCBs have not been monitored in groundwater at the site, it is unlikely that they would be detected in groundwater due to their high affinity for sorbing to soil.	**NSGW - Yes** **CFOU Groundwater** [1]
Metals	Metals were detected above background concentrations and/or RBSLs in soil samples collected throughout the Area I Burn Pit RFI Site.	**NSGW - Yes.** Metals were monitored at 2 locations (RS-06, RS-07). **CFOU Groundwater - Yes.** Metals were monitored at 1 location (RD-03).	**NSGW - Yes.** 4 dissolved metals were detected above groundwater screening levels (boron, magnesium, potassium, sodium). **CFOU Groundwater - Yes.** Manganese was detected above screening levels.	**Possibly.** Metals detected in soil above RBSLs were also detected in NSGW and CFOU groundwater above screening levels.	**NSGW - Yes** **CFOU Groundwater** [1]
Inorganics	Inorganics (including perchlorate) were detected above background concentrations and/or RBSLs in soil samples collected throughout the Area I Burn Pit RFI Site	**NSGW - Yes.** Inorganics were monitored at 2 locations (RS-06, RS-07). **CFOU Groundwater - Yes.** Inorganics were monitored at 1 location (RD-03).	**NSGW - Yes.** Chloride and sulfate were detected in groundwater samples above screening levels. **CFOU Groundwater - Yes.** No inorganic compounds exceeded screening levels.	**Possibly.** Chloride and sulfate detected in soil at the Area I Burn Pit RFI Site may have contributed to the concentrations of inorganics in NSGW above screening levels.	**NSGW - Yes** **CFOU Groundwater** [1]

Appendix D – Table D.3-2B
Evaluation of Groundwater Sampling Results
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Analytical Group	Site Soil Impacts (Summary of relevant impacts)	Monitored in Groundwater?	Constituent detected in groundwater? (Above screening criteria?)	Site related?	Groundwater characterized sufficiently for risk assessment?
Dioxins	Dioxins were detected above background and/or RBSLs in soil samples collected throughout the Area I Burn Pit RFI Site	**NSGW - No** **CFOU Groundwater- No.**	**N/A**	**Unlikely.** While dioxins have not been monitored in groundwater at the site, it is unlikely that they would be detected in groundwater due to their high affinity for sorbing to soil.	**NSGW - Yes** **CFOU Groundwater** [1]
Energetics	Energetics were detected at concentrations below RBSLs in the Concrete Pond 2 and Earth Pond 3 area.	**NSGW - Yes.** Energetics were monitored at 2 locations (RS-06, RS-07). **CFOU Groundwater - Yes.** Energetics were monitored at 1 location (RD-03).	**NSGW - No.** Energetics were not detected in any groundwater samples. **CFOU Groundwater- No.** Energetics were not detected in any groundwater samples.	**No.** Energetics were not detected in soil or groundwater samples.	**NSGW - Yes** **CFOU Groundwater** [1]

Notes:
1. Chatsworth Formation Groundwater (CFOU Groundwater) is discussed further in Appendix B and will be evaluated for risk assessment purposes in the CFOU RFI Report.
2. NSGW – Near Surface Groundwater

Appendix D – Table D.3-3A
Data Screening and Statistical Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels			Detect Data Summary						
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Background**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**	**Number of Detects > Background SL**
Dioxin_Furans											
1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/Kg	0.00069	0.0011	0.0000025	306	278	6.3E-08	0.0119	7	6	189
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	mg/Kg	0.00069	0.00096	0.000013	305	283	9.4E-08	0.151	28	23	182
1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/Kg	0.00069	0.00043	0.00000019	305	168	8.3E-08	0.00157	1	3	161
1,2,3,4,7,8-Hexachlorodibenzofuran	mg/Kg	0.000069	0.000047	0.00000073	306	218	8.1E-08	0.000735	8	11	152
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/Kg	0.000069	0.000045	0.00000034	305	180	6.8E-08	0.0035	9	11	154
1,2,3,6,7,8-Hexachlorodibenzofuran	mg/Kg	0.000069	0.000054	0.0000003	306	218	8.0E-08	0.000852	7	8	194
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/Kg	0.000069	0.00011	0.00000095	306	221	1.5E-07	0.00728	16	13	179
1,2,3,7,8,9-Hexachlorodibenzofuran	mg/Kg	0.000069	0.000043	0.00000043	305	123	8.2E-08	0.000212	3	4	89
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/Kg	0.000069	0.000044	0.0000011	306	217	1.2E-07	0.00474	15	17	151
1,2,3,7,8-Pentachlorodibenzofuran	mg/Kg	0.00023	0.00017	0.00000059	306	177	8.4E-08	0.000225		1	101
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/Kg	0.0000069	0.0000044	0.00000018	305	157	6.0E-08	0.00145	24	29	150
2,3,4,6,7,8-Hexachlorodibenzofuran	mg/Kg	0.000069	0.000049	0.00000045	306	211	2.6E-08	0.00108	8	9	170
2,3,4,7,8-Pentachlorodibenzofuran	mg/Kg	0.000023	0.000016	0.00000064	306	211	3.9E-08	0.000508	12	18	161
2,3,7,8-TCDD	mg/Kg	0.0000069	0.0000043	0.0000005	305	78	3.6E-08	0.0000961	6	7	42
2,3,7,8-Tetrachlorodibenzofuran	mg/Kg	0.000069	0.000043	0.0000018	306	206	1.3E-07	0.000119	2	3	59
DioxinFuran_TEQ_Bird	mg/Kg		0.000063		306	302	7.5E-11	0.004178209		16	
DioxinFuran_TEQ_Fish	mg/Kg				306	302	7.5E-11	0.00313508			
DioxinFuran_TEQ_Mammal	mg/Kg	0.0000069	0.0000043	0.00000087	306	302	2.2E-10	0.005347367	66	85	187
Heptachlorodibenzofurans	mg/Kg				296	270	6.3E-08	0.0505			
Heptachlorodibenzo-p-dioxins	mg/Kg				296	275	1.9E-07	0.258			
Hexachlorodibenzofurans	mg/Kg				296	254	7.7E-08	0.023			
Hexachlorodibenzo-p-dioxins	mg/Kg				296	247	1.1E-07	0.0399			
Octachlorodibenzofuran	mg/Kg	0.023	0.032	0.0000081	306	262	4.0E-07	0.0291	1		172
Octachlorodibenzo-p-dioxin	mg/Kg	0.023	0.039	0.00014	305	291	6.7E-07	0.819	14	9	173
Pentachlorodibenzofurans	mg/Kg				296	244	4.4E-08	0.00597			
Pentachlorodibenzo-p-dioxins	mg/Kg				296	209	7.9E-08	0.00421			
Tetrachlorodibenzofurans	mg/Kg				296	241	1.3E-07	0.00424			
Tetrachlorodibenzo-p-dioxins	mg/Kg				296	169	8.1E-08	0.00206			
Energetics											
1,3-Dinitrobenzene	mg/Kg				242						
2,4,6-Trinitrotoluene	mg/Kg				242	1	0.13	0.13			
2,4-diamino-6-nitrotoluene	mg/Kg				235						
2,4-Dinitrotoluene	mg/Kg				588						
2,6-diamino-4-nitrotoluene	mg/Kg				244						
2,6-Dinitrotoluene	mg/Kg				588						
2-Amino-4,6-Dinitrotoluene	mg/Kg	2.3	0.43		242	1	0.095	0.095			
2-Nitrotoluene	mg/Kg				242						
3-Nitrotoluene	mg/Kg				242						
4-Am-2,6-DNT	mg/Kg	2.3	0.43		242						
4-Nitrotoluene	mg/Kg				242						
HMX	mg/Kg	3100	64		242	10	0.12	0.564			
Nitrobenzene	mg/Kg	29	2		588						
Nitroglycerin	mg/Kg				244						
PETN	mg/Kg				242						
RDX	mg/Kg	6.9	43		242						
sym-Trinitrobenzene	mg/Kg				242						

Appendix D – Table D.3-3A
Data Screening and Statistical Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels			Detect Data Summary						
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Background**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**	**Number of Detects > Background SL**
Tetryl	mg/Kg		28		242						
General Chemistry											
Nitrogen, Organic	mg/Kg				523	520	6.41	2300			
Herbicide											
2,4,5-T	mg/Kg				4						
2,4,5-Trichlorophenoxypropionic acid	mg/Kg				4						
2,4-Dichlorophenoxyacetic Acid (2,4-D)	mg/Kg	686			4						
2,4-Dichlorophenoxybutyric acid	mg/Kg	549			4	1	0.015	0.015			
Dalapon	mg/Kg	2058			4						
Dicamba	mg/Kg				4						
Dichlorprop	mg/Kg				4						
Dinoseb	mg/Kg	69	0.59		4						
MCPA	mg/Kg				4						
MCPP	mg/Kg	69			4						
Hydrocarbons											
Petroleum Hydrocarbons	mg/Kg				56	22	6	6500			
Total Petroleum Hydrocarbons	mg/Kg				57						
Fuel Hydrocarbons, C7-C24, as heavy Hydrocarbons	mg/Kg				1	1	25	25			
C4-C12 (Gasoline Range)											
Gasoline Range Organics	mg/Kg	1.1			3						
Gasoline Range Organics (C5-C12)	mg/Kg	1.1			529	54	0.0134	840	13		
C8-C11 (Jet Fuel Range)											
Diesel Range Organics (C8-C11)	mg/Kg	1.1			559	31	1.34	1900	31		
Gasoline Range Organics (C8-C11)	mg/Kg	1.1			5						
C12-C14 (Kerosene Range)											
Diesel Range Organics (C12-C14)	mg/Kg	1,400			559	25	1.1	5100	4		
Kerosene (C12-C14)	mg/Kg	1,400			5						
C15-C20 (Diesel Range)											
Diesel Range Organics (C10-C24)	mg/Kg	1,400			1	1	18	18			
Diesel Range Organics (C15-C20)	mg/Kg	1,400			564	64	1.16	780			
Diesel Range Organics (C7-C28)	mg/Kg	1,400			1	1	4400	4400	1		
Fuel Hydrocarbons, C16-C28	mg/Kg	1,400			2	2	110	490			
Fuel Hydrocarbons, C12-C28	mg/Kg	1,400			2	2	8.2	20			
C21-C30 (Lubricant Oil Range)											
C21-C30 Lubricant	mg/Kg	1,400			5						
Diesel Range Organics (C21-C30)	mg/Kg	1,400			559	315	1	1300			
Inorganics											
% Solids	%				8	8	86	98			
% Solids	% wt				15	15	88.4	99.4			
Ammonia-N	mg/Kg				523	295	0.21	524			
Bromide	mg/Kg				531	20	0.63	28			
Chloride	mg/Kg				549	357	0.633	230			
Cyanides	mg/Kg	1,500	290		582	152	0.0727	14			
Fluoride	mg/Kg	4,600		6.7	606	530	0.08	76			47
Moisture	%				599	599	1.2	32.2			
Nitrate-N	mg/Kg				531	277	0.54	93			
Nitrate-NO3	mg/Kg				19	6	0.1	0.5			

Appendix D – Table D.3-3A
Data Screening and Statistical Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels			Detect Data Summary						
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Background**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**	**Number of Detects > Background SL**
Nitrite-N	mg/Kg				520	17	0.36	7.4			
Perchlorate	mg/kg	53	0.000024		280	95	0.00035	1.13		95	
pH	pH Units				578	578	3.6	9.69			
Phosphate	mg/Kg				520	144	0.57	41			
Sulfate	mg/Kg				549	367	1.12	1,100			
Total Kjeldahl nitrogen	mg/Kg				509	498	7.34	2,300			
Total Phosphorus	mg/Kg				559	549	0.6	2,630			
Metals											
Aluminum	mg/Kg	75,000	12	20,000	656	651	1	37,000		645	30
Antimony	mg/Kg	30	0.095	8.7	655	188	0.046	29		184	1
Arsenic	mg/Kg	0.095	1.9	15	673	666	0.005	21	655	599	3
Barium	mg/Kg	15,000	15	140	658	648	1	372		639	8
Beryllium	mg/Kg	150	5.1	1.1	675	665	0	1.8			26
Boron	mg/Kg	15,000	6.8	9.7	676	313	0.01	120		77	49
Cadmium	mg/Kg	78	0.021	1	681	658	0.03	21		658	66
Calcium	mg/Kg				525	524	580	102,000			
Chromium	mg/Kg	114,000	930	36.8	668	660	0.1	860			60
Cobalt	mg/Kg	23	8.9	21	646	646	0.96	57	22	89	24
Copper	mg/Kg	3,000	1.1	29	649	636	0.06	906		629	76
Hexavalent Chromium	mg/Kg	110	0.2		253	125	0.0262	1.8		23	
Iron	mg/Kg			28,000	571	571	0.16	84,800			48
Lead	mg/Kg	150	0.063	34	654	627	0.0001	320	1	626	22
Lithium	mg/Kg	152	10	37	590	590	6.6	174	3	585	41
Magnesium	mg/Kg				605	605	0.2	53,700			
Manganese	mg/Kg	9,500	72	495	534	534	62.1	1,600		533	34
Mercury	mg/Kg	23	0.1	0.09	686	523	0.0042	110	2	61	71
Molybdenum	mg/Kg	380	0.11	5.3	672	536	0.04	73		523	9
Nickel	mg/Kg	1,500	0.1	29	657	647	0.12	2,310	2	647	85
Potassium	mg/Kg			6,400	557	554	0.06	4,200			
Selenium	mg/Kg	380	0.17	0.655	684	258	0.14	5.1		253	87
Silicon	mg/Kg				19	9	10	67			
Silver	mg/Kg	380	0.54	0.79	676	473	0.021	15.6		32	18
Sodium	mg/Kg			110	555	440	46.2	2,700			220
Strontium	mg/Kg	45,650	1100		534	534	3	83.5			
Thallium	mg/Kg	4.9	2.9	0.46	657	415	0.026	1.1			10
Tin	mg/Kg	45,650	30		571	202	0.28	12			
Titanium	mg/Kg				552	542	1.1	2,600			
Vanadium	mg/Kg	369	1.5	62	655	653	4.4	140		653	30
Zinc	mg/Kg	23,000	21	110	654	653	0.02	1,420		635	28
Zirconium	mg/Kg		7.4	8.6	541	464	0.38	17		7	3
PCBs											
Aroclor 1016	mg/Kg	0.14	1.6		545						
Aroclor 1221	mg/Kg	0.14	1.6		545						
Aroclor 1232	mg/Kg	0.14	0.078		545						
Aroclor 1242	mg/Kg	0.14	0.079		545	9	0.0043	0.0547			
Aroclor 1248	mg/Kg	0.14	0.011		545	7	0.0316	3.08	2	7	
Aroclor 1254	mg/Kg	0.14	0.078		545	168	0.0016	8.9	49	65	

Appendix D – Table D.3-3A
Data Screening and Statistical Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels			Detect Data Summary						
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Background**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**	**Number of Detects > Background SL**
Aroclor 1260	mg/Kg	0.14	0.078		545	126	0.0019	1.04	7	14	
Aroclor 1262	mg/Kg	0.14	0.078		1						
Aroclor 1268	mg/Kg	0.14	0.078		1						
Pesticides											
4,4'-DDD	mg/Kg	3.6	0.012		248	7	0.00101	0.005			
4,4'-DDE	mg/Kg	2.5	0.012		248	65	0.00024	0.096		5	
4,4'-DDT	mg/Kg	2.5	0.012		248	76	0.0005	0.19		8	
Aldrin	mg/Kg	0.05	0.43		248	2	0.00047	0.0017			
alpha-BHC	mg/Kg	0.32	0.21		248	7	0.00029	0.00084			
beta-BHC	mg/Kg	0.57	0.21		248	4	0.00024	0.0043			
Chlordane	mg/Kg				248						
delta-BHC	mg/Kg				248	5	0.00018	0.0015			
Dieldrin	mg/Kg	0.054	0.085		248	8	0.00055	0.00853			
Endosulfan I	mg/Kg	412	0.64		248	1	0.0066	0.0066			
Endosulfan II	mg/Kg	412	0.64		248	1	0.0048	0.0048			
Endosulfan sulfate	mg/Kg	412	0.64		248	1	0.0071	0.0071			
Endrin	mg/Kg	21	0.044		248	3	0.00055	0.11		1	
Endrin aldehyde	mg/Kg				248	2	0.0015	0.00216			
Endrin ketone	mg/Kg				248	3	0.0003	0.0015			
gamma-BHC	mg/Kg	0.8	0.21		248	6	0.00019	0.0041			
Heptachlor	mg/Kg	0.21	0.56		248	3	0.00031	0.00035			
Heptachlor epoxide	mg/Kg	0.16	0.0053		248	24	0.00028	0.03		2	
Mirex	mg/Kg				248	6	0.00034	0.012			
p,p'-Methoxychlor	mg/Kg	343	11		248						
Toxaphene	mg/Kg	0.71	34		248						
SVOC											
1,2,4-Trichlorobenzene	mg/Kg	0.14	20		604	5	0.000337	0.062			
1,2-Dichlorobenzene	mg/Kg	1.8	370		610	12	0.000364	460	2	1	
1,2-Diphenylhydrazine	mg/Kg				586						
1,3-Dichlorobenzene	mg/Kg	1.7	160		610	6	0.0013	1.3			
1,4-Dichlorobenzene	mg/Kg	0.006	20		610	10	0.000466	8.2	6		
1-Methyl naphthalene	mg/Kg	25	210		542	23	0.00028	0.79			
2,4,5-Trichlorophenol	mg/Kg	5700	9		586						
2,4,6-Trichlorophenol	mg/Kg	10	10		605						
2,4-Dichlorophenol	mg/Kg	170	1.3		605						
2,4-Dimethylphenol	mg/Kg	1100	110		605	3	0.59	2			
2,4-Dinitrophenol	mg/Kg	110	0.59		586						
2-Bromophenol	mg/Kg				19						
2-Chloronaphthalene	mg/Kg	4600	530		586						
2-Chlorophenol	mg/Kg	290	21		605						
2-Methylnaphthalene	mg/Kg	230	210		599	39	0.00033	1.1			
2-Nitroaniline	mg/Kg				586						
2-Nitrophenol	mg/Kg		12		605						
3,3'-Dichlorobenzidine	mg/Kg				586						
3-Nitroaniline	mg/Kg				586						
4,6-Dinitro-o-cresol	mg/Kg	5.7	12		586						
4-Bromophenyl phenyl ether	mg/Kg				586						

Appendix D – Table D.3-3A
Data Screening and Statistical Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels			Detect Data Summary						
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Background**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**	**Number of Detects > Background SL**
4-Chlorophenylphenyl ether	mg/Kg				586						
4-Nitrophenol	mg/Kg		7		605						
Acenaphthene	mg/Kg	3400	2.5		616	17	0.0002	3.8		1	
Acenaphthylene	mg/Kg	3400	270		617	22	0.00021	1.8			
Aniline	mg/Kg	130	11		586						
Anthracene	mg/Kg	17000	2.4		617	76	0.00016	8.5		1	
Benzidine	mg/Kg				476						
Benzo(a)anthracene	mg/Kg	0.6	1.4		617	75	0.00018	16	1	1	
Benzo(a)pyrene	mg/Kg	0.06	5.6		617	133	0.00017	16	14	1	
Benzo(b)fluoranthene	mg/Kg	0.6	4.4		616	121	0.00018	19	1	1	
Benzo(ghi)perylene	mg/Kg		6.4		617	77	0.00021	9.8		1	
Benzo(k)fluoranthene	mg/Kg	0.6	5.8		599	13	0.00015	8.5	1	1	
Benzoic acid	mg/Kg	230000	4.4		585	7	0.411	0.67			
Benzyl alcohol	mg/Kg	17000	4.4		585	1	0.03	0.03			
bis(2-Chloroethoxy)methane	mg/Kg		150		586						
bis(2-Chloroethyl) ether	mg/Kg	0.29	150		586						
bis(2-Chloroisopropyl) ether	mg/Kg	2300	150		586						
bis(2-Ethylhexyl) phthalate	mg/Kg	250	4.9		581	70	0.006	29		7	
Butyl benzyl phthalate	mg/Kg	377	340		592	18	0.00021	0.11			
Chrysene	mg/Kg	6	2.4		617	99	0.00021	16	1	1	
Dibenzo(a,h)anthracene	mg/Kg	0.17	5.6		617	32	0.00034	2.5	1		
Dibenzofuran	mg/Kg	110	62		586	2	0.033	2.8			
Diethyl phthalate	mg/Kg	46000	6940		611	21	0.00068	1			
Dimethyl phthalate	mg/Kg	570000	4.4		611	19	0.00055	0.28			
Di-n-butyl phthalate	mg/Kg	5700	0.49		611	37	0.00561	1		2	
Di-n-octyl phthalate	mg/Kg	2300	13		592	11	0.00051	0.59			
Fluoranthene	mg/Kg	2300	38		599	132	0.00024	39		1	
Fluorene	mg/Kg	2300	1.6		617	25	0.00024	4.1		2	
Hexachlorobenzene	mg/Kg	0.4	0.34		586						
Hexachlorobutadiene	mg/Kg	9.2	0.85		604	2	0.000332	0.00077			
Hexachlorocyclopentadiene	mg/Kg	340	13		586						
Hexachloroethane	mg/Kg	18	2.1		586						
Indeno(1,2,3-cd)pyrene	mg/Kg	0.6	5.8		599	90	0.00028	8.9	1	1	
Isophorone	mg/Kg	750	320		586						
Isopropanol	mg/Kg				18						
Mercaptans	mg/Kg				19	8	1.2	27			
Naphthalene	mg/Kg	1147	210		632	38	0.00036	3			
n-Nitrosodimethylamine	mg/Kg	0.045	20		593	17	0.000032	0.016			
n-Nitrosodi-n-propylamine	mg/Kg	0.1	28		586						
n-Nitrosodiphenylamine	mg/Kg	80	20		59						
n-Nitrosodiphenylamine as Diphenylamine	mg/Kg	80	20		531	7	0.00085	0.11			
o-Cresol	mg/Kg	2867	110		605	2	0.017	0.067			
p-Chloroaniline	mg/Kg				586						
p-Chloro-m-cresol	mg/Kg		21		605	1	2	2			
p-Cresol	mg/Kg	290	4.3		586	1	0.18	0.18			
Pentachlorophenol	mg/Kg	8.8	6		605	10	0.217	4000	1	1	
Phenanthrene	mg/Kg	17000	1.3		617	66	0.00048	35		2	

Appendix D – Table D.3-3A
Data Screening and Statistical Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels			Detect Data Summary						
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Background**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**	**Number of Detects > Background SL**
Phenol	mg/Kg	18000	5		605	1	0.078	0.078			
p-Nitroaniline	mg/Kg				586						
Pyrene	mg/Kg	1700	18		617	142	0.0002	31		1	
Pyridine	mg/Kg				75						
Tetrachlorophenol	mg/Kg				19	3	2	23			
VOC											
1,1,1,2-Tetrachloroethane	mg/Kg	0.00196	76		546	2	0.00089	0.027	1		
1,1,1-Trichloroethane	mg/Kg	1.1	4300		627	64	0.000489	110	5		
1,1,2,2-Tetrachloroethane	mg/Kg	0.0014	6		627						
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	16	583		627	15	0.00067	0.59			
1,1,2-Trichloroethane	mg/Kg	0.0012	8.3		627	7	0.0014	1.7	7		
1,1-Dichloroethane	mg/Kg	0.0016	210		627	21	0.000398	10	15		
1,1-Dichloroethene	mg/Kg	0.008	11		627	75	0.000465	2.1	8		
1,1-Dichloropropene	mg/Kg				546						
1,2,3-Trichlorobenzene	mg/Kg	0.14	20		546	6	0.0006	0.0036			
1,2,3-Trichloropropane	mg/Kg	0.066	12		546						
1,2,4-Trimethylbenzene	mg/Kg	0.041	64		546	9	0.00074	4.1	3		
1,2-Dibromo-3-chloropropane	mg/Kg	0.029	22		546						
1,2-Dibromoethane	mg/Kg	0.00024	25		558	4	0.033	9.7	4		
1,2-Dichloroethane	mg/Kg	0.0005	76		609	7	0.0011	0.026	7		
1,2-Dichloropropane	mg/Kg	0.00057	25		627						
1,3,5-Trimethylbenzene	mg/Kg	0.036	64		546	4	0.011	2.2	3		
1,3-Dichloropropane	mg/Kg				546						
1,4-Dichlorobutane	mg/Kg				18						
1,4-Dioxane	mg/Kg	28			239	7	0.0021	3			
2-Bromo-1-Chloropropane	mg/Kg				18						
2-Chloro-1,1,1-trifluoroethane	mg/Kg				13						
2-Chloroethylvinyl ether	mg/Kg	0.0000096	0.73		627						
2-Hexanone	mg/Kg		1220		609						
Acetone	mg/Kg	482	43		627	9	0.009	0.094			
Acetonitrile	mg/Kg				38						
Acrolein	mg/Kg				63						
Acrylonitrile	mg/Kg				59						
Benzene	mg/Kg	0.00013	110		627	12	0.000789	0.029	12		
Bromobenzene	mg/Kg				546	1	0.0082	0.0082			
Bromochloromethane	mg/Kg				564						
Bromodichloromethane	mg/Kg	0.00031	15		627	2	0.000413	0.0049	2		
Bromoform	mg/Kg				627	1	0.039	0.039			
Bromomethane	mg/Kg				609						
Carbon Disulfide	mg/Kg	0.068	47		89	4	0.006	1	1		
Carbon Tetrachloride	mg/Kg	0.000042	1.5		627	3	0.000779	1.2	3		
Chlorobenzene	mg/Kg	0.08	40		627	4	0.0031	0.034			
Chloroethane	mg/Kg		190		609						
Chloroform	mg/Kg	0.00077	11		627	12	0.000714	0.093	10		
Chloromethane	mg/Kg				609						
Chlorotoluene	mg/Kg				12						
Chlorotrifluoroethylene	mg/Kg		11		13						

Appendix D – Table D.3-3A
Data Screening and Statistical Summary for Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels			Detect Data Summary						
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Background**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**	**Number of Detects > Background SL**
cis-1,2-Dichloroethene	mg/Kg	0.014	68		609	28	0.000369	2.8	8		
cis-1,2-Dichloropropene	mg/Kg				18						
cis-1,3-Dichloropropene	mg/Kg				609						
Cumene	mg/Kg	0.38	210		546	6	0.0086	0.28			
Dibromochloromethane	mg/Kg				626	2	0.00491	0.062			
Dibromomethane	mg/Kg				546	2	0.00102	0.0034			
Dichlorodifluoromethane	mg/Kg	0.015	64		550						
Ethylbenzene	mg/Kg	0.0046	210		626	5	0.0048	0.21	5		
Formaldehyde	mg/Kg	12000	40		544	46	0.32	10			
Methyl ethyl ketone	mg/Kg	62	2540		626	12	0.0024	0.38			
Methyl isobutyl ketone (MIBK)	mg/Kg	20	1220		626	1	0.018	0.018			
Methyl tert-butyl ether	mg/Kg				546						
Methylene chloride	mg/Kg	0.004	25		626	22	0.001	2	18		
m-Xylene & p-Xylene	mg/Kg	0.15	64		546	10	0.000356	1.6	4		
n-Butylbenzene	mg/Kg				546	7	0.00076	0.79			
n-Propylbenzene	mg/Kg	0.2	210		546	5	0.013	0.44	1		
o-Chlorotoluene	mg/Kg	1222	160		546						
o-Xylene	mg/Kg	0.19	64		546	7	0.000472	1.2	3		
p-Chlorotoluene	mg/Kg	1222	160		546						
p-Cymene	mg/Kg		64		546	6	0.000328	1.1			
sec-Butylbenzene	mg/Kg	30	210		546	5	0.026	0.41			
sec-Dichloropropane	mg/Kg				546						
Styrene	mg/Kg	7.2	427		608	51	0.000281	0.00171			
tert-Butylbenzene	mg/Kg				546						
Tetrachloroethene	mg/Kg	0.00043	6		626	20	0.000352	4.8	15		
Tetrahydrofuran	mg/Kg				12						
Toluene	mg/Kg	0.23	3.4		626	17	0.000349	4	4	1	
trans-1,2-Dichloroethene	mg/Kg	0.014	970		626	3	0.00056	0.0039			
trans-1,3-Dichloropropene	mg/Kg				626						
Trichloroethene	mg/Kg	0.0022	3		626	115	0.000291	190	77	11	
Trichlorofluoromethane	mg/Kg	0.11	300		627	1	0.0013	0.0013			
Vinyl acetate	mg/Kg				71						
Vinyl chloride	mg/Kg	0.0000096	0.73		609						
Xylenes, Total	mg/Kg	0.15	64		546	11	0.000356	2.8	4		
Xylenes, Total	mg/Kg	0.15	64		81				4		

Appendix D – Table D.3-3B
Data Screening and Statistical Summary for Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

		Screening Levels		Detect Data Summary					
Constituent	**Units**	**Residential RBSL**	**Ecological RBSL**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Residential RBSL**	**Number of Detects > Ecological RBSL**
VOC									
1,1,1,2-Tetrachloroethane	mg/m3	0.048		92					
1,1,1-Trichloroethane	mg/m3	640	38	92	52	0.05	4700	3	15
1,1,2,2-Tetrachloroethane	mg/m3	0.048		92					
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/m3	8800	91	92	73	0.26	950		7
1,1,2-Trichloroethane	mg/m3	0.17	0.057	92					
1,1-Dichloroethane	mg/m3	1.7	36	92	28	0.12	76	11	2
1,1-Dichloroethene	mg/m3	58	0.6	92	61	0.08	410	8	50
1,2-Dichloroethane	mg/m3	0.13	42	92					
Benzene	mg/m3	0.095	0.57	92	5	0.036	0.58	1	1
Carbon Tetrachloride	mg/m3	0.063	0.63	92	1	3.4	3.4	1	1
Chloroethane	mg/m3		992	92					
Chloroform	mg/m3	0.5	0.24	92	12	0.05	2.5	3	3
cis-1,2-Dichloroethene	mg/m3	10	1.9	92	27	0.07	950	5	10
Dichlorodifluoromethane	mg/m3	58	91	92	1	0.97	0.97		
Ethylbenzene	mg/m3	290	23	92					
Methylene chloride	mg/m3	2.7	0.87	92					
m-Xylene & p-Xylene	mg/m3	29	16	92					
o-Xylene	mg/m3	29	16	92					
Tetrachloroethene	mg/m3	0.45	24	92	21	0.05	56	10	2
Toluene	mg/m3	110	0.084	92	4	0.07	0.14		3
trans-1,2-Dichloroethene	mg/m3	20	1.9	92	2	0.13	0.69		
Trichloroethene	mg/m3	1.4	6.4	92	64	0.05	9400	44	36
Trichlorofluoromethane	mg/m3	200	91	92	6	0.05	0.11		
Vinyl chloride	mg/m3	0.035	0.56	92	3	0.034	0.18	2	
Xylenes, Total	mg/m3	29	16	93					

Appendix D – Table D.3-3C
Data Screening and Statistical Summary for Surface Water
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Ecological RBSL**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Ecological RBSL**
Inorganics							
Perchlorate	µg/L		5	1	4.3	4.3	

Appendix D – Table D.3-3D
Data Screening and Statistical Summary for Near Surface Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
Energetics							
1,3-Dinitrobenzene	µg/L		2				
2,4-Dinitrotoluene	µg/L		5				
2,6-Dinitrotoluene	µg/L		5				
Nitrobenzene	µg/L	110	5				
Inorganics							
Ammonia-N	µg/L	1500	2				
Bicarbonate	µg/L		3	3	351,000	522,000	
Carbonate	µg/L		3	3	0	0	
Cation/Anion Balance (%)	%		1	1	0.8	0.8	
Chloride	µg/L	250,000	3	3	147,000	390,000	2
Cyanides	µg/L	150	2				
Fluoride	µg/L	800	5	5	460	710	
Nitrate-NO3	µg/L		5	2	180	2700	
Perchlorate	µg/L	6	7				
Sulfate	µg/L	376,000	3	3	207,000	870,000	2
Total Dissolved Solids	µg/L		3	3	855,000	2,215,000	
Metals							
Antimony, Dissolved	µg/L	2.5	2				
Arsenic, Dissolved	µg/L	7.7	2				
Barium, Dissolved	µg/L	150	2				
Beryllium, Dissolved	µg/L	0.14	2				
Boron, Dissolved	µg/L	340	3	3	170	600	2
Cadmium, Dissolved	µg/L	0.2	2				
Calcium, Dissolved	µg/L		3	3	62,000	279,000	
Chromium, Dissolved	µg/L	14	2				
Copper, Dissolved	µg/L	4.7	2				
Iron, Dissolved	µg/L	4100	2				
Lead, Dissolved	µg/L	11	2				
Magnesium, Dissolved	µg/L	77,000	3	3	37000	147000	2
Manganese, Dissolved	µg/L	150	2				
Mercury, Dissolved	µg/L	0.063	2				
Molybdenum, Dissolved	µg/L	2.2	2				
Nickel, Dissolved	µg/L	17	2				
Potassium, Dissolved	µg/L	9,600	3	3	6,300	18,000	1

Appendix D – Table D.3-3D
Data Screening and Statistical Summary for Near Surface Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
Selenium, Dissolved	µg/L	1.6	2				
Silica, Dissolved	µg/L		3	3	28,000	32,000	
Silver, Dissolved	µg/L	0.17	2				
Sodium, Dissolved	µg/L	190,000	3	3	182,000	246,000	1
Strontium, Dissolved	µg/L	800	2	2	300	800	
Thallium, Dissolved	µg/L	0.13	2				
Zinc, Dissolved	µg/L	6,300	2				
SVOC							
1,2,4-Trichlorobenzene	µg/L	5	5				
1,2-Dichlorobenzene	µg/L	600	45				
1,2-Diphenylhydrazine	µg/L		4				
1,3-Dichlorobenzene	µg/L	600	45				
1,4-Dichlorobenzene	µg/L	5	43				
2,4,6-Trichlorophenol	µg/L		5				
2,4-Dichlorophenol	µg/L		5				
2,4-Dimethylphenol	µg/L	100	5				
2,4-Dinitrophenol	µg/L		5				
2-Chloronaphthalene	µg/L		5				
2-Chlorophenol	µg/L		5				
2-n-Butoxyethanol	µg/L		2	2	10	10	
2-Nitrophenol	µg/L		5				
3,3'-Dichlorobenzidine	µg/L		5				
4,6-Dinitro-o-cresol	µg/L		5				
4-Bromophenyl phenyl ether	µg/L		5				
4-Chlorophenylphenyl ether	µg/L		5				
4-Nitrophenol	µg/L		5				
Acenaphthene	µg/L		5				
Acenaphthylene	µg/L		5				
Anthracene	µg/L		5				
Benzedrine	µg/L		4				
Benzo(a)anthracene	µg/L	0.1	5				
Benzo(a)pyrene	µg/L	0.2	5				
Benzo(b)fluoranthene	µg/L		5				
Benzo(ghi)perylene	µg/L		5				
Benzo(k)fluoranthene	µg/L		5				

Appendix D – Table D.3-3D
Data Screening and Statistical Summary for Near Surface Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
bis(2-Chloroethoxy)methane	µg/L		5				
bis(2-Chloroethyl) ether	µg/L	360	5				
bis(2-Chloroisopropyl) ether	µg/L		5				
bis(2-Ethylhexyl) phthalate	µg/L	4	5				
Butyl benzyl phthalate	µg/L		4				
Chrysene	µg/L		5				
Dibenzo(a,h)anthracene	µg/L		5				
Diethyl phthalate	µg/L		5				
Dimethyl phthalate	µg/L		4				
Di-n-butyl phthalate	µg/L		5				
Di-n-octyl phthalate	µg/L		5				
Fluoranthene	µg/L		5				
Fluorene	µg/L		5				
Hexachlorobenzene	µg/L	1	5				
Hexachlorobutadiene	µg/L		5				
Hexachlorocyclopentadiene	µg/L	50	4				
Hexachloroethane	µg/L	10	5				
Indeno(1,2,3-cd)pyrene	µg/L		5				
Isophorone	µg/L	5,400	5				
Naphthalene	µg/L	170	5				
n-Nitrosodimethylamine	µg/L	0.01	5				
n-Nitrosodi-n-propylamine	µg/L		5				
n-Nitrosodiphenylamine	µg/L		5				
p-Chloro-m-cresol	µg/L		5				
Pentachlorophenol	µg/L	1	5				
Phenanthrene	µg/L		5				
Phenol	µg/L	4200	5				
Pyrene	µg/L		4				
VOC							
1,1,1-Trichloroethane	µg/L	200	52				
1,1,2,2-Tetrachloroethane	µg/L	1	52				
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	150	24	1	1.1	1.1	
1,1,2-Trichloroethane	µg/L	5	52				
1,1-Dichloroethane	µg/L	5	52	5	0.2	0.34	
1,1-Dichloroethene	µg/L	6	52				

Appendix D – Table D.3-3D
Data Screening and Statistical Summary for Near Surface Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
1,2,3-Trichloropropane	µg/L	0.005	2				
1,2-Dichloroethane	µg/L	0.5	52				
1,2-Dichloropropane	µg/L	5	52				
1,4-Dioxane	µg/L	3	8	2	1.5	1.8	
2-Chloroethylvinyl ether	µg/L		29				
2-Hexanone	µg/L	250	19				
Acetone	µg/L	20,000	21	1	6.6	6.6	
Acrolein	µg/L	110	13				
Acrylonitrile	µg/L	910	13				
Benzene	µg/L	1	30				
Bromodichloromethane	µg/L	80	52				
Bromoform	µg/L	80	52				
Bromomethane	µg/L		52				
Carbon Disulfide	µg/L	160	19				
Carbon Tetrachloride	µg/L	0.5	52				
Chlorobenzene	µg/L	70	52				
Chloroethane	µg/L	16	52				
Chloroform	µg/L	80	52	1	2.7	2.7	
Chloromethane	µg/L		52	1	0.23	0.23	
cis-1,2-Dichloroethene	µg/L	6	37	26	0.34	2.4	
cis-1,3-Dichloropropene	µg/L		52				
Dibromochloromethane	µg/L	80	52				
Dichlorodifluoroethane	µg/L		2				
Dichlorodifluoromethane	µg/L	1,000	18				
Ethylbenzene	µg/L	300	30				
Formaldehyde	µg/L	100	2				
Methyl ethyl ketone	µg/L	8,400	20	1	20	20	
Methyl isobutyl ketone (MIBK)	µg/L	120	19				
Methylene chloride	µg/L	5	52				
m-Xylene	µg/L	1,750	1				
m-Xylene & p-Xylene	µg/L	1,750	18				
o + p Xylene	µg/L	1,750	1				
o-Xylene	µg/L	1,750	18				
Styrene	µg/L	100	8				
Tetrachloroethene	µg/L	5	52				

Appendix D – Table D.3-3D
Data Screening and Statistical Summary for Near Surface Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
Toluene	µg/L	150	30				
trans-1,2-Dichloroethene	µg/L	10	52	21	0.2	44	3
trans-1,3-Dichloropropene	µg/L		50				
Trichloroethene	µg/L	5	52	27	0.38	9	1
Trichlorofluoromethane	µg/L	150	43				
Vinyl acetate	µg/L	88	7				
Vinyl chloride	µg/L	0.5	52	3	0.4	11	1
Xylenes, Total	µg/L	1,750	19				
Xylenes, Total	µg/L	1,750	1				

Appendix D – Table D.3-3E
Data Screening and Statistical Summary for Chatsworth Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
Energetics							
1,3-Dinitrobenzene	µg/L		2				
2,4-Dinitrotoluene	µg/L		3				
2,6-Dinitrotoluene	µg/L		3				
Nitrobenzene	µg/L	110	3				
Inorganics							
Ammonia-N	µg/L	1500	2				
Bicarbonate	µg/L		2	2	338,000	358,000	
Carbonate	µg/L		2	2	0	0	
Cation/Anion Balance (%)	%		2	2	0.7	0.7	
Chloride	µg/L	250,000	2	2	54,900	55,600	
Fluoride	µg/L	800	4	3	400	480	
Nitrate-NO3	µg/L		4	1	260	260	
Perchlorate	µg/L	6	4				
Sulfate	µg/L	376,000	2	2	127,000	127,000	
Total Dissolved Solids	µg/L		2	2	550,000	560,000	
Metals							
Antimony, Dissolved	µg/L	2.5	1				
Arsenic, Dissolved	µg/L	7.7	1				
Barium, Dissolved	µg/L	150	1				
Beryllium, Dissolved	µg/L	0.14	1				
Boron, Dissolved	µg/L	340	2				
Cadmium, Dissolved	µg/L	0.2	1				
Calcium, Dissolved	µg/L		2	2	100,000	109,000	
Chromium, Dissolved	µg/L	14	1				
Copper, Dissolved	µg/L	4.7	1				
Iron, Dissolved	µg/L	4,100	1				
Lead, Dissolved	µg/L	11	1				
Magnesium, Dissolved	µg/L	77,000	2	2	29,000	30,000	
Manganese, Dissolved	µg/L	150	1	1	200	200	1
Mercury, Dissolved	µg/L	0.063	1				
Molybdenum, Dissolved	µg/L	2.2	1				
Nickel, Dissolved	µg/L	17	1				
Potassium, Dissolved	µg/L	9,600	2	2	3,100	3,200	

Appendix D – Table D.3-3E
Data Screening and Statistical Summary for Chatsworth Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
Selenium, Dissolved	µg/L	1.6	1				
Silica, Dissolved	µg/L		2	2	28,000	30,000	
Silver, Dissolved	µg/L	0.17	1				
Sodium, Dissolved	µg/L	190,000	2	2	51,000	52,000	
Strontium, Dissolved	µg/L	800	1	1	200	200	
Thallium, Dissolved	µg/L	0.13	1				
Zinc, Dissolved	µg/L	6,300	1	1	290	290	
SVOC							
1,2,4-Trichlorobenzene	µg/L	5	3				
1,2-Dichlorobenzene	µg/L	600	56				
1,2-Diphenylhydrazine	µg/L		3				
1,3-Dichlorobenzene	µg/L	600	56				
1,4-Dichlorobenzene	µg/L	5	54				
2,4,6-Trichlorophenol	µg/L		3				
2,4-Dichlorophenol	µg/L		3				
2,4-Dimethylphenol	µg/L	100	3				
2,4-Dinitrophenol	µg/L		3				
2-Chloronaphthalene	µg/L		3				
2-Chlorophenol	µg/L		3				
2-Nitrophenol	µg/L		3				
3,3'-Dichlorobenzidine	µg/L		3				
4,6-Dinitro-o-cresol	µg/L		3				
4-Bromophenyl phenyl ether	µg/L		3				
4-Chlorophenylphenyl ether	µg/L		3				
4-Nitrophenol	µg/L		3				
Acenaphthene	µg/L		3				
Acenaphthylene	µg/L		3				
Anthracene	µg/L		3				
Benzidine	µg/L		3				
Benzo(a)anthracene	µg/L	0.1	3				
Benzo(a)pyrene	µg/L	0.2	3				
Benzo(b)fluoranthene	µg/L		3				
Benzo(ghi)perylene	µg/L		3				
Benzo(k)fluoranthene	µg/L		3				

Appendix D – Table D.3-3E
Data Screening and Statistical Summary for Chatsworth Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
bis(2-Chloroethoxy)methane	µg/L		3				
bis(2-Chloroethyl) ether	µg/L	360	3				
bis(2-Chloroisopropyl) ether	µg/L		3				
bis(2-Ethylhexyl) phthalate	µg/L	4	3				
Butyl benzyl phthalate	µg/L		2				
Chrysene	µg/L		3				
Dibenzo(a,h)anthracene	µg/L		3				
Diethyl phthalate	µg/L		3				
Dimethyl phthalate	µg/L		3				
Di-n-butyl phthalate	µg/L		3				
Di-n-octyl phthalate	µg/L		3				
Fluoranthene	µg/L		3				
Fluorene	µg/L		3				
Hexachlorobenzene	µg/L	1	3				
Hexachlorobutadiene	µg/L		3				
Hexachlorocyclopentadiene	µg/L	50	2				
Hexachloroethane	µg/L	10	3				
Indeno(1,2,3-cd)pyrene	µg/L		3				
Isophorone	µg/L	5,400	3				
Naphthalene	µg/L	170	3				
n-Nitrosodimethylamine	µg/L	0.01	3				
n-Nitrosodi-n-propylamine	µg/L		3				
n-Nitrosodiphenylamine	µg/L		3				
p-Chloro-m-cresol	µg/L		3				
Pentachlorophenol	µg/L	1	3				
Phenanthrene	µg/L		3				
Phenol	µg/L	4200	3				
Pyrene	µg/L		2				

Appendix D – Table D.3-3E
Data Screening and Statistical Summary for Chatsworth Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
VOC							
1,1,1,2-Tetrachloroethane	µg/L		1				
1,1,1-Trichloroethane	µg/L	200	59				
1,1,2,2-Tetrachloroethane	µg/L	1	58				
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	150	31	3	1.1	3.8	
1,1,2-Trichloroethane	µg/L	5	58				
1,1-Dichloroethane	µg/L	5	59				
1,1-Dichloroethene	µg/L	6	59				
1,2,3-Trichloropropane	µg/L	0.005	1				
1,2-Dichloroethane	µg/L	0.5	59				
1,2-Dichloropropane	µg/L	5	59				
1,3-Dichloropropene	µg/L	0.5	2				
1,4-Dioxane	µg/L	3	9	2	0.55	0.73	
2-Chloroethylvinyl ether	µg/L		26				
2-Hexanone	µg/L	250	22				
Acetone	µg/L	20,000	25				
Acrolein	µg/L	110	7				
Acrylonitrile	µg/L	910	7				
Benzene	µg/L	1	28				
Bromodichloromethane	µg/L	80	59				
Bromoform	µg/L	80	59				
Bromomethane	µg/L		59				
Carbon Disulfide	µg/L	160	22	1	0.4	0.4	
Carbon Tetrachloride	µg/L	0.5	59				
Chlorobenzene	µg/L	70	59				
Chloroethane	µg/L	16	59				
Chloroform	µg/L	80	59				
Chloromethane	µg/L		59				
cis-1,2-Dichloroethene	µg/L	6	44	36	0.33	6.6	2
cis-1,3-Dichloropropene	µg/L		58				
Dibromochloromethane	µg/L	80	59				
Dichlorodifluoroethane	µg/L		4				
Dichlorodifluoromethane	µg/L	1,000	24				
Ethylbenzene	µg/L	300	28				

Appendix D – Table D.3-3E
Data Screening and Statistical Summary for Chatsworth Groundwater
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Detect Data Summary				
Constituent	**Units**	**Groundwater Screening Level**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**	**Number of Detects > Groundwater Screening Level**
Formaldehyde	µg/L	100	2				
Methyl ethyl ketone	µg/L	8,400	23				
Methyl isobutyl ketone (MIBK)	µg/L	120	22				
Methylene chloride	µg/L	5	59				
m-Xylene	µg/L	1,750	3				
m-Xylene & p-Xylene	µg/L	1,750	22				
o + p Xylene	µg/L	1,750	3				
o-Xylene	µg/L	1,750	22				
Styrene	µg/L	100	7				
Tetrachloroethene	µg/L	5	59				
Toluene	µg/L	150	28	1	0.11	0.11	
trans-1,2-Dichloroethene	µg/L	10	59	21	0.1	1.8	
trans-1,3-Dichloropropene	µg/L		57				
Trichloroethene	µg/L	5	59	6	0.22	190	1
Trichlorofluoromethane	µg/L	150	56	1	2	2	
Vinyl acetate	µg/L	88	7				
Vinyl chloride	µg/L	0.5	59	4	0.1	0.74	1
Xylenes, Total	µg/L	1,750	25				
Xylenes, Total	µg/L	1,750	1				

Appendix D – Table D.3-3F
Data Screening and Statistical Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Screening Levels		Detect Data Summary		
Radiological Isotope	**Analysis Method**	**Units**	**EPA Agricultural PRG[1]**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**
Actinium-227	EH300	pCi/g	1.35	162			
Actinium-228	EH300	pCi/g	731	162	162	0.43	1.9
Americium-241	EH300	pCi/g	0.0132	162			
Antimony-125	EH300	pCi/g	0.461	162			
Barium-133	EH300	pCi/g	0.161	162			
Bismuth-210	EH300	pCi/g	1340	162	37	0.601	47.5
Bismuth-211	EH300	pCi/g	3,030,000	162			
Bismuth-212	EH300	pCi/g	22,400	162	58	0.479	1.45
Bismuth-214	EH300	pCi/g	8,190	162	156	0.246	106
Cesium-134	EH300	pCi/g	0.00747	162			
Cesium-137	EH300	pCi/g	0.00123	162	32	0.0334	0.471 [2]
Cobalt-60	EH300	pCi/g	0.000901	162			
Europium-152	EH300	pCi/g	0.0376	162			
Europium-154	EH300	pCi/g	0.0472	162			
Europium-155	EH300	pCi/g	3.74	162			
Lead-210	EH300	pCi/g	0.000187	162	37	0.601	47.5
Lead-211	EH300	pCi/g	55,000	162			
Lead-212	EH300	pCi/g	80	162	162	0.341	1.85
Lead-214	EH300	pCi/g	34,900	162	162	0.271	110
Manganese-54	EH300	pCi/g	0.369	162			
Plutonium-238	HASL 300	pCi/g	0.00731	162	3	0.0157	0.0282 [3]
Plutonium-239/240	HASL 300	pCi/g	0.0061	162	1	0.0753	0.0753 [4]
Polonium-210	EH300	pCi/g	19.4	162	37	0.601	47.5
Polonium-214	EH300	pCi/g	1,160,000,000,000,000	162	162	0.271	110
Polonium-215	EH300	pCi/g	54,900,000,000,000	162			
Polonium-216	EH300	pCi/g	6,200,000,000,000	162	162	0.341	1.85
Polonium-218	EH300	pCi/g	9,380,000,000	162	162	0.271	110
Potassium-40	EH300	pCi/g	0.0445	162	162	1.12	25.9
Protactinium-231	EH300	pCi/g	0.21	162			
Protactinium-234m	EH300	pCi/g	15,200,000	162	1	5.94	5.94

Appendix D – Table D.3-3F
Data Screening and Statistical Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Screening Levels		Detect Data Summary		
Radiological Isotope	**Analysis Method**	**Units**	**EPA Agricultural PRG[1]**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**
Radium-223	EH300	pCi/g	0.897	162			
Radium-224	EH300	pCi/g	4	162			
Radium-226	E903.1	pCi/g	0.000676	2	2	1.85	271
Radium-226	EH300	pCi/g	0.000676	162	162	0.246	106
Radium-228	EH300	pCi/g	0.00117	162	162	0.43	1.9
Radon-219	EH300	pCi/g	82,100,000	162			
Radon-220	EH300	pCi/g	774,000,000	162			
Sodium-22	EH300	pCi/g	0.0852	162			
Strontium-90	E905.0	pCi/g	0.00139	169	9	0.0478	0.109
Thallium-207	EH300	pCi/g	16,800,000	162			
Thallium-208	EH300	pCi/g	22,600	162	162	0.0708	0.621
Thorium-227	EH300	pCi/g	9.05	162			
Thorium-228	EH300	pCi/g	0.123	162	162	0.102	1.85
Thorium-228	HASL 300	pCi/g	0.123	162	162	0.392	4.13
Thorium-230	HASL 300	pCi/g	0.0105	162	162	0.425	13.1
Thorium-231	EH300	pCi/g	3310	162	1	0.449	0.449
Thorium-232	EH300	pCi/g	0.00942	162	162	0.1	1.8
Thorium-232	HASL 300	pCi/g	0.00942	162	162	0.204	3.84
Thorium-234	EH300	pCi/g	15.3	162	61	0.585	5.32
Total Uranium	HASL 300	μg/g		2	2	3.02	3.67
Tritium	E906.0	pCi/g	0.16	169			
Uranium-233/234	HASL 300	pCi/g	0.00187	162	162	0.183	7.67
Uranium-235	EH300	pCi/g	0.00187	162			
Uranium-235/236	HASL 300	pCi/g	0.00187	162	141	0.0333	0.486
Uranium-238	EH300	pCi/g	0.00206	162	62	0.585	5.32
Uranium-238	HASL 300	pCi/g	0.00206	162	162	0.261	5.42

Notes:

1. EPA Ag PRG – EPA Agricultural Soil Radionuclide Preliminary Remediation Goal (USEPA, 2000 and USDOE, 2009)

2. Re-analysis result was non-detect.

Appendix D – Table D.3-3F
Data Screening and Statistical Summary for Radioisotopes in Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

			Screening Levels		Detect Data Summary		
Radiological Isotope	**Analysis Method**	**Units**	**EPA Agricultural PRG[1]**	**Number of Samples**	**Number of Detects**	**Minimum Detected Value**	**Maximum Detected Value**

3. Re-analysis results for all detects were non-detects.

4. Re-analysis result for single detect was non-detect.

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Shallow Groundwater		1,1,2-Trichloro-1,2,2-trifluoroethane		N	Not detected last 3 yrs available
Shallow Groundwater		1,1-Dichloroethane		N	Not detected last 3 yrs available
Shallow Groundwater		1,4-Dioxane		Y	
Shallow Groundwater		2-n-Butoxyethanol		Y	
Shallow Groundwater		Acetone		N	Not detected last 3 yrs available
Shallow Groundwater		Bicarbonate		N	Not detected last 3 yrs available
Shallow Groundwater		Boron, Dissolved	Y	Y	
Shallow Groundwater		Calcium, Dissolved		N	Not detected last 3 yrs available
Shallow Groundwater		Carbonate		N	Not detected last 3 yrs available
Shallow Groundwater		Chloride		N	Not detected last 3 yrs available
Shallow Groundwater		Chloroform		N	Not detected last 3 yrs available
Shallow Groundwater		Chloromethane		N	Not detected last 3 yrs available
Shallow Groundwater		cis-1,2-Dichloroethene		Y	
Shallow Groundwater		Fluoride		Y	
Shallow Groundwater		Magnesium, Dissolved		N	Not detected last 3 yrs available
Shallow Groundwater		Methyl ethyl ketone		N	Not detected last 3 yrs available
Shallow Groundwater		Nitrate-NO3		N	Not detected last 3 yrs available
Shallow Groundwater		Potassium, Dissolved		N	Not detected last 3 yrs available
Shallow Groundwater		Silica, Dissolved		N	Not detected last 3 yrs available
Shallow Groundwater		Sodium, Dissolved		N	Not detected last 3 yrs available
Shallow Groundwater		Strontium, Dissolved	N	N	Below background
Shallow Groundwater		Sulfate		N	Not detected last 3 yrs available
Shallow Groundwater		trans-1,2-Dichloroethene		N	Not detected last 3 yrs available
Shallow Groundwater		Trichloroethene		Y	
Shallow Groundwater		Vinyl chloride		N	Not detected last 3 yrs available
Soil	0-10 ft	1,1,1,2-Tetrachloroethane		N	Less than 5% detection
Soil	0-10 ft	1,1,1-Trichloroethane		Y	
Soil	0-10 ft	1,1,2-Trichloro-1,2,2-trifluoroethane		N	Less than 5% detection
Soil	0-10 ft	1,1,2-Trichloroethane		N	Less than 5% detection
Soil	0-10 ft	1,1-Dichloroethane		N	Less than 5% detection
Soil	0-10 ft	1,1-Dichloroethene		Y	
Soil	0-10 ft	1,2,3-Trichlorobenzene		N	Less than 5% detection
Soil	0-10 ft	1,2,4-Trichlorobenzene		N	Less than 5% detection
Soil	0-10 ft	1,2,4-Trimethylbenzene		N	Less than 5% detection
Soil	0-10 ft	1,2-Dibromoethane		N	Less than 5% detection
Soil	0-10 ft	1,2-Dichlorobenzene		N	Less than 5% detection
Soil	0-10 ft	1,2-Dichloroethane		N	Less than 5% detection
Soil	0-10 ft	1,3,5-Trimethylbenzene		N	Less than 5% detection

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-10 ft	1,3-Dichlorobenzene		N	Less than 5% detection
Soil	0-10 ft	1,4-Dichlorobenzene		N	Less than 5% detection
Soil	0-10 ft	1,4-Dioxane		N	Less than 5% detection
Soil	0-10 ft	1-Methyl naphthalene		N	Less than 5% detection
Soil	0-10 ft	2,4,6-Trinitrotoluene		N	Less than 5% detection
Soil	0-10 ft	2,4-Dichlorophenoxybutyric acid		Y	
Soil	0-10 ft	2,4-Dimethylphenol		N	Less than 5% detection
Soil	0-10 ft	2-Amino-4,6-Dinitrotoluene		N	Less than 5% detection
Soil	0-10 ft	2-Methylnaphthalene		Y	
Soil	0-10 ft	4,4'-DDD		N	Less than 5% detection
Soil	0-10 ft	4,4'-DDE		Y	
Soil	0-10 ft	4,4'-DDT		Y	
Soil	0-10 ft	Acenaphthene		N	Less than 5% detection
Soil	0-10 ft	Acenaphthylene		N	Less than 5% detection
Soil	0-10 ft	Acetone		N	Less than 5% detection
Soil	0-10 ft	Aldrin		N	Less than 5% detection
Soil	0-10 ft	alpha-BHC		N	Less than 5% detection
Soil	0-10 ft	Aluminum	N	N	Below background
Soil	0-10 ft	Ammonia-N		Y	
Soil	0-10 ft	Anthracene		Y	
Soil	0-10 ft	Antimony	N	N	Below background
Soil	0-10 ft	Aroclor 1242		N	Less than 5% detection
Soil	0-10 ft	Aroclor 1248		N	Less than 5% detection
Soil	0-10 ft	Aroclor 1254		Y	
Soil	0-10 ft	Aroclor 1260		Y	
Soil	0-10 ft	Arsenic	N	N	Below background
Soil	0-10 ft	Barium	N	N	Below background
Soil	0-10 ft	Benzene		N	Less than 5% detection
Soil	0-10 ft	Benzo(a)anthracene		Y	
Soil	0-10 ft	Benzo(a)pyrene		Y	
Soil	0-10 ft	Benzo(b)fluoranthene		Y	
Soil	0-10 ft	Benzo(ghi)perylene		Y	
Soil	0-10 ft	Benzo(k)fluoranthene		N	Less than 5% detection
Soil	0-10 ft	Benzoic acid		N	Less than 5% detection
Soil	0-10 ft	Benzyl alcohol		N	Less than 5% detection
Soil	0-10 ft	Beryllium	Y	Y	
Soil	0-10 ft	beta-BHC		N	Less than 5% detection
Soil	0-10 ft	bis(2-Ethylhexyl) phthalate		Y	

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-10 ft	Boron	N	N	Below background
Soil	0-10 ft	Bromide		N	Less than 5% detection
Soil	0-10 ft	Bromobenzene		N	Less than 5% detection
Soil	0-10 ft	Bromodichloromethane		N	Less than 5% detection
Soil	0-10 ft	Bromoform		N	Less than 5% detection
Soil	0-10 ft	Butyl benzyl phthalate		N	Less than 5% detection
Soil	0-10 ft	Cadmium	N	N	Below background
Soil	0-10 ft	Calcium		N	Essential Nutrient
Soil	0-10 ft	Carbon Disulfide		N	Less than 5% detection
Soil	0-10 ft	Carbon Tetrachloride		N	Less than 5% detection
Soil	0-10 ft	Chlorobenzene		N	Less than 5% detection
Soil	0-10 ft	Chloroform		N	Less than 5% detection
Soil	0-10 ft	Chromium	N	N	Below background
Soil	0-10 ft	Chrysene		Y	
Soil	0-10 ft	cis-1,2-Dichloroethene		N	Less than 5% detection
Soil	0-10 ft	Cobalt	N	N	Below background
Soil	0-10 ft	Copper	N	N	Below background
Soil	0-10 ft	Cumene		N	Less than 5% detection
Soil	0-10 ft	Cyanides		Y	
Soil	0-10 ft	delta-BHC		N	Less than 5% detection
Soil	0-10 ft	Dibenzo(a,h)anthracene		Y	
Soil	0-10 ft	Dibenzofuran		N	Less than 5% detection
Soil	0-10 ft	Dibromochloromethane		N	Less than 5% detection
Soil	0-10 ft	Dibromomethane		N	Less than 5% detection
Soil	0-10 ft	Dieldrin		N	Less than 5% detection
Soil	0-10 ft	Diesel Range Organics (C10-C24)		N	See BTEX/PAHs
Soil	0-10 ft	Diesel Range Organics (C12-C14)		N	See BTEX/PAHs
Soil	0-10 ft	Diesel Range Organics (C15-C20)		N	See BTEX/PAHs
Soil	0-10 ft	Diesel Range Organics (C21-C30)		N	See BTEX/PAHs
Soil	0-10 ft	Diesel Range Organics (C7-C28)		N	See BTEX/PAHs
Soil	0-10 ft	Diesel Range Organics (C8-C11)		N	See BTEX/PAHs
Soil	0-10 ft	Diethyl phthalate		N	Less than 5% detection
Soil	0-10 ft	Dimethyl phthalate		N	Less than 5% detection
Soil	0-10 ft	Di-n-butyl phthalate		Y	
Soil	0-10 ft	Di-n-octyl phthalate		N	Less than 5% detection
Soil	0-10 ft	DioxinFuran_TEQ_Mammal	Y	Y	
Soil	0-10 ft	Endosulfan I		N	Less than 5% detection

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-10 ft	Endosulfan II		N	Less than 5% detection
Soil	0-10 ft	Endosulfan sulfate		N	Less than 5% detection
Soil	0-10 ft	Endrin		N	Less than 5% detection
Soil	0-10 ft	Endrin aldehyde		N	Less than 5% detection
Soil	0-10 ft	Endrin ketone		N	Less than 5% detection
Soil	0-10 ft	Ethylbenzene		N	Less than 5% detection
Soil	0-10 ft	Fluoranthene		Y	
Soil	0-10 ft	Fluorene		N	Less than 5% detection
Soil	0-10 ft	Fluoride	N	N	Below background
Soil	0-10 ft	Formaldehyde		Y	
Soil	0-10 ft	Fuel Hydrocarbons, C12-C28		N	See BTEX/PAHs
Soil	0-10 ft	Fuel Hydrocarbons, C16-C28		N	See BTEX/PAHs
Soil	0-10 ft	Fuel Hydrocarbons, C7-C24, as heavy Hydrocarbons		N	See BTEX/PAHs
Soil	0-10 ft	gamma-BHC		N	Less than 5% detection
Soil	0-10 ft	Gasoline Range Organics (C5-C12)		N	See BTEX/PAHs
Soil	0-10 ft	Heptachlor		N	Less than 5% detection
Soil	0-10 ft	Heptachlor epoxide		Y	
Soil	0-10 ft	Hexachlorobutadiene		N	Less than 5% detection
Soil	0-10 ft	Hexavalent Chromium		Y	
Soil	0-10 ft	HMX		N	Less than 5% detection
Soil	0-10 ft	Indeno(1,2,3-cd)pyrene		Y	
Soil	0-10 ft	Iron	N	N	Below background
Soil	0-10 ft	Lead	N	N	Below background
Soil	0-10 ft	Lithium	N	N	Below background
Soil	0-10 ft	Magnesium		N	Essential Nutrient
Soil	0-10 ft	Manganese	N	N	Below background
Soil	0-10 ft	Mercury	N	N	Below background
Soil	0-10 ft	Methyl ethyl ketone		N	Less than 5% detection
Soil	0-10 ft	Methyl isobutyl ketone (MIBK)		N	Less than 5% detection
Soil	0-10 ft	Methylene chloride		N	Less than 5% detection
Soil	0-10 ft	Mirex		N	Less than 5% detection
Soil	0-10 ft	Molybdenum	N	N	Below background
Soil	0-10 ft	m-Xylene & p-Xylene		N	Less than 5% detection
Soil	0-10 ft	Naphthalene		Y	
Soil	0-10 ft	n-Butylbenzene		N	Less than 5% detection
Soil	0-10 ft	Nickel	N	N	Below background

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-10 ft	Nitrate-N		Y	
Soil	0-10 ft	Nitrate-NO3		Y	
Soil	0-10 ft	Nitrite-N		N	Less than 5% detection
Soil	0-10 ft	n-Nitrosodimethylamine		N	Less than 5% detection
Soil	0-10 ft	n-Nitrosodiphenylamine as Diphenylamine		N	Less than 5% detection
Soil	0-10 ft	n-Propylbenzene		N	Less than 5% detection
Soil	0-10 ft	o-Cresol		N	Less than 5% detection
Soil	0-10 ft	o-Xylene		N	Less than 5% detection
Soil	0-10 ft	p-Chloro-m-cresol		N	Less than 5% detection
Soil	0-10 ft	p-Cresol		N	Less than 5% detection
Soil	0-10 ft	p-Cymene		N	Less than 5% detection
Soil	0-10 ft	Pentachlorophenol		N	Less than 5% detection
Soil	0-10 ft	Perchlorate		Y	
Soil	0-10 ft	Petroleum Hydrocarbons		N	See BTEX/PAHs
Soil	0-10 ft	Phenanthrene		Y	
Soil	0-10 ft	Phenol		N	Less than 5% detection
Soil	0-10 ft	Potassium	N	N	Below background
Soil	0-10 ft	Pyrene		Y	
Soil	0-10 ft	sec-Butylbenzene		N	Less than 5% detection
Soil	0-10 ft	Selenium	N	N	Below background
Soil	0-10 ft	Silver	N	N	Below background
Soil	0-10 ft	Sodium	Y	N	Essential Nutrient
Soil	0-10 ft	Strontium		Y	
Soil	0-10 ft	Styrene		Y	
Soil	0-10 ft	Sulfate		Y	
Soil	0-10 ft	Tetrachloroethene		N	Less than 5% detection
Soil	0-10 ft	Tetrachlorophenol		Y	
Soil	0-10 ft	Thallium	N	N	Below background
Soil	0-10 ft	Tin		Y	
Soil	0-10 ft	Titanium		Y	
Soil	0-10 ft	Toluene		N	Less than 5% detection
Soil	0-10 ft	trans-1,2-Dichloroethene		N	Less than 5% detection
Soil	0-10 ft	Trichloroethene		Y	
Soil	0-10 ft	Trichlorofluoromethane		N	Less than 5% detection
Soil	0-10 ft	Vanadium	N	N	Below background
Soil	0-10 ft	Xylenes, Total		N	Less than 5% detection

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-10 ft	Zinc	N	N	Below background
Soil	0-10 ft	Zirconium	N	N	Below background
Soil	0-2 ft	1,1,1-Trichloroethane		Y	
Soil	0-2 ft	1,1,2-Trichloro-1,2,2-trifluoroethane		N	Less than 5% detection
Soil	0-2 ft	1,1,2-Trichloroethane		N	Less than 5% detection
Soil	0-2 ft	1,1-Dichloroethane		N	Less than 5% detection
Soil	0-2 ft	1,1-Dichloroethene		Y	
Soil	0-2 ft	1,2,3-Trichlorobenzene		N	Less than 5% detection
Soil	0-2 ft	1,2,4-Trichlorobenzene		N	Less than 5% detection
Soil	0-2 ft	1,2,4-Trimethylbenzene		N	Less than 5% detection
Soil	0-2 ft	1,2-Dibromoethane		N	Less than 5% detection
Soil	0-2 ft	1,2-Dichlorobenzene		N	Less than 5% detection
Soil	0-2 ft	1,2-Dichloroethane		N	Less than 5% detection
Soil	0-2 ft	1,4-Dichlorobenzene		N	Less than 5% detection
Soil	0-2 ft	1-Methyl naphthalene		N	Less than 5% detection
Soil	0-2 ft	2,4,6-Trinitrotoluene		N	Less than 5% detection
Soil	0-2 ft	2-Amino-4,6-Dinitrotoluene		N	Less than 5% detection
Soil	0-2 ft	2-Methylnaphthalene		Y	
Soil	0-2 ft	4,4'-DDD		N	Less than 5% detection
Soil	0-2 ft	4,4'-DDE		Y	
Soil	0-2 ft	4,4'-DDT		Y	
Soil	0-2 ft	Acenaphthene		N	Less than 5% detection
Soil	0-2 ft	Acenaphthylene		N	Less than 5% detection
Soil	0-2 ft	Acetone		N	Less than 5% detection
Soil	0-2 ft	alpha-BHC		N	Less than 5% detection
Soil	0-2 ft	Aluminum	N	N	Below background
Soil	0-2 ft	Ammonia-N		Y	
Soil	0-2 ft	Anthracene		Y	
Soil	0-2 ft	Antimony	N	N	Below background
Soil	0-2 ft	Aroclor 1242		N	Less than 5% detection
Soil	0-2 ft	Aroclor 1248		N	Less than 5% detection
Soil	0-2 ft	Aroclor 1254		Y	
Soil	0-2 ft	Aroclor 1260		Y	
Soil	0-2 ft	Arsenic	N	N	Below background
Soil	0-2 ft	Barium	N	N	Below background
Soil	0-2 ft	Benzene		N	Less than 5% detection

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-2 ft	Benzo(a)anthracene		Y	
Soil	0-2 ft	Benzo(a)pyrene		Y	
Soil	0-2 ft	Benzo(b)fluoranthene		Y	
Soil	0-2 ft	Benzo(ghi)perylene		Y	
Soil	0-2 ft	Benzo(k)fluoranthene		N	Less than 5% detection
Soil	0-2 ft	Benzoic acid		N	Less than 5% detection
Soil	0-2 ft	Beryllium	Y	Y	
Soil	0-2 ft	beta-BHC		N	Less than 5% detection
Soil	0-2 ft	bis(2-Ethylhexyl) phthalate		Y	
Soil	0-2 ft	Boron	N	N	Below background
Soil	0-2 ft	Bromide		N	Less than 5% detection
Soil	0-2 ft	Butyl benzyl phthalate		N	Less than 5% detection
Soil	0-2 ft	Cadmium	N	N	Below background
Soil	0-2 ft	Calcium		N	Essential Nutrient
Soil	0-2 ft	Carbon Disulfide		N	Less than 5% detection
Soil	0-2 ft	Carbon Tetrachloride		N	Less than 5% detection
Soil	0-2 ft	Chloroform		N	Less than 5% detection
Soil	0-2 ft	Chromium	N	N	Below background
Soil	0-2 ft	Chrysene		Y	
Soil	0-2 ft	cis-1,2-Dichloroethene		N	Less than 5% detection
Soil	0-2 ft	Cobalt	N	N	Below background
Soil	0-2 ft	Copper	N	N	Below background
Soil	0-2 ft	Cyanides		Y	
Soil	0-2 ft	delta-BHC		N	Less than 5% detection
Soil	0-2 ft	Dibenzo(a,h)anthracene		Y	
Soil	0-2 ft	Dibenzofuran		N	Less than 5% detection
Soil	0-2 ft	Dieldrin		N	Less than 5% detection
Soil	0-2 ft	Diesel Range Organics (C10-C24)		N	See BTEX/PAHs
Soil	0-2 ft	Diesel Range Organics (C12-C14)		N	See BTEX/PAHs
Soil	0-2 ft	Diesel Range Organics (C15-C20)		N	See BTEX/PAHs
Soil	0-2 ft	Diesel Range Organics (C21-C30)		N	See BTEX/PAHs
Soil	0-2 ft	Diesel Range Organics (C8-C11)		N	See BTEX/PAHs
Soil	0-2 ft	Diethyl phthalate		N	Less than 5% detection
Soil	0-2 ft	Dimethyl phthalate		N	Less than 5% detection
Soil	0-2 ft	Di-n-butyl phthalate		Y	
Soil	0-2 ft	Di-n-octyl phthalate		N	Less than 5% detection

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-2 ft	DioxinFuran_TEQ_Mammal	Y	Y	
Soil	0-2 ft	Endosulfan I		N	Less than 5% detection
Soil	0-2 ft	Endosulfan sulfate		N	Less than 5% detection
Soil	0-2 ft	Endrin		N	Less than 5% detection
Soil	0-2 ft	Endrin aldehyde		N	Less than 5% detection
Soil	0-2 ft	Endrin ketone		N	Less than 5% detection
Soil	0-2 ft	Fluoranthene		Y	
Soil	0-2 ft	Fluorene		N	Less than 5% detection
Soil	0-2 ft	Fluoride	N	N	Below background
Soil	0-2 ft	Formaldehyde		Y	
Soil	0-2 ft	Fuel Hydrocarbons, C12-C28		N	See BTEX/PAHs
Soil	0-2 ft	Fuel Hydrocarbons, C16-C28		N	See BTEX/PAHs
Soil	0-2 ft	Fuel Hydrocarbons, C7-C24, as heavy Hydrocarbons		N	See BTEX/PAHs
Soil	0-2 ft	gamma-BHC		Y	
Soil	0-2 ft	Gasoline Range Organics (C5-C12)		N	See BTEX/PAHs
Soil	0-2 ft	Heptachlor		N	Less than 5% detection
Soil	0-2 ft	Heptachlor epoxide		Y	
Soil	0-2 ft	Hexachlorobutadiene		N	Less than 5% detection
Soil	0-2 ft	Hexavalent Chromium		Y	
Soil	0-2 ft	HMX		N	Less than 5% detection
Soil	0-2 ft	Indeno(1,2,3-cd)pyrene		Y	
Soil	0-2 ft	Iron	N	N	Below background
Soil	0-2 ft	Lead	N	N	Below background
Soil	0-2 ft	Lithium	N	N	Below background
Soil	0-2 ft	Magnesium		N	Essential Nutrient
Soil	0-2 ft	Manganese	N	N	Below background
Soil	0-2 ft	Mercury	N	N	Below background
Soil	0-2 ft	Methyl ethyl ketone		N	Less than 5% detection
Soil	0-2 ft	Methyl isobutyl ketone (MIBK)		N	Less than 5% detection
Soil	0-2 ft	Methylene chloride		N	Less than 5% detection
Soil	0-2 ft	Mirex		N	Less than 5% detection
Soil	0-2 ft	Molybdenum	N	N	Below background
Soil	0-2 ft	m-Xylene & p-Xylene		N	Less than 5% detection
Soil	0-2 ft	Naphthalene		Y	
Soil	0-2 ft	n-Butylbenzene		N	Less than 5% detection
Soil	0-2 ft	Nickel	N	N	Below background

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil	0-2 ft	Nitrate-N		Y	
Soil	0-2 ft	Nitrate-NO3		Y	
Soil	0-2 ft	Nitrite-N		N	Less than 5% detection
Soil	0-2 ft	n-Nitrosodimethylamine		N	Less than 5% detection
Soil	0-2 ft	n-Nitrosodiphenylamine as Diphenylamine		N	Less than 5% detection
Soil	0-2 ft	o-Cresol		N	Less than 5% detection
Soil	0-2 ft	o-Xylene		N	Less than 5% detection
Soil	0-2 ft	p-Cymene		N	Less than 5% detection
Soil	0-2 ft	Pentachlorophenol		N	Less than 5% detection
Soil	0-2 ft	Perchlorate		Y	
Soil	0-2 ft	Petroleum Hydrocarbons		N	See BTEX/PAHs
Soil	0-2 ft	Phenanthrene		Y	
Soil	0-2 ft	Potassium	N	N	Below background
Soil	0-2 ft	Pyrene		Y	
Soil	0-2 ft	Selenium	N	N	Below background
Soil	0-2 ft	Silver	N	N	Below background
Soil	0-2 ft	Sodium	Y	N	Essential Nutrient
Soil	0-2 ft	Strontium		Y	
Soil	0-2 ft	Styrene		Y	
Soil	0-2 ft	Sulfate		Y	
Soil	0-2 ft	Tetrachloroethene		N	Less than 5% detection
Soil	0-2 ft	Tetrachlorophenol		Y	
Soil	0-2 ft	Thallium	N	N	Below background
Soil	0-2 ft	Tin		Y	
Soil	0-2 ft	Titanium		Y	
Soil	0-2 ft	Toluene		N	Less than 5% detection
Soil	0-2 ft	Trichloroethene		Y	
Soil	0-2 ft	Vanadium	N	N	Below background
Soil	0-2 ft	Xylenes, Total		N	Less than 5% detection
Soil	0-2 ft	Zinc	N	N	Below background
Soil	0-2 ft	Zirconium	N	N	Below background
Soil Vapor	0-10 ft	1,1,1-Trichloroethane		Y	
Soil Vapor	0-10 ft	1,1,2-Trichloro-1,2,2-trifluoroethane		Y	
Soil Vapor	0-10 ft	1,1-Dichloroethane		Y	
Soil Vapor	0-10 ft	1,1-Dichloroethene		Y	
Soil Vapor	0-10 ft	Benzene		N	Less than 5% detection

Appendix D – Table D.4-1
Chemicals of Potential Concern for Human Health
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Medium	Depth (ft.)	Chemical	Exceeds Background? (Y/N)	Selected as COPC? (Y/N)	Reason for Exclusion
Soil Vapor	0-10 ft	Carbon Tetrachloride		N	Less than 5% detection
Soil Vapor	0-10 ft	Chloroform		Y	
Soil Vapor	0-10 ft	cis-1,2-Dichloroethene		Y	
Soil Vapor	0-10 ft	Dichlorodifluoromethane		N	Less than 5% detection
Soil Vapor	0-10 ft	Isopropanol		Y	
Soil Vapor	0-10 ft	Tetrachloroethene		Y	
Soil Vapor	0-10 ft	Toluene		N	Less than 5% detection
Soil Vapor	0-10 ft	trans-1,2-Dichloroethene		N	Less than 5% detection
Soil Vapor	0-10 ft	Trichloroethene		Y	
Soil Vapor	0-10 ft	Trichlorofluoromethane		Y	
Soil Vapor	0-10 ft	Vinyl chloride		N	Less than 5% detection
Surface Water		Perchlorate		Y	

Appendix D – Table D.4-2
Human Health Risk Estimates1
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Receptor	Soil Media[2]				Soil Vapor[3]				Surface Water				Total for Site Media[4]			
	HI Range	COC[5]	Risk Range	COC	HI Range	COC	Risk Range	COC	HI Range	COC	Risk Range	COC	HI Range	COC	Risk Range	COC
Future Adult Recreator	0.00002 - 0.0003	None	1E-07 - **8E-06**	a	0.001 - 0.02	None	1E-08 - 4E-07	None	0.00002 - 0.0002	None	ND - ND	None	0.001 - 0.02	None	1.E-07 - **8.E-06**	a
Future Child Recreator	0.0003 - 0.001	None	1E-06 - **1E-05**	a	0.01 - 0.1	None	6E-08 - 8E-07	None	0.00008 - 0.0007	None	ND - ND	None	0.01 - 0.1	None	1.E-06 - **1.E-05**	a
Future Adult Resident	0.05 - 0.3	None	9E-07 - **1E-05**	a	**2** - **13**	c	**2E-05** - **3E-04**	c, d	N/A - N/A	N/A	N/A - N/A	N/A	**2** - **13**	c	**2.E-05** - **3.E-04**	a, c, d
Future Child Resident	0.4 - **2**	a	**6E-06** - **3E-05**	a, b	**11** - **37**	c, e	**6E-05** - **2E-04**	c, d	N/A - N/A	N/A	N/A - N/A	N/A	**12** - **40**	a, c, e	**7.E-05** - **2.E-04**	a, b, c, d

Notes:
1. Risk estimates shown are a sum of all exposure pathways per media; the range reported is for the central tendency and reasonable maximum exposures, respectively.
2. Soil media risk estimates are a sum of all direct exposure routes, including incidental ingestion, dermal contact, and dust inhalation.
3. Soil vapor risk estimates are sum of exposure for indoor air and ambient air.
4. Includes combined exposure from 1) direct contact with soil, 2) inhalation of indoor and ambient air vapors originating from soil gas, subsurface soil, and groundwater, and 3) dermal exposure to surface water.
5. COCs are those COPCs detected onsite with an HI > 1 or risk > 1x10-6. Only major risk contributors listed if cumulative HI >> 1 or cancer risk >> 1x10-6.

a – Dioxin/Furan TEQ
b – benzo(a)pyrene
c – trichloroethene
d – tetrachloroethene
e – cis-1,2-dichloroethene

COC – Chemical of concern
COPC – Chemical of potential concern
HI - Hazard index
N/A – Not Applicable
ND – No carcinogens identified as COPCs for this medium.

Appendix D – Table D.4-3
Human Health Risk Assessment Uncertainty Analysis
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
COPC Selection	Several VOCs were selected as soil vapor COPCs since they were directly detected in soil vapor. Other VOCs were also selected as soil vapor COPCs because they were detected in soil and/or shallow groundwater but not analyzed for in soil vapor.	Moderate	Conservative
	Petroleum hydrocarbons were not selected as COPCs when TPH-related constituents (BTEX and PAHs) were analyzed for.	Low	Realistic
Exposure Pathways	Risks associated with drinking of groundwater do not reflect current risks because the groundwater beneath the SSFL is not currently used as a drinking water source and the presence of the contamination will likely require a restriction on its future use as well.	High	Conservative
	Future land use of the site is currently undecided but may be recreational, which has lower risks than for urban residential. If land use is assumed agricultural, risk estimates may be higher.	Moderate	Uncertain
	Risk estimates for fruit and vegetable consumption are based on conservative models that are based on associations with physical-chemical properties, such as Koc.	Moderate	Conservative
EPC Calculations	In some cases, EPCs are based on some data that are over 20 years old. In these cases available analytical data may not accurately reflect current site conditions. Source concentrations assumed constant over time. Chemical concentrations may decline as a result of migration or degradation.	Low	Conservative
	Use of upper confidence limits and maximum detected concentrations will likely overestimate site risks.	Low	Conservative
	Soil vapor exposure point concentrations for several VOCs are estimated using soil to soil vapor partitioning extrapolations, introducing some degree of uncertainty.	Moderate	Conservative
	The 95% UCL concentration of some chemicals is greater than the maximum concentration, therefore the maximum was used as the EPC. This is considered to be a likely overestimation of the representative EPC because samples were collected in areas with the highest likelihood to detect the highest concentrations at the site.	Moderate	Conservative
	The maximum detected concentration of each COPC detected in groundwater was used as the EPC.	Moderate	Conservative
	The extrapolation of soil Aroclor 1254 and Aroclor 1260 concentrations to individual PCB congener concentrations introduces some uncertainty into the EPC estimates for the PCB congeners.	Low	Conservative
	Vapor migration into indoor air has been estimated using a model which is being validated for the site. Migration estimates may be changed once the model validation is complete.	Moderate	Uncertain

Appendix D – Table D.4-3
Human Health Risk Assessment Uncertainty Analysis
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
Cancer Slope Factor	Extrapolation of dose-response data from laboratory animals to humans.	High	Conservative
	Assumes that all carcinogens do not have a threshold below which carcinogenic response occurs, and therefore, any dose, no matter how small, results in some potential risk.	Moderate	Conservative
	Not all slope factors represent the same degree of certainty. All are subject to change as new evidence becomes available. Some slope factors derived by OEHHA and considerably more conservative than corresponding factors derived by USEPA (e.g. arsenic, PCBs).	Moderate	Conservative
	Cancer slope factors derived from animal studies are the upper-bound maximum likelihood estimates based on a linear dose-response curve, and therefore, overstate carcinogenic potency.	Moderate	Conservative
Reference Dose	No dermal toxicity values are available, oral toxicity factors are used for the dermal route.	Moderate	Conservative
	High degree of uncertainty in extrapolation of dose-response data from laboratory animals to humans.	High	Conservative

Notes:
BTEX – benzene, toluene, ethylbenzene, and xylenes
COPC – chemical of potential concern
EPC – exposure point concentration
Koc – Organic carbon partition coefficient
OEHHA – Office of Environmental Health Hazard Assessment
PAH – polycyclic aromatic hydrocarbon
PCB – polychlorinated biphenyls
TPH – total petroleum hydrocarbons
UCL – upper confidence limit
USEPA – United States Environmental Protection Agency
VOC – volatile organic compound

Appendix D – Table D.4-4
Chemicals of Ecological Concern - Soil
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

	Range of HQs - RME Exposure (Refined Calculations)						Range of Incremental HQs - RME Exposure (Refined Calculations)						Identification of COECs and Recommendations for Remedial Consideration	
Preferred Analyte Name	**Soil Invertebrate**	**Hermit Thrush**	**Red-Tailed Hawk**	**Deer Mouse**	**Bobcat**	**Mule Deer**	**Soil Invertebrates**	**Hermit Thrush**	**Red-Tailed Hawk**	**Deer Mouse**	**Bobcat**	**Mule Deer**	**COEC**	**Rationale**
Cyanides	No TRV	<1 -- **1.78**	<1 -- <1	No TRV -- <1	No TRV -- <1	No TRV -- <1	--	-- -- --	-- -- --	-- -- --	-- -- --	-- -- --	**Yes**	-Recommended for remedial review. Estimated risks exceed one for hermit thrush (Low TRV) only. -All other HQs <1. -Background values were not available for cyanide.
Perchlorate	No TRV	No TRV -- <1	No TRV -- <1	**24** -- **122**	<1 -- <1	<1 -- **3.8**	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	**Yes**	-Recommended for remedial review. -Estimated risks exceed one for the deer mouse. (Low and High TRV).
Aroclor 1254	<1	<1 -- **3.8**	<1 -- <1	<1 -- **3.7**	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	**Yes**	-Recommended for remedial review. -Estimated risks for Aroclor 1254 and Aroclor 1260 exceeded one for hermit thrush (Low TRV). -Estimated risks for Aroclor 1260 also exceeded one for the deer mouse (LowTRV).
Aroclor 1260	<1	<1 -- **1.3**	<1 -- <1	<1 -- <1	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A		
DioxinFuran_TEQ_Bird	<1	**3.4** -- **34**	<1 -- <1	Not CPEC -- Not CPEC	Not CPEC -- Not CPEC	Not CPEC -- Not CPEC	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	**Yes**	-Recommended for remedial review. -Estimated risks exceed one for hermit thrush and deer mouse (Low and High TRV) and mule deer (Low TRV). -Dioxin-like PCBs contribute to total risk, but are not the driver. -Concentrations of dioxin-like PCBs were derived from Aroclor 1254 and 1260 and may not reflect actual concentrations. -Chemical class Hazard Index exceeded one for hermit thrush, deer mouse, and mule deer.
DioxinFuran_TEQ_Mammal	<1	Not CPEC -- Not CPEC	Not CPEC -- Not CPEC	**21** -- **211**	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A		
DioxinFuranPCB_TEQ_Bird	<1	**13.0** -- **130**	<1 -- <1	Not CPEC -- Not CPEC	Not CPEC -- Not CPEC	Not CPEC -- Not CPEC	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A		
DioxinFuranPCB_TEQ_Mammal	<1	Not CPEC -- Not CPEC	Not CPEC -- Not CPEC	**43** -- **430**	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A		
2,4-Dinitrophenol	No TRV	**15.5** -- **155**	<1 -- <1	<1 -- **21**	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	No	-Estimated risks exceeded one for hermit thrush, deer mouse, and mule deer (Low and High TRV). -Chemical was never detected and estimates were based on maximum non-detect level (max SQL). -One SQL (200 mg/kg) resulted in risk estimates exceeding one. Most SQLs were below 1. -Actual presence and concentration is unknown.
4,4'-DDE	<1	<1 -- **2.3**	<1 -- <1	<1 -- <1	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	**Yes**	-Recommended for remedial review. -Estimated risks exceed one for hermit thrush (Low TRV)
4,4'-DDT	<1	<1 -- **6.2**	<1 -- <1	<1 -- <1	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	**Yes**	-Recommended for remedial review. -Estimated risks exceed one for hermit thrush (Low TRV)
bis(2-Ethylhexyl) phthalate	No TRV	No TRV -- **3.5**	No TRV -- <1	<1 -- <1	<1 -- <1	<1 -- <1	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	**Yes**	-Recommended for remedial review. -Estimated risks exceed one for hermit thrush (Low TRV)
Hexachlorobenzene	No TRV	**8.2** -- **12**	<1 -- <1	**588** -- **2132**	<1 -- <1	**1.8** -- **6.5**	N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	N/A -- N/A	No	-Estimated risks exceeded one for hermit thrush, deer mouse, and mule deer (Low and High TRV). -Chemical was never detected and estimates were based on maximum non-detect level (max SQL). -One SQL (200 mg/kg) resulted in risk estimates exceeding one. Most SQLs were below 1. -Actual presence and concentration is unknown.

Notes:
N/A – not applicable or not available
HQs listed are based on Refined Screen
Low hazard quotient – EPC/High TRV
High hazard quotient – EPC/Low TRV
COEC – chemical of ecological concern
CTE – central tendency exposure
HI – hazard index
HQ – hazard quotient
RME – reasonable maximum exposure
TRV – toxicity reference value

Appendix D – Table D.4-5
Chemicals of Ecological Concern - Soil Vapor
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Preferred Analyte Name	Range of HQs (RME Exposure)			Identification of COECs and Recommendations for Remedial Consideration	
				COEC	Rationale
1,1,1-Trichloroethane	**1.9**	--	**9.6**	**Yes**	-Recommended for remedial review. -Estimated risks to burrowing receptors exceeded one for both Low and High TRV.
1,1-Dichloroethene	<1	--	**34**	**Yes**	-Recommended for remedial review. -Estimated risks to burrowing receptors exceeded one (Low TRV).
cis-1,2-Dichloroethene	<1	--	**8.4**	**Yes**	-Recommended for remedial review. -Estimated risks to burrowing receptors exceeded one (Low TRV).
Trichloroethene	**21**	--	**36**	**Yes**	-Recommended for remedial review. -Estimated risks to burrowing receptors exceeded one for both Low and High TRV.
Carbon Disulfide	<1	--	**2.9**	**Yes**	-Recommended for remedial review. -Estimated risks to burrowing receptors exceeded one (Low TRV).

Notes:
HQs listed are based on Refined Screen
COEC – chemical of ecological concern
CTE – central tendency exposure
ESL – ecological screening level
HQ – hazard quotient
RME – reasonable maximum exposure
SQL – sample quantitation limit

Appendix D – Table D.4-6
Ecological Risk Assessment Uncertainty Analysis
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
Problem Formulation			
Fate and Transport	It is assumed that chemical concentrations will not change over time, and that concentrations are constant during the exposure duration. Natural attenuation and/or other degradation processes may be significant in some areas resulting in an over-estimation of exposure.	Moderate	Over-estimation of exposure/risk
Data Collection/Analysis	Variability in analyses, laboratories, representativeness of samples, sampling errors, and homogeneity of the sample matrix can influence quality and quantity of data used in the risk assessment. Data were validated, but historical sampling programs may not have had the same standards as more recent ones.	Unknown	Over- or under-estimation of exposure/risk
Data Collection/Analysis	Detection Limits. Historical data were noted to have overly high detection limits, especially in regard to metals. Recent sampling was designed to have detection limits meeting ESLs. However, as data are combined into the EPCs, high detection limits may influence the resulting mean and 95UCLs.	Moderate	Over-estimation of exposure/risk
Data Collection/Analysis	Limited numbers of surface water samples were available for risk assessment purposes.	Moderate	Under-estimation of exposure/risk
Representative Species	Representative species were selected to reduce uncertainty; however, differences among species including physiology, reproductive biology, and/or foraging habits can result in different exposures and sensitivities for different receptors.	Low	Over- or under-estimation of exposure/risk
CPEC Selection	Background Comparison. Background evaluation was based on the WRS test. For some inorganics, the WRS test indicated that the site exceeded background, but site maximum, CTE, and/or RME concentrations were similar to or below background maximum, CTE, and/or RME concentrations.	Low	Over-estimation of exposure/risk

Appendix D – Table D.4-6
Ecological Risk Assessment Uncertainty Analysis
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
CPEC Selection	VOC Comparison. VOCs that were detected in soil but were not analyzed for in soil gas were retained as CPECs under the matrix "Modeled Soil Vapor". Concentrations were modeled from soil concentrations using SRAM Appendix G Equation 18.	Low	Over-estimation of exposure/risk
CPEC Selection	SQL Comparison. Chemicals that were never detected at the site were included as CPECs if they met the criteria in the SQL screening process: a) SQL>ESL b) at least 5 samples were collected c) at least 2 other chemicals in the same chemical class were detected.	Low	Over-estimation of exposure/risk
Exposure Pathway Analysis	Dermal and inhalation (for surface-dwelling animals) exposure pathways were not quantified.	Low	Under-estimation of exposure/risk
Analysis			
Wildlife Exposure Factors	Assumptions regarding exposure - likelihood, contact with contaminated media, concentrations at exposure points, and frequency/duration of contact are based on available information and assumptions of wildlife habits at the SSFL. Assumptions tend to simplify actual site conditions and may over- or under-estimate actual exposure.	Moderate	Over- or under-estimation of exposure/risk
Bioaccumulation Factors	Site-specific data on CPEC concentrations in wildlife foods were used to derive BAFs for a limited number of CPECs (SRAM 2005). For the remaining CPECs, literature-based BAFs and regression models were used to estimate bioaccumulation. The suitability of these bioaccumulation models to conditions at the site is unknown. Therefore, concentrations of CPECs in biota present at the site and, consequently, the dietary exposures of birds and mammals, may be either higher or lower than values estimated in the ERA.	Moderate	Over- or under-estimation of exposure/risk
Bioavailability	Bioavailability of CPECs was assumed to be 100 percent. This likely overestimates risk to receptors at the site.	Low	Over-estimation of exposure/risk

Appendix D – Table D.4-6
Ecological Risk Assessment Uncertainty Analysis
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
Area Use Factors	Area use factors (AUFs) were applied to exposure estimates for wide-ranging receptors (red-tailed hawk, bobcat, and mule deer) in the "refined" assessment to account for the foraging range of the receptor. Use of the site may be greater or less than that predicted by the AUF.	Low	Over- or under-estimation of exposure/risk
Exposure Point Concentrations	CTE EPC. CTE EPC is based on the arithmetic mean per the SRAM (MWH 2005). This assumes normal distribution. In some cases the CTE was >RME and/or CTE was >Maximum detect. The mean (CTE) could be biased high by higher detection limits from historic data. The RME EPC was used for the CTE EPC when the CTE was >RME or CTE was >Maximum.	Moderate	Over-estimation of exposure/risk
Exposure Point Concentrations	RME EPC. The RME EPC is the 95UCL, unless the 95UCL exceeds the maximum detect in which case the maximum detect is used as the RME EPC. Use of the maximum detect is considered to be a likely overestimation of the representative exposure point concentration because samples were collected in areas likely to have the highest concentrations at the site.	Moderate	Over-estimation of exposure/risk
Exposure Point Concentrations	Soil vapor concentrations extrapolated from soil concentrations were used to calculate soil vapor EPC.	Moderate	Over- or under-estimation of exposure/risk
Exposure Point Concentrations	Estimation of soil vapor concentrations overstates actual burrow concentrations: 1) Model is conservative. 2) Air flow in burrows is not accounted for. 3) Model does not account for attenuation between depth to soil and 0-6 ft bgs interval for burrows.	Moderate	Over- or under-estimation of exposure/risk
Toxicity Reference Values	Toxicity data were not available for all CPECs or media. CPECs for which toxicity data were unavailable were not evaluated, or surrogate toxicity data were used. Risks may be overestimated or underestimated.	Moderate	Over- or under-estimation of exposure/risk

Appendix D – Table D.4-6
Ecological Risk Assessment Uncertainty Analysis
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
Toxicity Reference Values	Literature-derived toxicity data from laboratory studies were the only toxicity data used to evaluate risk to all receptor groups. Effects observed in laboratory species were assumed to be indicative of effects that would occur in wild species. The suitability of this assumption is unknown. Therefore, risk may be either overestimated or underestimated.	Moderate	Over- or under-estimation of risks
Toxicity Reference Values	There is uncertainty in extrapolation of dose-response data from laboratory animals to other wildlife.	Moderate	Over- or under-estimation of risks
Toxicity Reference Values	Use of standardized uncertainty factors to estimate chronic NOAEL-equivalent TRVs.	Moderate	Over- or under-estimation of risks
Toxicity Reference Values	Use of chronic NOAEL-equivalent TRVs may overestimate risk.	High	Over-estimation of exposure/risk
Toxicity Reference Values	TRVs based on high dose laboratory exposures (LD50) were adjusted to a NOAEL-equivalent TRV. The more variables that are normalized using uncertainty factors, the greater the uncertainty in the resulting value.	Moderate	Over-estimation of exposure/risk
Toxicity Reference Values	Sources of TRVs occasionally apply different uncertainty factors than those used in the SRAM to adjust a study to what they label a “Chronic NOAEL”. When details of the study were available, SRAM-specified uncertainty factors were used. If the details of the study were not presented or were not sufficiently complete to make a determination, then the interpretations made by the source document were used.	Low	Over- or under-estimation of risks

Appendix D – Table D.4-6
Ecological Risk Assessment Uncertainty Analysis
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
Risk Characterization			
Risk Estimation	Potential ecological risks were quantified using the HQ approach. The magnitude of the HQ indicates potential for ecological risk, but is not an exact estimation of risk. For example, the actual risk from a chemical with an HQ of 70 could be less than that for a chemical with an HQ of 20 because of uncertainties involved in estimating exposure, selection of effects criteria (TRVs), or field conditions affecting exposure.	Moderate	Over- or under-estimation of risks
Risk Estimation	Data necessary to estimate potential risks from all pathways for all chemicals in the food-chain uptake model were not always available. For these chemicals and/or areas, the food-chain uptake model was completed using the available data.	Moderate	Under-estimation of exposure/risk
Risk Estimation	Risks estimated for exposure to some inorganics may represent a background risk, rather than a site-related risk. Although the WRS test sometimes indicated that the site exceeded background, it was sometimes found that site values were less than or comparable to the background Maximum, CTE, and/or RME concentrations.	Moderate	Over- or under-estimation of exposure/risk

Notes:
BAF – bioaccumulation factor
CPEC – chemical of potential ecological concern
CTE – central tendency exposure
EPC – exposure point concentration
ERA – ecological risk assessment
ESL – ecological screening level
LD50 – lethal doses to 50% of test animals
NOAEL – no observed adverse effect level
RME – reasonable maximum exposure
SQL – sample quantitation limit
TRV – toxicity reference value
UCL – upper confidence limit on the mean
VOC – volatile organic chemical
WRS – Wilcoxon Rank Sum test

Appendix D – Table D.5-1
Surficial Media Site Action Recommendations
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

Chemical Use Area	Chemical Use Area Name	CMS Area[2]	Recommended for further consideration in CMS based on:		
			Residential Receptor [1]	Recreational Receptor [1]	Ecological Receptor [1]
1	Area I Burn Pit RFI Site	AIBP-1 AIBP-2 AIBP-3	HRA COCs: **Soil:** Dioxin/Furan TEQ benzo(a)pyrene ***Soil Vapor:*** Trichloroethene Tetrachloroethene cis-1,2-dichloroethene	HRA COCs: **Soil:** Dioxin/Furan TEQ benzo(a)pyrene ***Soil Vapor:*** None ***Surface Water:*** None	***Soil Results***

Any HQ>1?	COEC	Rationale
Cyanides	Yes	ERA-1
Perchlorate	Yes	ERA-1
Aroclor 1254	Yes	ERA-2
Aroclor 1260	Yes	ERA-2
Dioxin/Furan TEQ Mammal	Yes	ERA-3
Dioxin/Furan TEQ Bird	Yes	ERA-3
Dioxin/Furan/PCB TEQ Bird	Yes	ERA-3
Dioxin/Furan/PCB TEQ	Yes	ERA-3
Mammal	No	ERA-4
2,4-dinotrophenol	Yes	ERA-1
4,4'-DDE	Yes	ERA-1
4,4'-DDT	Yes	ERA-1
bis(2-Ethylhexyl)phthalate	No	ERA-4
Hexachlorobenzene		

Soil Vapor Results

Any HQ>1?	COEC	Rationale
1,1,1-Trichloroethane	Yes	ERA-5
1,1-Dichloroethene	Yes	ERA-5
cis-1,2-Dichloroethene	Yes	ERA-5
Trichloroethene	Yes	ERA-5
Carbon Disulfide	Yes	ERA-6

Surface Water

Any HQ>1?	COEC	Rationale
None	None	ERA-7

Notes:
1. NFA - Indicates area is recommended for No Further Action (NFA) for the CUA; not recommended for CMS evaluation.
2. CMS recommendations are based on compounds considered risk drivers (excess cancer risk > 1 x 10-6 or hazard index > 1) and/or significant risk contributors.

Ecological COEC Receptor Rationale:

ERA-1	Estimated risks >1 for 1 or more receptors.
ERA-2	Estimated risks >1 for 1 or more receptors. Chemical class Hazard Index >1.
ERA-3	Estimated risks >1 for 1 or more receptors. Chemical class Hazard Index >1. Dioxin-like PCBs (which are modeled from Aroclors) increase risk estimates and may overestimate actual risks.
ERA-4	Chemical was never detected and estimates were based on maximum non-detect level. Actual presence and concentration is unknown.
ERA-5	Estimated risks to burrowing receptors exceeded one.
ERA-6	Retained because estimated risks to burrowing receptors exceeded one, however, risk estimates were based on concentrations modeled from soil. Analyte was only detected once in soil. Presence in soil vapor is unlikely.
ERA-7	No estimated risks >1

Appendix D – Table D.5-2
Summary of Site Surficial Media CMS Recommendations
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

CMS Area	Description	Chemical Risk Drivers and Contributors	Rationale
AIBP-1	Western hummocky area, located in the northwest portion of the Area I Burn Pit RFI Site.	Soil: Aroclor 1254 Aroclor 1260 benzo(a)pyrene Dioxin/Furan TEQ Mammal	- Aroclor 1254, Aroclor 1260, and dioxins/furans contribute to unacceptable risk to the hermit thrush and deer mouse. - benzo(a)pyrene and dioxins contribute to unacceptable human health risk through exposure to soil (residential and recreational receptors).
AIBP-2	Earth Ponds 1 and 2 and down slope migration pathway.	Soil vapor: 1,1-DCE PCE TCE Soil: 4,4'-DDE Aroclor 1254 Aroclor 1260 benzo(a)pyrene bis(2-ethylhexyl) phthalate Dioxin/Furan TEQ Mammal perchlorate	- PCE and TCE in soil vapor contribute to unacceptable human health risk through the inhalation of indoor air pathway (PCE and TCE) and ambient air pathway (TCE) for residential receptors. 1,1-DCE and TCE in soil vapor contribute to unacceptable ecological risk to burrowing receptors. - 4,4'-DDE and bis(2-ethylhexyl) phthalate contribute to unacceptable risk to the hermit thrush. - Aroclor 1254, Aroclor 1260, and dioxins/furans contribute to unacceptable risk to the hermit thrush and deer mouse. - benzo(a)pyrene and dioxins contribute to unacceptable human health risk through exposure to soil (residential and recreational receptors). - Perchlorate contributes to unacceptable risk to the deer mouse and mule deer.

Appendix D – Table D.5-2
Summary of Site Surficial Media CMS Recommendations
Santa Susana Field Laboratory – Area I Burn Pit RFI Site

CMS Area	Description	Chemical Risk Drivers and Contributors	Rationale
AIBP-3	Central Area: Thermal Treatment Facility, including 1982 excavation areas 1 through 5, geophysical anomalies, Burn Pits 1 and 2, Concrete Ponds 2 and 3, and Earth Pond 3	<u>Soil vapor:</u> 1,1,1-TCA 1,1-DCE cis-1,2-DCE PCE TCE <u>Soil:</u> 4,4'-DDE 4,4'-DDT Aroclor 1254 Aroclor 1260 benzo(a)pyrene bis(2-ethylhexyl) phthalate Dioxin/Furan TEQ Mammal Dioxin/Furan/PCB TEQ Mammal perchlorate	- VOCs in soil vapor contribute to unacceptable human health risk through the inhalation of indoor air pathway (cis-1,2-DCE, PCE, TCE) and inhalation of ambient air pathway (TCE) for residential receptors, and contribute to unacceptable ecological risk to burrowing receptors in soil vapor (1,1,1-TCA, 1,1-DCE, cis-1,2-DCE, TCE). - 4,4'-DDE and 4,4'-DDT contributed to unacceptable risk to the hermit thrush. - Aroclor 1254, Aroclor 1260, and dioxins/furans contribute to unacceptable risk to the hermit thrush and deer mouse. - benzo(a)pyrene and dioxins/furans contribute to unacceptable human health risk through exposure to soil (residential and recreational receptors). - Perchlorate contributed unacceptable risk to the deer mouse and mule deer.

Notes:
HQ – hazard quotient
Dioxin/Furan TEQ – toxicity equivalency quotient (sum of dioxin congener impacts)