Baseline Health Risk Assessment Work Plan Revision 0

Nevada Environmental Response Trust Site; Henderson, Nevada

Prepared for:
Nevada Environmental Response Trust

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ENVIRON

Baseline Health Risk Assessment Work Plan, Revision 0

Nevada Environmental Response Trust
(Former Tronox LLC Site)
Henderson, Nevada

Nevada Environmental Response Trust (Trust) Representative Certification
I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of the Trust. Based on my own involvement and/or my inquiry of the person or persons who manage the system(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee not individually, but solely as President

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Date: 2/20/14

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Responsible Certified Environmental Manager (CEM) for this project

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and, to the best of my knowledge, comply with all applicable federal, state and local statutes, regulations and ordinances.

February 28, 2014

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Acronyms and Abbreviations

ADD	average daily dose
AECOM	AECOM, Inc.
AP	ammonium perchlorate
ATSDR	Agency for Toxic Substances and Disease Registry
BCA	bias-corrected accelerated
BCL	basic comparison level
bgs	below ground surface
BHRA	baseline health risk assessment
BMI	Black Mountain Industrial
BRC	Basic Remediation Company
Cal/EPA	California Environmental Protection Agency
COPC	chemical of potential concern
CSM	conceptual site model
DRO	diesel range organics
DQA	data quality assessment
DVSR	Data Validation Summary Report
EC	exposure concentration
ECA	Excavation Control Area
ECAO	Environmental Criteria and Assessment Office
ENSR	ENSR Corporation
ENVIRON	ENVIRON International Corporation
EPC	exposure point concentration
Exponent	Exponent, Inc.
Facility Area	The Site, excluding Parcels C, D, F, G, and H
ft^3	cubic feet
FS	Feasibility Study
FSP	Field Sampling Plan
GRO	gasoline range organics
GWETS	Groundwater Extraction and Treatment System
HCB	hexachlorobenzene
HEAST	Health Effects Assessment Summary Tables

HI	hazard index
HRA	health risk assessment
IRIS	Integrated Risk Information System
ITRC	Interstate Technology & Regulatory Council
IWF	Interceptor Well Field
KM	Kaplan-Meier
LOU	Letter of Understanding
NAPL	non-aqueous phase liquid
NCEA	National Center for Environmental Assessment
NDEP	Nevada Division of Environmental Protection
Neptune	Neptune and Company
NERT	Nevada Environmental Response Trust
Northgate	Northgate Environmental Management, Inc.
OCH	organochlorine herbicide
OCP	organochlorine pesticide
OPP	organophosphate pesticide
ORO	oil range organics
OSSM	Olin Chlor-Alkali/Stauffer/Syngenta/Montrose (formerly POSSM)
PCB	polychlorinated biphenyl
PEF	particulate emission factor
ppb	parts per billion
PPRTV	Provisional Peer Reviewed Toxicity Value
ppt	parts per trillion
Q/C_{vol}	dispersion factor for volatiles emitted from soil
RAW	Removal Action Work Plan
RI	remedial investigation
RZ	remediation zone
Site	Nevada Environmental Response Trust (NERT) site
SLERA	Screening-Level Ecological Risk Assessment
SRC	site-related chemical
SRG	soil remediation goal
Study Area	the Site and the downgradient plume
SVOC	semivolatile organic compound

TEQ	toxicity equivalent
TIMET	Titanium Metals Corporation
TPH	total petroleum hydrocarbon
Tronox	Tronox LLC
Trust	Nevada Environmental Response Trust
UCL	upper confidence limit
USEPA	US Environmental Protection Agency
VOC	volatile organic compound
WBZ	water-bearing zone
Work Plan	2014 BHRA Work Plan
yd^3	cubic yard

1.0 Introduction

This Baseline Health Risk Assessment (BHRA) Work Plan (2014 BHRA Work Plan or Work Plan) has been prepared by ENVIRON International Corporation (ENVIRON) on behalf of the Nevada Environmental Response Trust (the Trust or NERT) for the Facility Area within the Nevada Environmental Response Trust Site (the Site) located in Henderson, Nevada. The Facility Area comprises a 265-acre portion of the Site that excludes Parcels C, D, F, G, and H. The Work Plan is being submitted to the Nevada Division of Environmental Protection (NDEP) as a component of the Remedial Investigation/Feasibility Study (RI/FS) Work Plan prepared for the Site and previously submitted to NDEP (ENVIRON 2014a).

1.1 Background

The Site, including the Facility Area, has been the subject of extensive environmental investigations since the 1970s, during which time health risk assessments (HRAs) have been prepared for specific subareas of the Site to evaluate potential risks associated with soil and soil gas exposure pathways. In 2010, Northgate Environmental Management, Inc. (Northgate) prepared a HRA Work Plan (the 2010 HRA Work Plan or 2010 Work Plan) that described the risk assessment methodology for evaluating soil and soil gas exposure pathways (Northgate and Exponent, Inc. [Exponent] 2010a) in future HRAs prepared for the Site. The 2010 HRA Work Plan was approved by NDEP on March 16, 2010 (NDEP 2010c).

In comments on ENVIRON's first submittal of the RI/FS Work Plan (ENVIRON 2012b), NDEP suggested that the Trust include the 2010 HRA Work Plan as part of the RI/FS Work Plan and add information not included in the 2010 HRA Work Plan (see Appendix A of ENVIRON 2014a). Following additional discussion with NDEP, it was agreed that a separate BHRA Work Plan would be prepared that would incorporate all relevant elements from the 2010 HRA Work Plan and identify relevant additions or revisions. Specifically, as noted in ENVIRON's response to NDEP Comment #5, this 2014 BHRA Work Plan updates background information on the Facility Area, presents an updated conceptual site model (CSM), and presents preliminary summary statistics for the soil and soil gas data sets representative of current conditions at the Facility Area and which are available for the BHRA. In addition, the specific subareas and media within the Facility Area that will be evaluated in the BHRA are identified.

The following elements from the 2010 HRA Work Plan are incorporated by reference into this Work Plan:

- Data usability evaluation;
- Selection of chemicals of potential concern (COPCs);
- Exposure assumptions and exposure equations;
- Receptor populations and associated intake parameters; and
- Risk/hazard equations.

Updates or proposed revisions to the above elements are noted in this Work Plan and an annotated copy of the text of the 2010 HRA Work Plan is included as Appendix B[1], with notations indicating the specific elements that are being revised or updated.

The following new or revised elements are identified:

- **Guidance Documents.** The list of US Environmental Protection Agency (USEPA) and NDEP guidance documents presented in the 2010 Work Plan has been updated (Section 1.3).
- **CSM.** The 2010 CSM has been significantly revised to reflect current conditions at the Facility Area (and downgradient groundwater Study Area[2]) and to address comments from NDEP on the preliminary CSM included in the 2012 RI/FS Work Plan (ENVIRON 2012b). The updated CSM identifies additional transport pathways, considers off-site receptors (not previously considered in the 2010 HRA Work Plan), and considers interim soil removal actions that have been completed since 2010 (see Section 2.3).
- **Soil Data Set for Risk Assessment.** An extensive evaluation of analytical results from soil samples remaining at the Facility Area following completion of the 2011 interim soil removal action and 2010 interim manganese tailings removal action has been conducted. This Work Plan identified available sources of data (Section 3.1.1) and presents preliminary summary statistics for the risk assessment "post-excavation" data set (Section 3.3) (also referred to as "remaining soil samples"). In addition, the Work Plan identifies additional soil samples that will be collected as part of the RI data gaps investigation (Section 2.4).
- **Soil Gas Data Set for Risk Assessment.** The Work Plan identifies available sources of data (Section 3.1.2), and a statistical summary of the preliminary soil gas data set for the Facility Area (Section 3.3). In addition, the process for identifying additional soil gas samples for collection as part of the RI data gaps investigation is described in Section 2.4.
- **Soil Background Data Sets.** The background data sets for statistical evaluation of metals and radionuclides have been redefined, consistent with comments received from NDEP on risk assessments conducted and submitted to NDEP since 2010 (see Section 4.1.1 and Appendix C).
- **Target Goal for Dioxins and Dioxin-like Compounds**. The 2010 Work Plan identified a target goal for dioxin toxicity equivalents (TEQs) of 1 part per billion (ppb) (or 1,000 parts per trillion, or ppt). Since then, Northgate derived a site-specific goal of 2,700 ppt for dioxin TEQs, based on a soil bioaccessibility study (Northgate 2010f) (Section 4.1.1).

[1] Appendix A is reserved for responses to NDEP comments on the BHRA Work Plan.

[2] Consistent with the RI/FS Work Plan, the groundwater study area is comprised of the 346-acre Site, including Parcels C, D, F, G, and H, and the downgradient plume.

- **Air Dispersion Modeling.** In the absence of monitoring data representative of site conditions during routine operations, concentrations of COPCs associated with airborne particulates and volatile organic compounds (VOCs) emitted from soil gas will be evaluated using standard air dispersion modeling (Section 4.2.1).
- **Toxicity Values.** The hierarchy for selection of toxicity values is revised for consistency with that presented in current NDEP's Basic Comparison Levels (BCLs) user's guidance (Section 4.3).
- **Data Quality Assessment (DQA).** The DQA approach is revised to allow for flexibility in the selection of the equations that will be used to conduct the DQA (Section 4.5).

1.2 Scope of the BHRA

The BHRA will evaluate potential risks associated with soil, soil gas, and surface water. Complete, direct contact pathways have not been identified for groundwater, which is not used as a source of drinking water. The primary on-site concern for groundwater is the vapor intrusion pathway, which will be evaluated using soil gas data. Off-site contaminant transport and surfacing of groundwater or groundwater discharges to off-site drainages or lakes, such as Las Vegas Wash or Lake Mead, will be addressed through the surface water evaluation. Leaching of soil contaminants to groundwater is being addressed as a separate evaluation within the Site RI/FS process. The RI/FS Work Plan has established a long-term Remedial Action Objective of restoration for the downgradient groundwater plume.

1.2.1 Soils

All surface and near surface soils[3] in the Facility Area will be evaluated with the exception of soils in remediation zone A (RZ-A) (see Figures 2a and 2b). This includes the following areas:

- RZ-B, RZ-C, RZ-D and RZ-E;
- Small areas within the Facility Area that were not included in the RZs;
- The small triangular-shaped area just south of Warm Springs Road; and
- Parcel E.

As described in Section 2.3, the Facility Area was divided into five separate RZs for purposes of soil excavation activities. RZ-A was not included in the interim removal program because a soil HRA completed for RZ-A (Northgate 2010h, approved by NDEP on August 20, 2010) indicated that exposures to residual chemicals in the upper 10 ft of soil were below NDEP's point of departure for noncancer effects and cancer risks. Based on these results, RZ-A soils will not be evaluated in the BHRA.

Areas referred to as Parcels A, B, I, and J were sold in 2008 and 2013 and are no longer part of the Site. The remaining area of the Site includes Parcels C, D, E, F, G, and H, which are generally located towards the Site perimeter, to the north, west, and south (Figure 2a). The Parcels have generally been investigated on a timeline separate from the environmental

[3] Surface and near surface soils are defined as soils from 0 to 10 feet below the current ground surface.

investigations of the Facility Area as described in the RI/FS Work Plan. Only limited investigations of Parcel E have been conducted due to the continued operation of the Olin (also referred to as the Olin Chlor-Alkali/Stauffer/-Syngenta/Montrose [OSSM]) groundwater treatment system (NDEP 2010a). Thus, for purposes of this HRA Parcel E is included in the Facility Area.

1.2.2 Soil Gas

All soil gas within the Facility Area will be evaluated (see Figures 2a and 2b). This includes the following areas:

- RZ-A, RZ-B, RZ-C, RZ-D and RZ-E;
- Small areas within the Facility Area that were not included in the RZs;
- The small triangular-shaped area just south of Warm Springs Road; and
- Parcel E.

As described in Section 2.2.2, soil gas was investigated in May 2008 during the Phase B soil gas investigation (ENSR Corporation [ENSR] 2008a, approved by NDEP in March 2008). Soil gas samples were collected in RZ-A through RZ-E and in Parcel E. No soil gas samples were collected in the triangular-shaped area just south of Warm Springs Road. Northgate and Exponent (2010b) conducted a *Site-Wide Soil Gas Human Health Risk Assessment* (2010 Site-Wide Soil Gas HRA), which evaluated the soil gas samples collected in May 2008, but the HRA was not reviewed by NDEP. The BHRA will update the draft 2010 Site-Wide Soil Gas HRA for consistency with the modeling parameters (updated since the 2010 HRA Work Plan was prepared) used in the *Soil Gas Investigation Report and Health Risk Assessment for Parcels C, D, F, G and H, Revision 0* (2013 Parcels Soil Gas HRA) (ENVIRON 2013b).

1.2.3 Surface Water

Perchlorate-impacted groundwater discharges from the Site to surface water at Las Vegas Wash, which empties into Lake Mead. Lake Mead is the source of approximately 90 percent of the drinking water in Southern Nevada (Las Vegas Water District 2012). Further, Lake Mead and the downstream Colorado River serve as municipal and agricultural water sources for areas of California, Arizona, and Mexico. The NERT Groundwater Extraction and Treatment System (GWETS)includes pumping of perchlorate-impacted groundwater from three extraction well fields to mitigate this exposure pathway. The Las Vegas Water District reports the amount of perchlorate entering Las Vegas Wash has been reduced by approximately 90 percent with the operation of extraction wells by NERT and other neighboring facilities (Las Vegas Water District 2012). Nevertheless, exposure to perchlorate (and possibly other site-related chemicals) in Las Vegas Wash and Lake Mead is a complete exposure pathway for off-site recreational users and residents serviced by the Las Vegas Water District, as well as recreational users and residents in California, Arizona, and Mexico served by Lake Mead and the Colorado River. This exposure pathway will be evaluated in the BHRA by comparing surface water concentrations to the Nevada Provisional Action Level for perchlorate (NDEP 2011a).

1.2.4 Ecological Impacts

Following aquifer restoration, the Trust will conduct an ecological risk assessment for impacted areas downgradient of the Facility Area (which includes Las Vegas Wash), as requested by NDEP in comments on the 2012 RI/FS Work Plan (NDEP 2013c) and as stated in the October 2013 Regional Groundwater Goals and Directives (NDEP 2014). The Trust also proposes to perform a Screening-Level Ecological Risk Assessment (SLERA) of the Facility Area as part of the BHRA process. If NDEP approves this proposal and the associated implementation budget, ENVIRON will revise this BHRA work plan to incorporate the SLERA.

1.3 Risk Assessment Guidance

The BHRA approach presented in this Work Plan is consistent with risk assessment guidance from the USEPA. Additionally, NDEP guidance and NDEP correspondence applicable to risk assessment, as provided at NDEP's Technical Topics web site[4] will be followed. Documents that will guide the preparation of the Data Validation Summary Report (DVSR) and BHRA include, but are not limited to, the following:

- Guidance documents listed in Sections 2.0 and 4.1 of the 2010 HRA Work Plan;
- *Superfund Guidance for Human Health Risk Assessment* (USEPA 1997, 1999);
- *Guidance for Data Usability in Risk Assessment (Parts A and B)* (USEPA 1992a,b);
- *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)* (USEPA 2002a);
- *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings* (USEPA 2004a);
- *Technical and Regulatory Guidance, Vapor Intrusion Pathway: A Practical Guideline* (Interstate Technology & Regulatory Council [ITRC] 2007);
- *Statistical Analysis Recommendations for Field Duplicates and Field Splits, BMI Plant Sites and Common Areas Projects, Henderson, Nevada* (NDEP 2008b);
- *Guidance on the Development of Summary Statistics Tables, BMI Plant Sites and Common Area Projects, Henderson, Nevada* (NDEP 2008c);
- *Supplemental Guidance on Data Validation, BMI Plant Sites and Common Areas Projects, Henderson, Nevada* (NDEP 2009);
- *Soil Physical and Chemical Property Measurement and Calculation Guidance, BMI Plant Sites and Common Areas Projects, Henderson, Nevada* (NDEP 2010b);
- *Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Complex and Common Areas in Henderson, Nevada* (NDEP 2010f);
- *Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas, Henderson, Nevada* (NDEP 2012a); and
- *Guidance* on *Unified Chemical Electronic Data Deliverable Format, BMI Plant Sites and Common Areas Projects, Henderson, Nevada* (NDEP 2013b).

[4] http://ndep.nv.gov/bmi/technical.htm

2.0 Site and Facility Area Background

The approximately 346-acre Site is located within Sections 12 and 13 of Township 22 S, Range 62 E within the Black Mountain Industrial (BMI) Complex in unincorporated Clark County, Nevada (Figure 1). The area comprising the BMI Complex (including the Site) is surrounded by the City of Henderson. The Facility Area occupies approximately 265 acres of the Site.

The following sections provide an overview of the Site and Facility Area and briefly describe field investigations and interim removal actions conducted within the Facility Area since approximately 2006. The reader is referred to the RI/FS Work Plan for detailed descriptions of the operational history, physical setting, climate, geology and hydrogeology, and surface water at the Site.

2.1 Site Description

The property comprising the Site, including the Facility Area, has a long, complex ownership and operational history. The Site has been the location of industrial operations since 1942 when it was developed by the US government as a magnesium plant to support World War II operations. Following the war, the Site continued to be the location of industrial activities, including production of perchlorates, boron, and manganese compounds. Former industrial and waste management activities conducted at the Site, as well as those conducted at adjacent properties, resulted in contamination of environmental media at the Site, including soil, groundwater, and surface water.

Tronox LLC (Tronox) most recently owned and operated the Site until February 14, 2011, on which date the Trust took title to the Site in conjunction with the settlement of Tronox's bankruptcy proceeding. Tronox currently leases approximately 114 acres of the Site from the Trust, on which it continues to operate its chemical manufacturing business. As shown on Figure 2a, the lease area is located within the Facility Area; three subtenants to Tronox also conduct operations within the area.

The Site, including the Facility Area, has been the subject of extensive environmental investigations and interim removal actions since the 1970s. The on-site Hazardous Waste Landfill was closed and capped in 1985. A groundwater treatment system for removal of hexavalent chromium from groundwater was constructed in 1987. In 1994, NDEP issued a Letter of Understanding (LOU) identifying 69 LOU potential source areas or "items of interest" (LOU-1 through LOU-69) (NDEP 1994). Subsequent to the issuance of the LOU, an additional potential source area, the former US Vanadium site, was identified during planning for the Phase B 2008 investigation (NDEP 2011b). Although not formally designated as an LOU, the US Vanadium site is hereafter referred to as LOU-70. In 1997, perchlorate, later shown to originate, in part, from the Site, was detected in Las Vegas Wash and the Colorado River (NDEP 2011b), and in 1999, an additional groundwater treatment system for removal of perchlorate was constructed. At the end of 2010, Tronox excavated and disposed of the waste material from the onsite landfill. In 2010 and 2011, over 500,000 cubic yards (yd^3) of impacted soils and tailings were removed from the Site (and more specifically, from areas within the Facility Area) and disposed of at an off-site location (ENVIRON 2012a and Northgate 2012).

2.2 Previous Investigations

The BHRA will rely on soil and soil gas investigations conducted at the Facility Area since approximately 2006. These investigations include primarily the Phase A and Phase B Source Area Investigations (Phase A and Phase B investigations) to characterize soil, groundwater, and soil gas across the Site (ENSR 2007 and 2008b; Neptune and Company [Neptune] 2010; and Northgate 2010a,b,c,d). In addition, confirmation samples associated with interim removal actions at the Site have been collected (Northgate 2010d). These soil and soil gas studies are described in Sections 2.2.1 and 2.2.2. Interim soil removal actions (ENVIRON 2012a) completed subsequent to the Phase A and B investigations are described in Section 2.3. It is important to note that areas represented by many of the samples collected during the Phase A and B investigations were excavated during the interim removal actions, and thus analytical results for these samples are no longer representative of current conditions at the Site. As noted in Section 3.1.1, these samples are not included in the BHRA data set.

2.2.1 Soil

The objectives of the Phase A and B investigations were to refine the CSM developed by ENSR in 2005, further characterize site conditions, and provide data for future risk assessments. To identify and characterize the distribution of site-related chemicals (SRCs) in soils, the investigation focused on soil conditions associated with 192 SRCs that had been identified in the 2005 CSM report and their suspected source areas. A total of 127 soil samples were collected from 27 suspected source area locations in November and December of 2007. The sample locations were selected based on results from past site investigations (ENSR 2005), information on chemical use at the Site, and the 70 LOU study areas identified by NDEP in 1994. In addition to the 192 SRCs previously identified, 44 additional parameters were analyzed and reported by the laboratory.

During the Phase A investigation, soil samples were collected at depths of 0.5 to 1 ft, and at 10-ft intervals thereafter, until groundwater was encountered (ENSR 2006). The samples were analyzed for metals; VOCs, including fuel oxygenates; semivolatile organic compounds (SVOCs); polychlorinated biphenyls (PCBs); dioxins and furans; total petroleum hydrocarbons (TPH as gasoline, diesel, and oil range organics [GRO, DRO, and ORO]); organochlorine herbicides (OCHs); organochlorine pesticides (OCPs); and organophosphate pesticides (OPPs). In addition, analyses were conducted for radionuclides, asbestos (surface soil samples only), and wet chemistry constituents. Not all samples were analyzed for all analytes, and at some locations, samples were collected at more frequent depth intervals. Samples were also collected from the manganese ore and tailings stockpile (Figure 2c) for analysis of metals and radionuclides, and two near surface (1.5 to 3 feet [ft] below ground surface [bgs]) soil samples were collected and analyzed for physical and geotechnical parameters. The objective of the Phase B investigation was to further characterize and evaluate the LOUs in the Facility Area and their potential impact on soil conditions across the Facility Area, based on the results of the Phase A investigation. For the Phase B investigation, the Facility Area was subdivided into four areas for investigation activities: Areas I, II, III, and IV. The LOUs within the four investigation areas are identified in Table B.1 (Appendix B) of the RI/FS Work Plan. During the Phase B investigation, samples were collected at initial soil depths of 0.5 and 10 ft bgs, at the capillary fringe, and the midpoint between the capillary fringe and 10 ft bgs, without exceeding 20 ft between each vertical sample (AECOM, Inc. [AECOM] 2008). Judgmental samples were

collected at 0.5 ft and 10 ft bgs in locations where certain surface features were noted, including minor stains or above ground pipelines. Soil samples were analyzed for the following analytical groups and analytes: metals, VOCs, SVOCs, organic acids, PCBs and PCB congeners, dioxin/furans, OCPs, OPPs, TPH, chlorate, perchlorate, cyanide, hexavalent chromium, formaldehyde, and radionuclides. In addition, based on the findings of the Phase A investigation, samples were collected from 0 to 2 inches bgs and analyzed for asbestos fibers, and samples collected from 0 to 0.5 ft bgs were analyzed for dioxin/furans. Samples for wet chemistry and geotechnical parameters were also collected (Northgate 2010a,b,c,e).

Supplemental sampling of shallow soils was conducted in December 2009 in accordance with two Tronox memoranda entitled, *Scope for Additional Sampling of Area I* and *Scope for Additional Sampling of Area II* (approved by NDEP on November 24, 2009 and December 14, 2009, respectively). A total of 129 soil samples were collected at Phase B locations where contaminants exceeded Nevada BCLs to provide information for excavation planning and supplement post-excavation confirmation sampling (Neptune 2010).

The results of the Phase A and B investigations identified a number of constituents within the upper 10 ft of soil with reported concentrations in excess of NDEP worker BCLs or modified risk-based goals (as agreed upon by NDEP), which were collectively referred to as "soil remediation goals" (SRGs). These constituents included metals; SVOCs, including hexachlorobenzene (HCB); PCBs; OCPs; dioxin TEQs; asbestos; and perchlorate.

Interim soil removal actions were conducted in Areas I through IV based on the results of the Phase A and B investigations, as described in Section 2.3.

2.2.2 Soil Gas

The Phase B soil gas investigation involved collection of 75 soil gas samples across the Facility Area in May 2008. Details of the soil gas sampling are provided in the *Phase B Source Area Investigation Soil Gas Survey Work Plan* (Soil Gas Work Plan; ENSR 2008a, approved by NDEP in March 2008) and summarized in the draft 2010 Site-Wide Soil Gas HRA. Soil gas sample locations were based on the following: (1) results of the Phase A investigation (ENSR 2007), which identified the presence of several VOCs in soil and/or groundwater samples collected at the Site; (2) historic soil and groundwater data collected during prior investigations; and (3) an assessment of former chemical usage at the individual LOUs (18 LOUs were identified as potential sources of VOCs or in areas where VOCs had been detected in soil or groundwater).[5]

The objectives of the soil gas survey were to evaluate the nature and extent of VOCs in soil gas in potential VOC source areas and provide data for future risk assessments. From a review of

[5] A plume sourced at a neighboring property and carrying VOCs, non-aqueous phase liquid (NAPL), and other contaminants enters the site along the western boundary. The COPCs in the dissolved phase are present in the shallow water bearing zone (WBZ) and are expected to affect soil gas, while the NAPL is present in the middle water bearing zone and is not expected to affect soil gas. This area was not adequately sampled during the 2008 soil gas investigation. Additional soil gas samples were collected in this area, as described in the 2013 Parcels Soil Gas HRA.

historic information and Phase A investigation results, the following areas were identified in the Soil Gas Work Plan as potential sources of VOCs or areas where VOCs were detected in soil and/or groundwater (ENSR 2008a):

- Former Hardesty Chemical Company site (LOU 4)
- On-site portion of the Beta Ditch, including small diversion ditches (LOU 5)
- Old P-2, Old P-3, and New P-2 Ponds, and Ponds S-1 and P-1 (LOUs 7, 8, 9, 13, and 14)
- Ponds AP-1 through AP-5 (LOUs 16, 17, 18, and 19)
- Former Truck Emptying/Dumping Site (LOU 35)
- Satellite Accumulation Point/ammonium perchlorate (AP) Maintenance Shop (LOU 39)
- Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning (LOU 43)
- Diesel Storage Tank Area (LOU 45)
- AP Plant Area Change House/Laboratory Septic Tank (LOU 54)
- Acid Drain System (LOU 60)
- Former State Industries, including impoundments and catch basin (LOU 62)

Samples were collected at 5 ft bgs, with the exception of 4 samples collected in the vicinity of Unit 3, Unit 5, and Unit 6 at 20 ft bgs (SG-36, SG-37, SG-38, and SG-41) (Northgate and Exponent 2010b). In a July 18, 2007 conference call (NDEP 2007), NDEP and Tronox agreed that deeper soil gas samples would be collected from areas with higher chemical concentrations in groundwater, as well as from less impacted areas. Further, as specified in NDEP's March 26, 2008 approval (NDEP 2008a) of the Soil Gas Work Plan, NDEP stated that samples in the vicinity of Unit 3 should be collected below the depth of the Unit 3 basement, which was occupied with engineering staff (Northgate and Exponent 2010b). Based on these discussions, 20 ft bgs samples were collected as follows: SG-41, near Unit 3; SG-36, near an area of higher chloroform concentrations in groundwater (ENSR 2008a); and SG-37 and SG-38, near areas with relatively lower chloroform concentrations in groundwater (ENSR 2008a).

2.3 Interim Soil Removal Actions

The results of the Phase A and B source investigations identified a number of constituents within the upper 10 ft of soil in excess of SRGs. Based on these findings, a detailed scope of work for a soil removal action was presented in the *Removal Action Work Plan for Phase B Soil Remediation of Remediation Zones RZ-B through RZ-E* (the "RAW") (Northgate 2010i, approved by NDEP on August 20, 2010).

For purposes of soil excavation activities, the main contaminated portions of the Facility Area were divided into five separate RZs roughly based on geographic groupings of elevated detections of contaminants and CSM considerations (Northgate 2010e). The RZs are listed below:

- RZ-A: the area on the southern portion of the Site *(excluded from the soil evaluation; included in the soil gas evaluation);*
- RZ-B: the area around the Units *(included in the soil and soil gas evaluation);*
- RZ-C: the AP production area, Koch Materials area, pond and diesel storage tank area, and manganese tailings area *(included in the soil and soil gas evaluation);*
- RZ-D: the former Trade Effluent ponds and AP pad/drum recycling area (including the former hazardous waste landfill) *(included in the soil and soil gas evaluation);*
- RZ-E: the Beta Ditch *(included in the soil and soil gas evaluation).*

For RZ-A, the results of a soil HRA (Northgate 2010h, approved by NDEP on August 20, 2010) indicated that exposures to residual chemicals in the upper 10 ft of soil were below NDEP's point of departure for noncancer effects (hazard index [HI] of 1) and cancer risks (one-in-a-million [1×10^{-6}]) for indoor commercial workers, outdoor commercial/industrial workers, and construction workers. The upper-bound estimated risks for death from lung cancer or mesothelioma for asbestos exposures to outdoor commercial/industrial workers were less than or equal to 1×10^{-6} for chrysotile and amphibole fibers. The best estimate and upper-bound estimates for asbestos exposures to construction workers were less than or equal to 1×10^{-6} for chrysotile fibers and ranged from zero to 6×10^{-5} for amphibole fibers. Based on the HRA results, RZ-A was not included in the interim soil removal program (Northgate 2010h).

For RZ-B through RZ-E, Voronoi/Thiessen polygons were generated for each RZ to define areas with SRG exceedances (Northgate 2010i). The general remediation strategy consisted of excavation of soils within designated polygons, sampling of discolored soil, removal of discolored soil if above SRGs or otherwise deemed appropriate to remove, and designation of Excavation Control Areas (ECAs) for inaccessible areas, including certain areas with COPCs and/or discolored soil left in place.

To further define the polygons of areas identified for excavation, pre-confirmation sampling was conducted in Spring 2010 in accordance with a pre-confirmation sampling work plan (Northgate 2010e, approved by NDEP on March 30, 2010). Two types of borings were advanced during the pre-confirmation sampling program, including (1) 84 borings at existing locations (adjacent to Phase A and B sampling locations) and (2) 91 borings at new locations. Data from "existing locations" were used to establish polygon depths, while data from "new locations" were used to define the horizontal extent and vertical delineation of excavation of near-surface soils (0 to 10 ft bgs). Results from the Phase A, Phase B, and pre-confirmation sampling events are presented in Appendix A of the Excavation Plans for Phase B Soil Remediation for each RZ (RZ-B, Northgate 2010j; RZ-C, Northgate 2010k; RZ-D, Northgate 2010l; and RZ-E, Northgate 2010m).

Discolored soil was encountered in various locations during removal activities. Based on the location of the discolored soil, available analytical results from adjacent or nearby areas, the anticipated extent of discolored soil, and the excavation activities currently in progress, some areas of discolored soil were removed. Other areas of discolored soil were sampled and evaluated to determine if the soil should be removed or left in place in accordance with the *Work Plan for Evaluation of Discolored Soil and Confirmation Soil Sampling in Visually-Impacted*

Areas (ENVIRON 2011, approved by NDEP on May 12, 2011). Following the removal of discolored soil, confirmation soil samples were collected to verify that remaining COPC soil concentrations were below SRGs. If the analytical results indicated that concentrations were above SRGs, additional soil was typically removed and additional confirmation soil sampling performed.

An interim removal action was also conducted at the manganese tailings pile area, as presented in *Manganese Tailings Removal Technical Memorandum* (Northgate 2012) approved by NDEP February 21, 2013. The manganese tailings pile area, is located within the Facility Area, north of the Manganese Leach Plant and south of the former Mn-1 Pond (Figure 2c). The area is approximately 8.6 acres in size and was used from 1975 through 2004 for the disposal of manganese tailings from the leach plant process. Manganese tailings material from all locations at the Site were consolidated to this location and covered with soil sometime prior to 1985. Since 2004, manganese tailings from the Tronox operations (current tailings production) have been shipped to an off-site landfill.

A total of 284,232 tons of tailings and minor debris were removed from the manganese tailings pile. In accordance with a request by the NDEP, a confirmation sampling program was implemented subsequent to tailings removal. Based on the results of the confirmation sampling program, additional shallow soil excavation was conducted concurrent with Phase B soil remediation in accordance with the RAW, and the *Revised Excavation Plan for Phase B Soil Remediation of RZ-C Addendum to the Remedial Action Work Plan* (Northgate 2010k). The post-confirmation sampling excavation was conducted to address soil that contained concentrations of manganese, arsenic, cobalt, and/or asbestos that exceeded screening criteria.

The removal activities and post-removal conditions at the Site are described in detail in the *Revised Interim Soil Removal Action Completion Report* (ENVIRON 2012a), submitted to NDEP on September 28, 2012 and approved by NDEP on December 17, 2012 (NDEP 2012c).

As discussed in Sections 2.5.1 and 3.1.1, analytical results for soil samples in areas not removed during the interim soil removal actions and that remain representative of current conditions within the Category 1, 2A, 3, and 4 soil areas are being reviewed for usability in the BHRA. Specifically, these samples would include any “remaining samples” from the current 0-10 ft depth interval collected as part of the Phase A and B investigations and the associated confirmation sampling, and confirmation samples from the interim soil removal action and the manganese tailings removal program.

2.4 Soil and Soil Gas Data Gaps

A data gap evaluation was completed as part of the RI/FS Work Plan, with documentation presented in the *Field Sampling Plan, Revision 0* (FSP) (ENVIRON 2014b). For risk assessment purposes, the data gaps evaluation considered spatial coverage for a preliminary list of soil COPCs based on a review of results from the remaining soil samples discussed in Sections 2.3 and 3.1.1. As described in the RI/FS Work Plan and FSP, eight investigation areas were identified as soil data gaps for risk assessment and/or other RI purposes: Pond AP-5, the debris pile, soil in the area between the debris pile and Pond AP-5, the area west of Pond Mn-1, two Category 3 soils areas, and two areas identified for additional soil characterization to

evaluate potential source(s) of chloroform detected in soil gas in these areas. Additionally, Category 1 soils with limited soil characterization near the Unit Buildings were identified for further investigation.

Additional characterization of soil gas has also been identified as a possible data gap. Because groundwater is considered to be the primary source of VOCs in soil gas, review and identification of data gaps in the existing soil gas data set will be completed following further investigation of trespassing VOCs in groundwater from neighboring properties and further investigation of VOCs in shallow on-site groundwater. An addendum to the FSP will be submitted to address data gaps in soil gas results if identified based on the additional groundwater investigations proposed in the RI/FS Work Plan and FSP.

2.5 Conceptual Site Model for the Facility Area and Downgradient Locations

The RI/FS Work Plan identified sources, release mechanisms, exposure media, exposure routes, and receptors based on current understanding of on-site and off-site environmental conditions and considering the Site history. Development of the CSM is an iterative process; CSMs are revised, as appropriate, over the course of an RI based on additional information and understanding gained following review of existing and newly collected data. A preliminary CSM diagram for the Site and downgradient areas was presented as Figure 5-1 of the RI/FS Work Plan. This figure, updated to reflect the revised soil categories described in Section 2.5.1 of this Work Plan is included as Figure 3.

As described in the RI/FS Work Plan, the preliminary identification of sources, release mechanisms, exposure media, exposure routes, and receptors is based on a current understanding of on-site and off-site environmental conditions. As part of the CSM, potential contaminant sources and release mechanisms were identified and reviewed. In 1994 NDEP identified 69 source areas (or areas for further investigation) that included areas that are currently used for chemical production, areas that are no longer active, and/or areas where near surface soil contamination has previously been addressed.[6] These current or former source areas include, but are not limited to:

- Unit buildings 1 through 6;
- Surface water impoundments (over 15 former and current surface water impoundments were identified as LOUs);
- Former and current surface and subsurface water conveyances (e.g., the Beta Ditch, Beta Ditch Extension, Northwest Ditch, drainage systems, sewers, piping);
- Leach Plant area;
- Acid drain system;
- Agricultural division plant;
- AP plant and associated buildings;

[6] NDEP identified 69 areas in 1994; an additional area, the US Vanadium site was identified later and is referred to as #70.

- Materials and product handling and storage areas;
- Waste handling and storage areas;
- Manganese tailings area;
- Stock pile areas; and
- Former hazardous waste landfill (LOU 10) and other hazardous waste storage areas.

Historical releases from potential source areas have been documented or inferred from field investigations that have identified chemically impacted soils, soil gas, and groundwater.

Soil contamination in many of these areas was addressed in the interim soil removal actions, as described in Section 2.3. However, in some areas, access or other constraints precluded soil excavation (e.g., below buildings or surface impoundments), such that impacted soils (with COPC concentrations greater than SRGs) and incompletely characterized soils (due to access issues) were left in place. These areas were assigned to one of 38 ECAs[7] established following the interim removal action program (7 in RZ-B, 18 in RZ-C, 10 in RZ-D, and 3 in RZ-E) (ENVIRON 2013c). Surface and near surface soils (0-10 ft below the "new" ground surface[8]) were placed into one of four categories to help inform the CSM, as well as identify data gaps and exposure pathways for evaluation in the RI and BHRA. The four categories are discussed in the following section.

2.5.1 Soil Categories

This section describes the different category soils, as revised from the definitions previously presented in the RI/FS Work Plan.[9]

Category 1 (Soils in ECAs): Includes all soils in ECAs. Due to access or other constraints that precluded soil excavation, soils in ECAs with COPC concentrations exceeding SRGs were left in place. ECAs also include 0 to 10 ft bgs soils that have not been fully characterized due to access or other restrictions. ECAs comprise approximately 85 acres (32% of the Facility Area).

[7] ECAs were established at the Site for following reasons: (1) contaminated and/or discolored soil areas are located beneath existing operational structures, and it was technically infeasible or cost prohibitive at the time of soil removal to access these areas for excavation; (2) contaminated and/or discolored soil areas are located in close proximity to utilities or other Site features (e.g., the active pond berms), and excavating soil in these areas poses a potential safety hazard and/or could result in damage to the utilities/features; and (3) soil with unknown conditions and/or limited analytical test results is located beneath existing operational structures or facilities, and it is technically infeasible or cost prohibitive to access these areas for investigation and/or excavation. In addition, the excavation program did not address vadose zone soils at depths greater than 10 ft bgs. Therefore, vadose zone soils across the Site at depths greater than 10 ft below original grade are identified as an ECA (ENVIRON 2012a, 2013c).

[8] The "new" ground surface refers to the soil surface following excavation, backfilling, and grading associated with the 2011 interim soil removal action (ENVIRON 2012a). In Sections 5 and 6, the 0 to 10 ft depth interval refers to the post-excavation soil horizon unless otherwise stated.

[9] In the RI/FS Work Plan, 4 soil categories were identified. In this BHRA Work Plan (and future documents), Category 2 soils have been divided into Category 2A and 2B soils.

Category 2 (SRGs Not Exceeded, Not in ECA): Includes soils with COPC concentrations less than SRGs within the 0-10 ft post-excavation depth interval. These soils are in areas that (1) were not identified for remediation because COPC concentrations were less than SRGs based on results of the Phase A and Phase B source investigations (or other investigations completed since 2006) or (2) where soils exceeding SRGs in the 0-10 ft depth interval have been removed, either in 2011 during the interim soil removal action or during other actions (e.g., closure of surface water impoundments).

2A: Category 2A soils include soils for which analytical data representative of the 0 to 10 ft depth interval remaining post-excavation are available (excluding RZ-A). Category 2A soils comprise approximately 29 acres (11% of the Facility Area).

2B: Category 2B soils correspond to RZ-A. As previously noted, an HRA was completed and approved by NDEP for RZ-A. Category 2B soils comprise approximately 134 acres (51% of the Facility Area).

Category 3 (SRGs Exceeded, Not in ECA): Includes soils with COPC concentrations greater than SRGs within the 0-10 ft post-excavation depth interval that are not in ECAs. Category 3 soils comprise approximately 8 acres (3% of the Facility Area).

Category 3 soils were identified during a comprehensive review of residual soil concentrations following completion of the 2011 interim soil removal action and 2012 manganese tailings removal program. The 12 areas identified as Category 3 soils are shown on Figure 4 (numbers 1-12) and information about each area is provided in Table 1, including sample location, sample depth interval, COPCs exceeding their respective SRG, detected concentrations, and SRGs. The COPCs detected in one or more of these areas at concentrations above their respective SRG include arsenic, perchlorate, dioxin TEQs, benzo(a)pyrene TEQs, and HCB.

Category 4 (Characterization not Complete, Not in ECA): Includes soils where characterization has not been completed (for the purposes of risk assessment) and that are not in ECAs. Category 4 soils comprise approximately 10 acres[10] (4% of the Facility Area).

One of the Category 4 areas — the debris pile — has been identified for further evaluation (shown on Figure 2c). Materials in the debris pile (e.g., concrete) have not been characterized and soils have not been sampled; sampling in this area is identified as a data gap in the FSP.

Parcel E has also been identified as a Category 4 area (shown on Figures 2a and 4). Soil samples have not been collected in Parcel E to date due to the continued operation of OSSM groundwater treatment system mentioned in Section 1.2.1. Considering the historical use of Parcel E, soil data from adjacent Parcels C and D will be used a surrogate data for evaluating risks.[11]

[10] The acreages of the Category 1, 2A, 2B, 3, and 4 soils do not sum to the total Facility Area acreage of 265 acres because of rounding.

[11] If Parcel E is sold prior to conducting the BHRA, Parcel E will be excluded from the Facility Area and risks will not be evaluated.

2.5.2 Exposure Pathways

The potentially contaminated exposure media at the Facility Area and nearby vicinity include ambient and indoor air, soil, surface water, and groundwater. The potentially exposed populations (receptors) identified in the 2010 HRA Work Plan will be evaluated in the BHRA including: long-term indoor commercial or industrial workers, long-term outdoor commercial or industrial workers, and short-term construction workers. These receptors and exposure pathways are consistent with future land use as an operating industrial facility.

Additionally, potential off-site receptors will be evaluated qualitatively (or quantitatively) in the BHRA including: long-term indoor commercial or industrial workers, long-term outdoor commercial or industrial workers, residents, and recreational users. Potentially complete exposure pathways for each on-site and off-site receptor and exposure medium are identified on the CSM diagram (Figure 3) and in Tables 2 and 3. The receptors and complete exposure pathways are shown on Tables 2 and 3 and Figure 3.

3.0 Risk Assessment Data Set and Data Evaluation

This section describes the sources and types of data that will be considered in the BHRA as well as the data evaluation process. Only data of appropriate quality to meet the specific objectives of the evaluations will be used. The specific data sources are described in Section 3.1, data usability for risk assessment purposes is discussed in Section 3.2, and data analysis is discussed in Section 3.3.

3.1 Data Sources

Soil, soil gas, and groundwater data will be evaluated for use in the BHRA. In the absence of air monitoring data for particulates and VOCs that are representative of current operations and conditions at the Facility Area, air concentrations will be evaluated using standard air dispersion modeling as described in Section 4.2.1.

3.1.1 Soil

The data set for soil will comprise analytical results that are representative of current conditions at the Facility Area. Specifically, the data set will include "remaining" Phase A and B soil samples collected from the current 0 to 10 ft depth interval. In addition, remaining confirmation samples collected to inform the interim removal actions and soil samples collected during the RI to address data gaps will be reviewed for inclusion in the BHRA soil data set.

The analytical results from historical investigations are reported in the following:

- Phase A Source Area Investigation Results Report (ENSR 2007);
- Revised DVSR for Shallow Supplemental Soil Sampling in Areas I and II (Neptune 2010);
- Revised DVSR, Phase B Investigation Area I Soil (Northgate 2010a);
- DVSR, Phase B Investigation Area II Soil (Northgate 2010b);
- DVSR, Phase B Investigation Area III Soil (Northgate 2010c);
- Revised DVSR, Phase B Investigation Area IV Soil (Northgate 2010d);
- DVSR, Additional Pre-Confirmation Sampling (Northgate 2011);
- DVSR, Revision 4, February to August 2011 Soil Remediation Completion Sampling (ENVIRON 2013d); and
- DVSR for Asbestos Data Associated with the DVSR, February to August 2011, Soil Remediation Completion Sampling (ENVIRON 2013d).

3.1.2 Soil Gas

Soil gas data at the Facility Area are available from the following sources:

- Historical samples: These analytical data comprise results from historical soil gas samples collected in or near the Facility Area as part of the Phase B Site-Wide Soil Gas Survey for VOCs (described in Section 2.2.2) and reported in the *Revised DVSR Phase*

B Source Area Investigation Soil Gas Survey (ENSR 2008b, approved by NDEP on October 20, 2008);

- RI samples: Analytical results for soil gas samples proposed for collection as part of the data gap investigation (ENVIRON 2014b).

3.1.3 Groundwater

Groundwater samples collected in or near the Facility Area from shallow groundwater wells and analyzed for VOCs will be used to inform the BHRA. Specifically, the groundwater VOC data will be used to: (1) identify possible additional locations for soil gas sampling, (2) inform the CSM, and (3) evaluate potential exposures, as part of the uncertainties analysis. Groundwater data will be obtained from NDEP's regional database.[12]

3.2 Data Usability

The primary objective of the data usability evaluation is to identify appropriate data for use in the BHRA. All relevant site characterization data will be evaluated in accordance with the NDEP *Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Facility in Henderson, NV* (NDEP 2010f), which is based on USEPA's *Guidance for Data Usability in Risk Assessment* (Parts A and B) (USEPA 1992a,b). The six data quality criteria listed in Section 3.1.2 of the 2010 HRA Work Plan will be used to evaluate the usability of site characterization data in the BHRA.

As described in Section 4.0, following additional statistical review and spatial analysis of the data, the Facility Area may be divided into subareas or exposure units. The data usability evaluation will be conducted separately for each subarea/exposure unit identified.

3.3 Data Analysis

As described by NDEP (2010f), the purpose of the data analysis step is to "use simple exploratory data analysis to compare data to the expectations of the CSM, to determine if the data adequately represent the source terms and exposure areas or evaluation areas."

A preliminary risk assessment data set for the Facility Area has been identified from a database containing results of post-excavation samples remaining in the current 0 to 10 ft depth interval. Statistical summaries of the data have been prepared and are presented in Tables 4 through 7. A description of the information provided in each table is provided below:

- Table 4 – presents summary statistics for the current 0 to 10 ft depth interval for perchlorate, metals, radionuclides, general chemistry, and inorganic anions across the Facility Area, except for soils in ECAs (Category 1) and soils in RZ-A (Category 2B). Summary statistics are presented separately for the 0 to 2 ft depth interval for ECAs (for evaluating inhalation of airborne soil particulates from surface soils).
- Table 5 – presents summary statistics for Facility Area soils (excluding ECAs and RZ-A) for the current 0 to 10 ft depth interval for all detected organic compounds. Because

[12] The NDEP regional database is available at: http://ndep.neptuneinc.org/ndep_gisdt/home/index.xml.

there were a large number of analytes reported as below detection limits in all samples, Table 5 includes only those analytes detected in at least one sample. Appendix D, Table D-1, presents the same information for all analytes (i.e., including analytes not detected in any sample).

- Table 6 – presents summary statistics for ECA soils for the current 0 to 2 ft depth interval for perchlorate, metals, radionuclides, general chemistry, and inorganic anions.
- Table 7 – presents summary statistics for ECA soils for the current 0 to 2 ft depth interval for all detected organic compounds. (Appendix D, Table D-2 presents the same information for all analytes.)

For some analytes, the post-remediation data set for the 0-10 ft depth interval includes results at over 500 sampling locations, although for other analytes (particularly those not expected to be Site-related) the analytical data set is much more limited. Sample locations are shown on Figures 5a for remaining samples in RZ-B, Figure 5b for remaining samples in RZ-C, and Figure 5c for remaining samples in RZ-D and RZ-E. Asbestos results are not presented in the summary statistic tables. Based on the asbestos sample dates, i.e., 2006 through 2010, data validation was likely not conducted in accordance with the most current asbestos validation guidance (NDEP 2012b). The need to revalidate the asbestos data will be discussed with NDEP. Therefore, the asbestos data may need to be revalidated. The final risk assessment data set for soils (including asbestos) will be identified in the BHRA, following completion of the data evaluation steps identified in Section 3.2.

A statistical summary of the preliminary soil gas data set is presented in Table 8 and existing soil gas sample locations are shown on Figure 6. Also shown on Figure 6 is an isoconcentration contour map for chloroform in shallow groundwater and cancer risk estimates from the draft 2010 Site-Wide Soil Gas HRA. The chloroform isoconcentration contour map will be updated as additional analytical results from the groundwater monitoring program become available. This additional information will be used to identify data gaps, if any, in the Facility Area soil gas data. Further, the preliminary cancer risk estimates presented on Figure 6 will be updated in the BHRA.

For soil and soil gas samples with primary and field duplicate results, primary and duplicate samples will be treated as independent samples and both will be included in all subsequent data analyses, regardless of whether one or both are nondetect. This is consistent with Option 2 in NDEP's guidance for field duplicates and field splits (NDEP 2008b). This is considered appropriate because field duplicate samples represent a discrete and unique measurement of soil and soil gas chemical conditions proximal to the primary sample (unlike split samples). The field duplicates will be compared to the primary sample during the course of data validation.

Additionally, as requested by NDEP for the *Soil Gas Investigation and Human Health Risk Assessment Work Plan for Parcels C, D, F, G, and H* (2013 Parcels Soil Gas HRA Work Plan) (ENVIRON 2013a), the following types of analyses be included in the BHRA:

- Spatial intensity plots of COPCs and other analytes in soils and soil gas;

- Cross plots for collocated soil gas and groundwater samples collected in or near the Facility Area;
- VOC concentrations presented in the 2010 Site-Wide Soil Gas HRA will be compared with the most recent groundwater sample results from the same monitoring wells to evaluate any temporal changes to VOC concentrations in groundwater;
- Risk calculations for any newly collected soil gas samples (if sampling is warranted as in accordance with the procedure described in Section 3.1.2) will be compared to the risk results presented in the 2010 Site-Wide Soil Gas HRA; and
- Risks estimated using VOC concentrations for groundwater and the associated soil gas samples will be compared to evaluate correlation.

4.0 Baseline Health Risk Assessment Work Plan

The following sections describe the methodology for evaluating health risks for soils and soil gas. The methodology for soil will generally follow the approach outlined in the NDEP-approved 2010 HRA Work Plan, with specific revisions and updates noted in the following sections. The methodology for soil gas will follow the approach used in the NDEP-approved 2013 Parcels Soil Gas HRA Work Plan, which is generally consistent with the approach described in the 2010 HRA Work Plan.

It is anticipated that the Facility Area will be divided into two or more subareas (or exposure units) for evaluation in the BHRA. The following approach will be used to identify these areas:

1. A list of "site-wide" COPCs will be developed following the selection process identified in Section 4.1.
2. Statistical and spatial analyses of the site-wide COPC data set will be conducted.
3. Subareas and/or exposure units[13] will be identified based on consideration of the analyses as well as current and projected work areas, site cover (e.g., building footprints and pavement), and soil category (i.e., Category 1, 2A, 2B, 3, or 4 soils)

The risk assessment process (COPC selection, exposure assessment, and risk characterization) will be conducted and presented separately for each individual subarea. (The values selected in the toxicity assessment will apply to all subareas/exposure units.)

4.1 Selection of Chemicals of Potential Concern

Sections 4.1.1 and 4.1.2 present the COPC selection process for soil and soil gas.

4.1.1 Soil

Chemicals of potential concern will be selected following the steps described in Section 3.2 of the 2010 HRA Work Plan, except as noted below.

- **Background data sets.** The background data set identified for evaluation of metals in the 2010 HRA Work Plan comprised the McCullough Range data set. However, subsequent to NDEP's approval of the 2010 HRA Work Plan, NDEP investigated the differences between the analytical results for metals from RZ-A and from background samples collected in 2005 by Basic Remediation Company and Titanium Metals Corporation (BRC/TIMET) in the McCullough Range, and determined that the RZ-A data set was appropriate for statistical background analysis of metals (NDEP 2010e). Consistent with the 2010 HRA Work Plan, the McCullough Range data set represents a background data set for radionuclides in the 0-10 ft depth interval. The background data sets for soil identified in Appendix D of the RI/FS Work Plan (reproduced in Appendix C

[13] An exposure unit is defined as an area over which receptors are expected to integrate exposure when routinely present at a site. A subarea (in contrast to an exposure area) represents spatially contiguous areas or areas where statistical analysis of the data set identifies a hot spot or identifies an area in which statistical analysis of the data indicate the data are from of a single population.

of this Work Plan) will be used for background comparisons instead of the background data set identified in the 2010 HRA Work Plan. The background data sets include the following:

(1) Metals: Analytical results for soil samples collected in RZ-A represent a background data set for metals in the 0-10 ft depth interval. This data set was first identified in *Technical Memorandum: Background Comparison for Metals in Remediation Zones B through E, Compared to Remediation Zone A* (Northgate 2010g). NDEP determined that the RZ-A data set is appropriate for background comparisons in their letter to Tronox dated August 17, 2010.

(2) Radionuclides: Analytical results for soil samples collected in the McCullough Range represent a background data set for radionuclides in the 0-10 ft depth interval. This data set was first identified in *Background Shallow Soil Summary Report, BMI Complex and Common Area Vicinity* (BRC/TIMET 2007). It is noted that the RZ-A data set (Northgate 2010g) used for metals also included results for radionuclides that may be appropriate for conducting background evaluations.

- **Identification of Dioxin TEQs as a COPC**. A value of 2,700 ppt for dioxin TEQs was derived based on Northgate's *Results of Bioaccessibility Study for Dioxins/Furans in Soil* (Northgate 2010f). This value was approved by NDEP as a site-specific, risk-based concentration for dioxin TEQs (NDEP 2010d) and replaces the target goal of 1 ppb identified in the 2010 HRA Work Plan.

  As outlined in the 2010 HRA Work Plan, risks associated with exposures to dioxin TEQs will be quantified only if residual TEQ concentrations exceed the target goal (i.e., 2,700 ppt).

4.1.2 Soil Gas

All chemicals detected in one or more validated soil gas samples will be selected as COPCs. This approach is consistent with the approach used in the 2013 Parcels Soil Gas HRA, as recommended by NDEP in their April 9, 2013 comment letter on the 2013 Parcels Soil Gas HRA Work Plan (NDEP 2013a).

4.2 Exposure Assessment

The exposure assessment includes the CSM (described in Section 2.5), fate and transport modeling, derivation of exposure point concentrations (EPCs) for soils and exposure concentrations (ECs) for air, and estimates of average daily doses (ADDs). The following elements from the 2010 HRA Work Plan will be used in the BHRA exposure assessment: (1) the exposure parameter values identified in Tables 2 and 3 (these values are reproduced in Table 9 of this Work Plan), and (2) the equations presented in Section 4.2.1. Revisions to other elements of the exposure assessment are noted in Sections 4.2.1 and 4.2.2.

4.2.1 Fate and Transport Modeling

In the absence of air monitoring data for particulates and VOCs that are representative of current operations and conditions at the Facility Area, concentrations will be evaluated using

standard air dispersion modeling. Similar to the approach described in the 2010 HRA Work Plan, intermedia transfer factors will be used to estimate COPC concentrations in air based on chemical concentrations in soil or soil gas.

- **Transfer Factors for Airborne Dusts.** Consistent with the 2010 HRA Work Plan, particulate emission factors (PEFs) will be derived, as described in *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA 2002b). The PEFs will be used to estimate the concentrations of airborne particulates and VOCs in ambient and indoor air[14].
- **Transfer Factors for Soil Gas.** The fate and transport modeling factors presented in Table 1 of the 2010 HRA Work Plan will be adopted in the BHRA except those for the vapor intrusion pathway. Based on a review of Facility Area boring logs, the fate and transport modeling factors and site-specific soil properties presented in Tables 5 and 7 of the NDEP-approved 2013 soil gas investigation work plan for the Parcels C, D, F, G, and H (ENVIRON 2013a) were determined to be appropriate for the Facility Area. These fate and transport modeling factors are presented in Table 10 and the site-specific soil properties are presented in Table 11 of this Work Plan. As shown in Table 10, the shallowest depth to groundwater across the Facility Area (30 ft)[15] will be used, although depth to groundwater may be refined for individual exposure units. Additionally, a Facility-Area specific dispersion factor for VOCs emitted from soil (Q/C_{vol}) will be used, assuming the 265 acres of the Facility Area. Alternatively, Q/C_{vol} values may be determined based on the areas of the individual exposure units.

4.2.2 Exposure Point Concentrations and Intake Estimates

The equations and methodology described in the 2010 HRA Work Plan for estimating EPCs and ADDs for chemicals, radionuclides, and asbestos in soils and VOCs in soil gas will be followed, as presented in Section 4.2.1 of the 2010 HRA Work Plan, except as noted below.

Depending on sample size and number of detected concentrations, the EPCs will be represented by maximum detected concentrations or by the 95% upper confidence limit (95% UCL) on the arithmetic mean. The EPCs will be calculated using the ProUCL software (Version 5.0.00) (USEPA 2013a) recommended by USEPA (2013b) or using equivalent methods programmed in R, a language for statistical computing (R Core Team 2012). As described in Appendix E, the bias-corrected accelerated (BCA) bootstrap method will be used for data sets with only detected results and the Kaplan-Meier (KM) estimator BCA method will be used for data sets with both detects and nondetects.

4.3 Toxicity Assessment

Consistent with the NDEP hierarchy for selecting toxicity values to derive BCLs (NDEP 2013d), cancer and noncancer toxicity values will be identified based on the following sources, listed in general order of preference:

[14] As noted in response-to-comment #41a on the 2012 RI/FS Work Plan, ENVIRON's review of an ambient air data set collected by BMI and provided to ENVIRON by NDEP indicates that the data are not representative of current conditions at the Site.
[15] Excludes the area near the interceptor well field [IWF].

- USEPA's Integrated Risk Information System (IRIS). IRIS is an on-line database of USEPA-approved oral and inhalation toxicity values (USEPA 2014);
- USEPA's Provisional Peer Reviewed Toxicity Values (PPRTVs). PPRTVs are interim toxicity values developed by the Office of Research and Development/National Center for Environmental Assessment/Superfund Health Risk Technical Support Center. PPRTV values are listed in NDEP's table of BCLs (NDEP 2013d);
- National Center for Environmental Assessment (NCEA), or other current USEPA sources;
- USEPA's Health Effects Assessment Summary Tables (HEAST) (USEPA 1997). HEAST provides an older listing of provisional toxicity values;
- California Environmental Protection Agency (Cal/EPA) toxicity criteria;
- USEPA Criteria Documents (e.g., drinking water criteria documents, drinking water Health Advisory summaries, ambient water quality criteria documents, and air quality criteria documents);
- Agency for Toxic Substances and Disease Registry (ATSDR) toxicological profiles, which list minimum risk levels for evaluating noncarcinogens (ATSDR 2013);
- USEPA's Environmental Criteria and Assessment Office (ECAO);
- NDEP-identified toxicological surrogates; and
- Peer-reviewed scientific literature.

Route-to-route extrapolation (specified in the 2010 HRA Work Plan) will not be applied. This revised approach is consistent with updated BCL Guidance (NDEP 2013d) and *Risk Assessment Guidance for Superfund, Part F, Supplemental Guidance for Inhalation Risk Assessment* (USEPA 2009).

4.4 Risk Characterization

The final step of the BHRA is risk characterization and the evaluation of uncertainties. The approach and equations for assessing cancer risks and noncancer health effects will follow the methodology from the 2010 HRA Work Plan. Carcinogenic risk and hazard quotients will be evaluated using equations in Sections 6.1 and 6.2, respectively of the 2010 HRA Work Plan. If statistical analyses indicate that chemicals are elevated above background soil levels, the risks associated with background soil levels will be quantitated in accordance with Section 6.3 of the 2010 HRA Work Plan. An uncertainty analysis will be prepared consistent with Section 6.4 of the 2010 HRA Work Plan.

As described in NDEP BCL Guidance (NDEP 2013d), the NDEP point of departure for most chemicals is a cumulative incremental cancer risk of 1×10^{-6} and a hazard quotient of one (1) for the noncancer endpoint. USEPA considers 1×10^{-6} to 1×10^{-4} to be the target range for acceptable risks at sites where remediation is considered (USEPA 1990). Estimates of lifetime excess cancer risk associated with exposure to chemicals of less than 1×10^{-6} are considered to be so low as to warrant no further investigation or analysis (USEPA 1990).

4.5 Data Quality Assessment

DQA is an analysis that is performed after the risk assessment is completed to determine whether sufficient samples have been collected to support the conclusions of the risk assessment. Sample size calculations will be conducted for the primary chemicals of interest (i.e., those that are the major contributors to the risk estimates). The specific formula(s) that will be used to evaluate data adequacy will be based on the methodology used for calculation of EPCs, i.e., maximum detected concentrations or the 95% UCL on the arithmetic mean.

5.0 Schedule

The BHRA will be prepared in parallel with the RI beginning in June 2014, pending NDEP approval of the RI/FS Work Plan, this BHRA Work Plan, and other related deliverables. The data-gap field investigation will occur over a period of six months from the beginning of June through the end of November 2014. The data collected will be evaluated over the next four months, ending in March 2015. As the data is being evaluated, the BHRA will be performed beginning in January 2015; the BHRA report will be prepared and submitted for NDEP reviewed at the end of July 2015. NDEP review is expected to be completed by the end of October 2015, after which time NDEP comments will be addressed and the BHRA report will be finalized for resubmittal to NDEP at the end of 2015. NDEP approval of the BHRA is anticipated at the end of January 2016. If budget approval for implementation of the RI/FS Work Plan, the BHRA Work Plan, and related deliverables is not received from NDEP by April 15, 2014, the schedule, as presented herein, may require modification.

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Tables

TABLE 1. Category 3 Area Information
Nevada Environmental Response Trust Site; Henderson, Nevada

Area #	Description	Sample Information					
		Sample Location	Depth Interval (feet bgs)	Chemical	Result	BCL or SRG[a,b]	Unit
1	Dioxin TEQ > BCL at two locations at ground surface (0-1.5 ft). Northgate did not define a soil removal polygon for this area and soil was not removed. RSAI7 is slightly north of an existing ECA and along fenceline where removal of the BMI Haul Road is anticipated. TSB-CJ-09 is just north of this area.	RSAI7	0 - 0.5	Dioxin TEQ	31,000	2,700	pg/g
		TSB-CJ-09	0 - 1.5	Dioxin TEQ	3,900	2,700	pg/g
2	Dioxin TEQ and HCB > BCL originally at ground surface and is now buried by approximately 2 ft of soil. Northgate did not define a soil removal polygon for this area and soil was not removed.	SSAK3-05	2.5 - 3	Hexachlorobenzene	4.7	1.2	mg/kg
			2.5 - 3	Dioxin TEQ	11,000	2,700	pg/g
3	Hexachlorobenzene > BCL at 1.5-2 ft deep. Northgate did not define a soil removal polygon for this area and soil was not removed.	RSAK4	1.5 - 2	Hexachlorobenzene	2.1	1.2	mg/kg
4	Arsenic slightly > background at 2-5 ft deep. These samples were originally collected at 10-13 ft deep. Polygon excavation was planned to 4 ft, but actual soil excavation was to ~8 ft (due to discolored soil or grading).	BDT-2-S-5	2 - 3	Arsenic	10	7.2	mg/kg
			4 - 5	Arsenic	7.7	7.2	mg/kg
			4 - 5	Arsenic	9.0	7.2	mg/kg
5	Perchlorate > BCL at various locations at and near ground surface (within retention basin). These samples were originally collected at 10-12 ft deep. Polygon excavation was performed to 10 ft. In consultation with NDEP, grading was performed to construct retention basin in this area. Also, perchlorate is present at >9 ft below "new" ground surface in this area.	RSAM5	1 - 2.5	Perchlorate	2,620	795	mg/kg
		SA15	0 - 0.5	Perchlorate	1,160	795	mg/kg
			0 - 0.5	Perchlorate	1,210	795	mg/kg
			9 - 10.5	Perchlorate	943	795	mg/kg
		SA65	surface	Perchlorate	1,690	795	mg/kg
			8.5 - 10	Perchlorate	984	795	mg/kg
6	Arsenic slightly > background at 6-7 ft deep. These samples were originally collected at 5-6 ft deep. Polygon excavation was planned and performed to 1 ft, with approximately 1 ft of backfill in this area. Soil removal polygons were not originally designed to excavate this deep, presumably since the concentration of arsenic was only slightly above the arsenic background concentration.	SA63	6 - 7	Arsenic	7.5	7.2	mg/kg
7	Arsenic slightly > background at ~4 ft deep. After polygon excavation to 1 ft and additional discolored soil excavation, a confirmation sample was collected which indicated that arsenic was slightly above background. In consultation with NDEP and because arsenic concentrations were only slightly above background, no further excavation was performed in this area and the area was backfilled with approximately 4 ft of soil.	CS-D31A-1	4	Arsenic	8.1	7.2	mg/kg
8	Perchlorate > BCL at ~8.5-18 ft deep. These samples were originally collected at 12-21.5 ft deep. Polygon excavation was performed to 10 ft, then area partially backfilled.	SA106	8.5 - 10	Perchlorate	1,050	795	mg/kg
9	Arsenic > background at surface. After soil removal and cleanup following stockpile staging area use in this area, a confirmation sample (DS-C45-2) was collected which indicated arsenic was slightly above background. In consultation with NDEP and because arsenic concentrations were only slightly above background, no further excavation was performed in this area.	DS-C45-2	surface	Arsenic	10	7.2	mg/kg
			surface	Arsenic	12	7.2	mg/kg

TABLE 1. Category 3 Area Information
Nevada Environmental Response Trust Site; Henderson, Nevada

Area #	Description	Sample Information					
		Sample Location	Depth Interval (feet bgs)	Chemical	Result	BCL or SRG[a,b]	Unit
10	Arsenic > background at ~8 ft deep. After polygon excavation and additional discolored soil removal to ~8 ft, a confirmation sample was collected which indicated arsenic was slightly above background. In consultation with NDEP and because the arsenic concentration was only slightly above background, no further excavation was performed in this area and the area was backfilled with approximately 8 ft of soil.	CS-C27-1	8	Arsenic	11	7.2	mg/kg
11 [c]	Arsenic > background at 2-3.5 ft. After soil removal and cleanup following stockpile staging area use in this area, a confirmation sample (DS-C45-2) was collected which indicated arsenic was slightly above background. In consultation with NDEP and because arsenic concentrations were only slightly above background, no further excavation was performed in this area.	SA149	2 - 3.5	Arsenic	25	7.2	mg/kg
			2 - 3.5	Arsenic	21	7.2	mg/kg
12	Arsenic slightly > background in upper 3.5 ft. This sample appears to have been collected on the neighboring property (Lhoist), so soil removal was not planned in this area.	RSAQ5	1 - 2.5	Arsenic	7.4	7.2	mg/kg
			1.5 - 2.5	Arsenic	8.7	7.2	mg/kg
			2.5 - 3.5	Arsenic	7.7	7.2	mg/kg

Notes:
Samples and analytical results listed on this table are from samples presently within 10 ft of the "new" ground surface. Analytical results for deeper samples are not provided on this table.

bgs = below ground surface
ft = foot or feet
mg/kg = milligrams per kilogram
pg/g = picograms per gram
BCL = Basic Comparison Level
BMI = Black Mountain Industrial
ECA = Excavation Control Area
NDEP = Nevada Division of Environmental Protection
SRG = Soil Remediation Goal
TEQ = toxicity equivalents

[a] An NDEP approved site-specific BCL is used as the SRG for dioxins/furans, i.e., dioxin TEQ of 2,700 mg/kg (NDEP 2010d). For arsenic, "contaminated" soil is defined as concentrations greater than 7.2 mg/kg.

[b] The BCL for white phosphorus was not compared to the analytical results for phosphorus because the site history does not suggest that white phosphorus is present on-site.

[c] This sample was previously listed in category area #9.

Reference:
NDEP, 2010d. NDEP Response to: *Results of Bioaccessibility Study for Dioxin/Furans in Soil, Tronox LLC, Henderson, Nevada (Revised) Dated: May 24, 2010.* May 25.

TABLE 2. Preliminary Identification of On-site Receptors and Exposure Pathways
Nevada Environmental Response Trust Site, Henderson, Nevada

Receptor	Soil: Direct Contact Pathways						Soil: Indirect Contact Pathways		Groundwater		Groundwater (extracted)	Surface Water
	Ingestion		Dermal Contact		External Gamma		Inhalation (Particulates)	Inhalation (Soil vapors)	Inhalation (VOCs)	Ingestion, Dermal Contact	Ingestion, Dermal Contact, Inhalation (VOCs)	Ingestion, Dermal Contact
	C1	C3/C4	C1	C3/C4	C1	C3/C4	C1/C3/C4	C1/C3/C4				
Short-term Construction Worker	SMP	✓	SMP	✓	SMP	✓	✓	⊙	⊙	inc	inc	○
Outdoor Commercial/ Industrial Worker	SMP	✓	SMP	✓	SMP	✓	✓	⊙	⊙	inc	OSHA	○
Indoor Commercial/ Industrial Worker	✓	✓	○	○	✓	✓	✓	✓	✓	inc	inc	inc
Visitor/ Trespasser	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	inc	inc	⊙

Notes:

C1 Category 1 soils 0 – 10 feet bgs post-excavation in an Excavation Control Area
C2 Category 2 soils 0 – 10 feet bgs post-excavation with concentrations <Basic Comparison Levels (BCLs) (not shown in this table)
C3 Category 3 soils 0 – 10 feet bgs post-excavation with concentrations >BCLs
C4 Category 4 soils 0 – 10 feet bgs post-excavation not previously sampled or available information considered inadequate

inc Incomplete exposure pathway
OSHA Workers at the groundwater extraction and treatment facilities could potentially be exposed to contaminants in extracted groundwater. However, potential exposures will not be evaluated quantitatively because the workers are regulated by the Occupational Safety and Health Administration (OSHA) and a comprehensive worker health and safety plan (HASP) is in place to mitigate potential exposures.
SMP Site Management Plan -- potential exposures for direct-contact pathways will be managed through the SMP

✓ Complete exposure pathway; evaluated quantitatively in the BHRA.
⊙ Exposures of outdoor workers via inhalation of soil or groundwater vapors would be less than exposures of indoor workers; inhalation of vapors in outdoor air will be evaluated only if estimated risks for the vapor intrusion (indoor) pathway are >1 × 10^{-6} or the hazard index is >1.
○ Potentially complete, but insignificant exposure pathway; not evaluated quantitatively because potential exposures are expected to be intermittent and of short duration; surface water pathways are discussed qualitatively.
○ Complete, but insignificant exposure pathway. Consistent with USEPA guidance (USEPA 2002) and the NDEP-approved 2010 HRA work plan (Northgate 2010d), potential exposures of indoor workers to soil from dermal exposure are not evaluated quantitatively, but will be discussed qualitatively.
⊙ Potentially complete exposure pathway; not evaluated quantitatively because potential exposures of a trespasser would be less than those of an on-site worker; the trespasser is discussed qualitatively.

TABLE 3. Preliminary Identification of Off-site Receptors and Exposure Pathways
Nevada Environmental Response Trust Site, Henderson, Nevada

Receptor	Soil (C1, C3, C4)	Groundwater		Surface Water (Las Vegas Wash, Lake Mead, downstream Colorado River)
	Inhalation (Particulates)	Inhalation (VOCs)	Ingestion, Dermal Contact	Ingestion, Dermal Contact
Off-site Resident	O	(✓)	inc	(✓)
Off-site Outdoor Commercial/ Industrial Worker	O	(✓)	inc	(✓)
Off-site Indoor Commercial/ Industrial Worker	O	(✓)	inc	(✓)
Recreational User (Child/Adult)	O	(✓)	inc	(✓)

Notes:

C1 Category 1 soils 0 – 10 feet bgs post-excavation in an Excavation Control Area
C2 Category 2 soils 0 – 10 feet bgs post-excavation with concentrations <Basic Comparison Levels (BCLs) (not shown in this table)
C3 Category 3 soils 0 – 10 feet bgs post-excavation with concentrations >BCLs
C4 Category 4 soils 0 – 10 feet bgs post-excavation not previously sampled or available information considered inadequate

inc Incomplete exposure pathway

(✓) Potentially complete exposure pathway for indoor and outdoor air; pathway will be evaluated quantitatively using analytical results for soil gas and/or groundwater depending on receptor location and data availability. The specific receptors and pathways (i.e., indoor and outdoor exposures) that will be evaluated quantitatively will depend on various factors, including the results from additional sampling for VOCs in the downgradient groundwater plume and/or results from off-site soil gas investigations.

(✓) Complete exposure pathway; for perchlorate, pathway will be evaluated by comparing surface water concentrations to the Nevada Provisional Action Level for perchlorate.

O Exposures of all off-site receptors via inhalation of airborne soil particulates would be significantly less than exposures of on-site workers; inhalation of particulates will be evaluated only if estimated risks for on-site receptors are >1E-06 or the hazard index is >1.

TABLE 4. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Perchlorate, Metals, Radionuclides, General Chemistry, and Inorganic Anions [a,b]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[c]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[c]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value[d]	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Perchlorate	**Perchlorate**	**mg/kg**	**279**	**264**	**95**	**2.6E-02**	**2.2E-01**	**1.2E-05**	**2.8E+00**	**8.0E+01**	**2.6E+03**	**2.8E+02**	**3.5E+00**	**RSAM5**	**8.0E+02**	**9**	**3.3E+00**
Metals	Aluminum	mg/kg	195	195	100	--	--	5.1E+03	8.9E+03	8.8E+03	1.2E+04	1.4E+03	1.6E-01	SA43	1.0E+05	0	1.2E-01
	Antimony	mg/kg	192	58	30	3.2E-02	1.2E+00	1.1E-01	4.1E-01	5.8E-01	2.4E+00	6.8E-01	1.2E+00	SA114	4.5E+02	0	5.3E-03
	Arsenic	**mg/kg**	**518**	**518**	**100**	**--**	**--**	**1.2E+00**	**3.1E+00**	**3.8E+00**	**2.5E+01**	**2.2E+00**	**5.7E-01**	**SA149**	**7.2E+00**	**17**	**3.5E+00**
	Barium	mg/kg	195	195	100	--	--	8.0E+01	1.8E+02	1.9E+02	1.8E+03	1.2E+02	6.5E-01	SA123	1.0E+05	0	1.8E-02
	Beryllium	mg/kg	195	195	100	--	--	2.2E-01	4.6E-01	4.6E-01	7.1E-01	7.5E-02	1.6E-01	SA86	2.2E+03	0	3.2E-04
	Boron	mg/kg	195	59	30	1.7E+00	6.5E+00	1.5E+00	1.3E+01	7.5E+01	1.5E+03	2.7E+02	3.5E+00	SA62	1.0E+05	0	1.5E-02
	Cadmium	mg/kg	195	132	68	4.5E-02	5.5E-02	4.0E-02	1.7E-01	2.5E-01	8.9E+00	7.8E-01	3.2E+00	SA103	1.1E+03	0	8.0E-03
	Calcium	mg/kg	195	195	100	--	--	9.9E+03	2.8E+04	2.8E+04	6.3E+04	9.2E+03	3.3E-01	RSAM2	--	0	--
	Chromium (total)	mg/kg	197	197	100	--	--	3.5E+00	8.3E+00	1.1E+01	1.0E+02	1.3E+01	1.1E+00	SA106	--	0	--
	Chromium VI	mg/kg	231	77	33	5.5E-02	2.6E-01	1.1E-01	8.5E-01	6.7E+00	1.1E+02	1.9E+01	2.9E+00	SA106	1.2E+03	0	8.6E-02
	Cobalt	mg/kg	240	240	100	--	--	3.2E+00	7.9E+00	1.2E+01	2.8E+02	3.0E+01	2.4E+00	RSAO8	3.4E+02	0	8.4E-01
	Copper	mg/kg	195	195	100	--	--	8.0E+00	1.8E+01	1.8E+01	7.7E+01	6.8E+00	3.7E-01	RSAO8	4.2E+04	0	1.8E-03
	Cyanide (total)	mg/kg	136	3	2	6.5E-02	6.1E-01	4.8E-01	6.0E-01	7.9E-01	1.3E+00	4.4E-01	5.6E-01	RSAJ2	2.8E+01	0	4.7E-02
	Iron	mg/kg	195	195	100	--	--	7.1E+03	1.4E+04	1.5E+04	2.1E+04	2.6E+03	1.8E-01	RSAO8	1.0E+05	0	2.1E-01
	Lead	mg/kg	258	258	100	--	--	3.6E+00	1.0E+01	1.3E+01	2.7E+02	2.0E+01	1.6E+00	SA92	8.0E+02	0	3.3E-01
	Lithium	mg/kg	1	0	0	3.3E-01	3.3E-01	ND	ND	ND	ND	ND	NA	ND	2.3E+03	0	1.4E-04
	Magnesium	mg/kg	244	244	100	--	--	5.3E+03	9.2E+03	1.1E+04	7.1E+04	5.5E+03	5.1E-01	DS-C39B-1	1.0E+05	0	7.1E-01
	Manganese	**mg/kg**	**340**	**340**	**100**	**--**	**--**	**1.3E+02**	**4.2E+02**	**9.3E+02**	**2.9E+04**	**2.3E+03**	**2.5E+00**	**CS-C44-1**	**2.5E+04**	**1**	**1.2E+00**
	Mercury	mg/kg	197	175	89	5.8E-03	2.0E-02	3.0E-03	2.1E-02	1.9E-02	3.1E-01	3.0E-02	1.6E+00	SA165	1.8E+02	0	1.7E-03
	Molybdenum	mg/kg	195	184	94	1.6E-01	1.7E-01	1.7E-01	5.7E-01	5.6E-01	2.9E+00	3.4E-01	6.1E-01	RSAK8	5.7E+03	0	5.1E-04
	Nickel	mg/kg	195	195	100	--	--	6.6E+00	1.5E+01	1.6E+01	1.6E+02	1.1E+01	7.0E-01	RSAO8	2.2E+04	0	7.5E-03
	Niobium	mg/kg	1	0	0	7.5E-01	7.5E-01	ND	ND	ND	ND	ND	NA	ND	1.1E+02	0	6.6E-03
	Phosphorus (total)	mg/kg	168	168	100	--	--	4.6E+02	8.2E+02	8.3E+02	1.3E+03	1.7E+02	2.0E-01	RSAO2	--	0	--
	Platinum	mg/kg	195	122	63	1.2E-02	1.2E-01	5.0E-03	1.9E-02	1.5E-02	1.6E-01	1.7E-02	1.1E+00	SA64	5.7E+02	0	2.8E-04
	Potassium	mg/kg	195	195	100	--	--	1.2E+03	2.3E+03	2.3E+03	4.2E+03	5.5E+02	2.4E-01	RSAO6	--	0	--
	Selenium	mg/kg	195	5	3	8.0E-02	2.4E+00	8.0E-01	9.0E-01	9.4E-01	1.0E+00	8.9E-02	9.5E-02	SA158 and SA207	5.7E+03	0	4.1E-04
	Silicon	mg/kg	1	1	100	--	--	4.0E+02	4.0E+02	4.0E+02	4.0E+02	NA	NA	TSB-CJ-09	--	0	--
	Silver	mg/kg	195	45	23	1.1E-02	3.0E-01	2.0E-02	8.4E-02	3.1E-01	7.6E+00	1.1E+00	3.6E+00	SA201	5.7E+03	0	1.3E-03
	Sodium	mg/kg	195	195	100	--	--	2.0E+02	7.5E+02	1.2E+03	1.2E+04	1.3E+03	1.1E+00	SA106	--	0	--
	Strontium	mg/kg	195	195	100	--	--	7.3E+01	2.1E+02	2.1E+02	8.1E+02	9.4E+01	4.5E-01	SA15	1.0E+05	0	8.1E-03
	Thallium	mg/kg	195	176	90	7.5E-02	1.3E-01	5.4E-02	1.2E-01	1.8E-01	8.4E+00	6.4E-01	3.6E+00	SA180	7.5E+01	0	1.1E-01
	Tin	mg/kg	195	31	16	4.4E+00	6.1E+00	4.0E-01	5.5E-01	1.7E+00	1.2E+01	2.7E+00	1.5E+00	RSAK8	1.0E+05	0	1.2E-04
	Titanium	mg/kg	195	195	100	--	--	3.4E+02	7.6E+02	7.4E+02	1.3E+03	1.8E+02	2.4E-01	SA166	1.0E+05	0	1.3E-02
	Tungsten	mg/kg	195	175	90	5.0E-02	3.3E-01	1.0E-01	3.7E-01	4.2E-01	8.5E+00	8.0E-01	1.9E+00	RSAK8	8.5E+03	0	1.0E-03
	Vanadium	mg/kg	195	195	100	--	--	2.2E+01	4.2E+01	4.2E+01	7.8E+01	9.1E+00	2.2E-01	RSAK8	5.7E+03	0	1.4E-02
	Zinc	mg/kg	195	195	100	--	--	1.8E+01	3.2E+01	3.4E+01	2.7E+02	2.0E+01	5.9E-01	RSAL5	1.0E+05	0	2.7E-03
	Zirconium	mg/kg	1	1	100	--	--	2.2E+01	2.2E+01	2.2E+01	2.2E+01	NA	NA	TSB-CJ-09	9.1E+01	0	2.4E-01
Radionuclides	Radium-226	pci/g	190	184	97	2.5E-01	2.5E-01	2.0E-01	8.4E-01	9.8E-01	2.5E+00	4.0E-01	4.1E-01	SA92	--	0	--
	Radium-228	pci/g	190	181	95	2.2E-01	1.2E+00	3.8E-01	1.2E+00	1.3E+00	3.3E+00	4.8E-01	3.7E-01	SA70	--	0	--
	Thorium	pci/g	193	193	100	--	--	5.4E-01	1.6E+00	1.6E+00	2.5E+00	3.4E-01	2.2E-01	SA189	--	0	--
	Thorium-234	pci/g	21	0	0	3.7E+00	5.4E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Thorium-228	pci/g	193	193	100	--	--	4.8E-01	1.8E+00	1.7E+00	3.0E+00	3.7E-01	2.1E-01	SA65	--	0	--
	Thorium-230	pci/g	193	193	100	--	--	4.3E-01	1.1E+00	1.2E+00	4.3E+00	5.4E-01	4.4E-01	SA74	--	0	--
	Uranium-234	pci/g	193	193	100	--	--	2.7E-01	9.7E-01	1.2E+00	3.7E+00	5.0E-01	4.3E-01	SA149	--	0	--
	Uranium-235	pci/g	193	136	70	4.6E-03	2.3E-01	1.1E-02	6.1E-02	7.3E-02	2.5E-01	4.1E-02	5.6E-01	RSAK6	--	0	--
	Uranium-238	pci/g	193	180	93	5.1E-01	1.4E+00	2.4E-01	9.4E-01	1.1E+00	3.6E+00	4.7E-01	4.4E-01	SA149	1.1E+03	0	3.2E-03
	U-Total (Rads)	µg/kg	195	195	100	--	--	5.5E+02	ND	1.2E+03	3.9E+03	6.1E+02	5.0E-01	ND	--	0	--
General Chemistry	Ammonia	mg/kg	187	24	13	2.6E-01	3.3E+00	1.6E-04	1.8E-03	5.8E-02	5.6E-01	1.4E-01	2.5E+00	RSAM5	1.0E+05	0	3.3E-05
	Bromine	mg/kg	1	0	0	2.6E+00	2.6E+00	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	2.6E-05
	Organic Carbon (total)	mg/kg	191	189	99	1.5E+02	1.5E+02	2.7E-01	1.0E+00	2.0E+00	1.5E+01	2.6E+00	1.3E+00	SA05	--	0	--
	Carbonate	mg/kg	167	120	72	1.0E+01	1.2E+02	3.0E-03	3.7E-02	6.0E-02	2.3E+00	2.3E-01	3.8E+00	RSAI7	--	0	--
	Chlorine	mg/kg	1	1	100	--	--	1.0E-01	1.0E-01	1.0E-01	1.0E-01	NA	NA	TSB-CJ-09	1.0E+05	0	1.0E-06
	Chlorite	mg/kg	1	0	0	2.4E-02	2.4E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Hydrogen carbonate	mg/kg	191	187	98	1.0E+02	1.1E+02	7.3E-02	3.5E-01	4.5E-01	3.0E+00	3.8E-01	8.4E-01	SA06	--	0	--
	Methylene Blue Active Substances	mg/kg	191	31	16	1.0E+00	1.3E+00	7.0E-04	2.1E-03	3.1E-03	3.5E-02	6.0E-03	1.9E+00	SA64	--	0	--
	Nitrate	mg/kg	192	169	88	2.4E-02	3.0E+00	2.1E-04	4.3E-03	1.5E-02	5.2E-01	4.6E-02	3.0E+00	SA15	1.0E+05	0	3.0E-05
	Nitrite	mg/kg	191	40	21	1.0E-02	1.1E+01	9.0E-05	6.0E-04	3.3E-03	7.7E-02	1.2E-02	3.7E+00	SA64	1.0E+05	0	1.1E-04
	Sulfur	mg/kg	1	1	100	--	--	1.4E+00	1.4E+00	1.4E+00	1.4E+00	NA	NA	TSB-CJ-09	--	0	--

TABLE 4. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Perchlorate, Metals, Radionuclides, General Chemistry, and Inorganic Anions [a,b]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[c]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[c]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value[d]	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Inorganic Anions	Bromide	mg/kg	189	24	13	1.3E-01	1.4E+01	2.0E-04	1.2E-03	4.6E-03	8.3E-02	1.7E-02	3.7E+00	SA15	--	0	--
	Chloride	mg/kg	188	175	93	1.1E+00	4.3E+01	9.0E-04	6.8E-02	3.8E-01	6.7E+00	8.5E-01	2.3E+00	RSAJ2	--	0	--
	Fluoride	mg/kg	1	0	0	5.0E-02	5.0E-02	ND	ND	ND	ND	ND	NA	ND	4.1E+04	0	1.2E-06
	Orthophosphate	mg/kg	25	6	24	2.5E-01	2.8E+01	2.4E-03	6.5E-03	4.9E-01	2.9E+00	1.2E+00	2.4E+00	SA11	--	0	--
	Sulfate	mg/kg	192	189	98	1.1E+00	1.1E+01	6.7E-03	1.7E-01	8.1E-01	1.5E+01	2.3E+00	2.9E+00	SA65	--	0	--

Notes:

-- = No value
bgs = below ground surface
ft = feet
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram
pci/g = picocuries per gram

ECA = Excavation control area
NA = Not applicable
ND = Nondetects

[a] Summary statistics presented for all locations across the Site, excluding soil in ECAs.
[b] Chemicals that have maximum detections that exceed their respective BCLs are bolded and highlighted gray.
[c] In the absence of soil data for white phosphorus, it is inappropriate to use the white phosphorus BCL for comparison to the total phosphorus results. Thus, there is no BCL for total phosphorus.
[d] The minimum and maximum non-detected values are represented by one half of the sample quantitation limit.

TABLE 5. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Detected Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
VOCs	Acetone	µg/kg	215	93	43	1.6E+00	2.1E+01	2.7E+00	ND	2.2E+01	1.5E+02	2.6E+01	1.2E+00	ND	1.0E+05	0	1.5E-03
	Bromodichloromethane	µg/kg	215	2	1	5.5E-02	5.0E+00	4.0E-01	ND	5.5E-01	6.9E-01	2.1E-01	3.8E-01	ND	3.4E+00	0	1.5E+00
	Bromoform	µg/kg	215	1	0.5	3.0E-02	5.0E+00	1.7E+00	ND	1.7E+00	1.7E+00	NA	NA	ND	2.4E+02	0	2.1E-02
	2-Butanone	µg/kg	215	73	34	4.7E-01	1.0E+01	6.5E-01	ND	3.3E+00	2.7E+01	5.1E+00	1.6E+00	ND	3.4E+04	0	7.9E-04
	Carbon Tetrachloride	µg/kg	215	1	0.5	1.0E-01	5.0E+00	6.3E-01	ND	6.3E-01	6.3E-01	NA	NA	ND	3.8E+00	0	1.3E+00
	Chlorobenzene	µg/kg	215	6	3	5.4E-02	5.0E+00	6.4E-01	ND	1.1E+00	1.9E+00	4.4E-01	3.9E-01	ND	7.0E+02	0	7.2E-03
	Chloroform	**µg/kg**	**215**	**81**	**38**	**5.0E-02**	**4.6E+00**	**3.1E-01**	**ND**	**8.1E+00**	**1.5E+02**	**2.4E+01**	**2.9E+00**	**ND**	**1.6E+00**	**0**	**9.7E+01**
	p-Cymene	µg/kg	215	1	0.5	6.2E-02	5.0E+00	5.5E-01	ND	5.5E-01	5.5E-01	NA	NA	ND	6.5E+02	0	7.7E-03
	1,2-Dichlorobenzene	µg/kg	215	5	2	6.1E-02	5.0E+00	2.6E-01	ND	3.6E-01	3.9E-01	5.5E-02	1.5E-01	ND	3.7E+02	0	1.3E-02
	1,4-Dichlorobenzene	**µg/kg**	**215**	**4**	**2**	**6.8E-02**	**5.0E+00**	**5.6E-01**	**ND**	**4.7E+00**	**1.6E+01**	**7.5E+00**	**1.6E+00**	**ND**	**1.4E+01**	**0**	**1.2E+00**
	1,1-Dichloroethane	µg/kg	215	1	0.5	3.5E-02	5.0E+00	3.0E+00	ND	3.0E+00	3.0E+00	NA	NA	ND	2.1E+01	0	2.3E-01
	1,1-Dichloroethene	µg/kg	215	3	1	6.0E-02	5.0E+00	7.1E-01	ND	9.1E-01	1.2E+00	2.6E-01	2.8E-01	ND	1.3E+03	0	3.9E-03
	Ethyl tert-butyl ether	µg/kg	214	1	0.5	1.1E+00	5.0E+00	3.8E-01	ND	3.8E-01	3.8E-01	NA	NA	ND	--	0	--
	Methylene Chloride	µg/kg	215	65	30	3.4E-01	5.0E+00	3.4E-01	ND	1.7E+00	8.2E+00	1.3E+00	7.7E-01	ND	5.9E+01	0	1.4E-01
	Styrene	µg/kg	215	1	0.5	8.7E-02	5.0E+00	2.8E-01	ND	2.8E-01	2.8E-01	NA	NA	ND	1.7E+03	0	2.9E-03
	tert Butyl alcohol	µg/kg	214	1	0.5	2.6E+00	1.0E+02	7.6E+00	ND	7.6E+00	7.6E+00	NA	NA	ND	2.1E+04	0	4.7E-03
	Tetrachloroethene	µg/kg	215	3	1	4.4E-02	5.0E+00	6.8E-01	ND	9.7E-01	1.5E+00	4.6E-01	4.7E-01	ND	3.3E+00	0	1.5E+00
	Toluene	µg/kg	215	53	25	1.6E-01	5.0E+00	2.3E-01	ND	8.5E-01	2.2E+00	4.0E-01	4.7E-01	ND	5.2E+02	0	9.6E-03
	1,2,3-Trichlorobenzene	µg/kg	215	2	1	1.9E-01	5.0E+00	8.1E-01	ND	1.1E+00	1.3E+00	3.5E-01	3.3E-01	ND	--	0	--
	1,2,4-Trichlorobenzene	µg/kg	215	5	2	1.7E-01	5.0E+00	6.5E-01	ND	1.5E+00	3.7E+00	1.3E+00	8.4E-01	ND	1.1E+02	0	4.5E-02
	1,1,1-Trichloroethane	µg/kg	215	1	0.5	5.3E-02	5.0E+00	9.5E-01	ND	9.5E-01	9.5E-01	NA	NA	ND	1.4E+03	0	3.6E-03
	Trichloroethene	µg/kg	215	2	1	5.2E-02	5.0E+00	4.2E-01	ND	4.6E-01	5.0E-01	5.7E-02	1.2E-01	ND	5.5E+00	0	9.1E-01
	Trichlorofluoromethane	µg/kg	215	5	2	1.1E-01	5.0E+00	3.5E-01	ND	1.3E+00	1.7E+00	5.7E-01	4.4E-01	ND	2.0E+03	0	2.5E-03
	1,2,4-Trimethylbenzene	µg/kg	215	2	1	6.7E-02	5.0E+00	8.6E-01	ND	9.1E-01	9.5E-01	6.4E-02	7.0E-02	ND	6.0E+02	0	8.3E-03
	Vinyl Chloride	µg/kg	215	1	0.5	5.6E-02	5.0E+00	2.8E-01	ND	2.8E-01	2.8E-01	NA	NA	ND	1.9E+00	0	2.7E+00
	m,p-xylene	µg/kg	191	4	2	8.3E-02	5.0E+00	9.3E-01	ND	1.2E+00	1.5E+00	2.4E-01	2.0E-01	ND	--	0	--
	ortho-xylene	µg/kg	191	1	1	3.8E-02	5.0E+00	4.6E-01	ND	4.6E-01	4.6E-01	NA	NA	ND	2.8E+02	0	1.8E-02
SVOCs	**bis(2-Ethylhexyl)phthalate**	**µg/kg**	**449**	**96**	**21**	**1.7E+01**	**2.5E+03**	**5.8E+01**	**ND**	**8.1E+02**	**6.1E+04**	**6.2E+03**	**7.7E+00**	**ND**	**1.4E+02**	**0**	**4.5E+02**
	Butylbenzylphthalate	µg/kg	449	6	1	1.7E+01	2.3E+03	3.3E+00	ND	1.9E+01	5.3E+01	1.9E+01	1.0E+00	ND	2.4E+02	0	9.6E+00
	Diethylphthalate	µg/kg	449	5	1	1.2E+01	1.4E+03	4.2E+01	ND	1.1E+02	3.5E+02	1.3E+02	1.2E+00	ND	1.0E+05	0	1.4E-02
	Dimethoate	µg/kg	40	3	8	1.1E+01	1.3E+01	1.1E+01	ND	1.2E+01	1.3E+01	1.0E+00	8.3E-02	ND	--	0	--
	Dimethylphthalate	µg/kg	449	53	12	1.1E+01	1.4E+03	1.5E+00	ND	1.2E+02	7.9E+02	1.7E+02	1.4E+00	ND	1.0E+05	0	1.4E-02
	Di-n-butylphthalate	µg/kg	449	30	7	1.4E+01	1.6E+03	3.5E+01	ND	6.4E+02	7.5E+03	1.5E+03	2.3E+00	ND	6.8E+04	0	1.1E-01
	Di-n-octylphthalate	µg/kg	449	3	1	6.5E+00	1.4E+03	7.0E+01	ND	8.1E+01	8.8E+01	9.5E+00	1.2E-01	ND	--	0	--
	Hexachlorobutadiene	µg/kg	215	5	2	1.4E-01	1.7E+01	9.5E-01	ND	2.2E+00	4.5E+00	1.4E+00	6.4E-01	ND	2.5E+01	0	6.8E-01
	1-Methylnaphthalene	µg/kg	7	3	43	1.3E-01	2.5E-01	6.2E-01	ND	1.7E+00	3.3E+00	1.4E+00	8.5E-01	ND	--	0	--
	2-Methylnaphthalene	µg/kg	464	7	2	1.6E-01	1.0E+03	7.7E-01	ND	8.7E+00	3.0E+01	1.0E+01	1.2E+00	ND	--	0	--
PAHs	Acenaphthene	µg/kg	464	4	1	8.0E-02	5.5E+02	6.2E-01	ND	1.2E+01	2.6E+01	1.2E+01	1.0E+00	ND	2.4E+03	0	2.3E-01
	Acenaphthylene	µg/kg	464	5	1	8.5E-02	9.0E+02	6.6E-01	ND	1.4E+00	2.4E+00	6.4E-01	4.5E-01	ND	1.5E+02	0	6.1E+00
	Anthracene	µg/kg	464	13	3	3.4E-01	9.0E+02	5.5E-01	ND	6.9E+00	2.4E+01	8.3E+00	1.2E+00	ND	9.1E+03	0	9.9E-02
	Benzo(a)anthracene	**µg/kg**	**464**	**54**	**12**	**4.5E-01**	**1.1E+03**	**7.2E-01**	**ND**	**3.1E+01**	**3.4E+02**	**5.7E+01**	**1.8E+00**	**ND**	**2.3E+00**	**0**	**4.5E+02**
	Benzo(a)pyrene	**µg/kg**	**463**	**34**	**7**	**3.7E-01**	**1.1E+03**	**3.2E+00**	**ND**	**4.1E+01**	**2.3E+02**	**5.1E+01**	**1.2E+00**	**ND**	**2.3E-01**	**1**	**4.5E+03**
	Benzo(a)pyrene TEQ	µg/kg	44	44	100	--	--	8.9E-01	ND	4.9E+01	4.3E+02	1.0E+02	2.1E+00	ND	--	0	--
	Benzo(b)fluoranthene	**µg/kg**	**463**	**44**	**10**	**6.0E-01**	**1.4E+03**	**1.4E+00**	**ND**	**5.6E+01**	**2.5E+02**	**6.7E+01**	**1.2E+00**	**ND**	**2.3E+00**	**0**	**6.0E+02**
	Benzo(g,h,i)perylene	µg/kg	463	48	10	5.5E-01	8.5E+02	1.4E+00	ND	3.5E+01	3.8E+02	6.2E+01	1.7E+00	ND	3.4E+04	0	2.5E-02
	Benzo(k)fluoranthene	**µg/kg**	**463**	**29**	**6**	**5.0E-01**	**2.2E+03**	**1.7E+00**	**ND**	**2.4E+01**	**1.4E+02**	**3.6E+01**	**1.5E+00**	**ND**	**2.3E+01**	**0**	**9.2E+01**
	Chrysene	**µg/kg**	**464**	**75**	**16**	**5.0E-01**	**1.5E+03**	**1.0E+00**	**ND**	**5.0E+01**	**7.9E+02**	**1.0E+02**	**2.1E+00**	**ND**	**2.3E+02**	**0**	**6.2E+00**
	Dibenz(a,h)anthracene	**µg/kg**	**462**	**13**	**3**	**6.5E-01**	**1.0E+03**	**1.8E+00**	**ND**	**3.0E+01**	**1.2E+02**	**3.8E+01**	**1.3E+00**	**ND**	**2.3E-01**	**1**	**4.3E+03**
	Fluoranthene	µg/kg	464	64	14	5.0E-01	2.0E+03	1.7E+00	ND	3.7E+01	3.5E+02	6.4E+01	1.8E+00	ND	2.4E+04	0	8.0E-02
	Fluorene	µg/kg	464	2	0.4	2.4E-01	9.5E+02	5.2E-01	ND	7.6E-01	1.0E+00	3.4E-01	4.5E-01	ND	3.4E+03	0	2.8E-01
	Hexachlorobenzene	**µg/kg**	**855**	**481**	**56**	**1.4E-01**	**1.6E+03**	**3.2E-01**	**ND**	**2.0E+02**	**4.7E+03**	**4.0E+02**	**2.1E+00**	**ND**	**1.2E+00**	**8**	**3.9E+03**
	Indeno(1,2,3-cd)pyrene	**µg/kg**	**463**	**37**	**8**	**5.5E-01**	**1.2E+03**	**1.0E+00**	**ND**	**2.3E+01**	**1.1E+02**	**2.8E+01**	**1.2E+00**	**ND**	**2.3E+00**	**0**	**5.1E+02**
	Naphthalene	µg/kg	678	25	4	1.6E-01	1.7E+03	4.0E-01	ND	2.2E+00	1.5E+01	3.0E+00	1.4E+00	ND	1.6E+01	0	1.1E+02
	Phenanthrene	**µg/kg**	**464**	**60**	**13**	**5.5E-01**	**9.0E+02**	**1.7E+00**	**ND**	**3.6E+01**	**1.0E+03**	**1.3E+02**	**3.7E+00**	**ND**	**2.5E+01**	**0**	**4.1E+01**
	Pyrene	µg/kg	464	88	19	5.5E-01	6.5E+02	1.1E+00	ND	3.6E+01	2.7E+02	5.7E+01	1.6E+00	ND	1.9E+04	0	3.4E-02

TABLE 5. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Detected Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Organochlorine Pesticides	**Aldrin**	**µg/kg**	**250**	**2**	**1**	**4.8E-02**	**4.6E+01**	**4.9E-01**	**ND**	**5.1E-01**	**5.2E-01**	**2.1E-02**	**4.2E-02**	**ND**	**1.1E-01**	**0**	**4.1E+02**
	alpha-BHC	µg/kg	250	11	4	1.1E-01	4.6E+01	2.4E-01	ND	7.2E-01	2.5E+00	6.7E-01	9.3E-01	ND	2.7E+02	0	1.7E-01
	beta-BHC	**µg/kg**	**250**	**146**	**58**	**3.2E-01**	**7.5E+01**	**7.2E-01**	**ND**	**3.9E+01**	**8.7E+02**	**9.8E+01**	**2.5E+00**	**ND**	**5.4E+01**	**0**	**1.6E+01**
	delta-BHC	µg/kg	250	7	3	8.4E-02	4.6E+01	4.8E-01	ND	7.9E-01	1.5E+00	3.8E-01	4.8E-01	ND	2.7E+02	0	1.7E-01
	gamma-BHC	µg/kg	250	2	1	6.2E-02	5.5E+01	8.3E-01	ND	1.1E+00	1.3E+00	3.3E-01	3.1E-01	ND	9.0E+00	0	6.1E+00
	Chlordane (total)	µg/kg	241	1	0.4	1.1E-01	2.3E+02	3.0E+00	ND	3.0E+00	3.0E+00	NA	NA	ND	7.2E+00	0	3.1E+01
	gamma-Chlordane	µg/kg	250	1	0.4	1.3E-01	4.6E+01	2.4E+00	ND	2.4E+00	2.4E+00	NA	NA	ND	--	0	--
	4,4'-DDD	**µg/kg**	**250**	**9**	**4**	**4.5E-02**	**9.0E+01**	**1.4E+00**	**ND**	**8.5E+00**	**3.2E+01**	**9.6E+00**	**1.1E+00**	**ND**	**1.1E+01**	**0**	**8.1E+00**
	2,4'-DDE	µg/kg	1	1	100	--	--	9.7E+00	ND	9.7E+00	9.7E+00	NA	NA	ND	--	0	--
	4,4'-DDE	**µg/kg**	**250**	**135**	**54**	**1.2E-01**	**9.0E+01**	**4.0E-01**	**ND**	**2.9E+02**	**6.0E+03**	**8.7E+02**	**3.0E+00**	**ND**	**7.8E+00**	**0**	**7.7E+02**
	4,4'-DDT	**µg/kg**	**250**	**102**	**41**	**2.9E-01**	**9.0E+01**	**6.6E-01**	**ND**	**1.1E+02**	**2.3E+03**	**2.9E+02**	**2.6E+00**	**ND**	**7.8E+00**	**0**	**2.9E+02**
	Dieldrin	**µg/kg**	**250**	**4**	**2**	**4.6E-02**	**9.0E+01**	**2.7E-01**	**ND**	**2.3E+01**	**5.9E+01**	**2.8E+01**	**1.2E+00**	**ND**	**1.2E-01**	**0**	**7.5E+02**
	Endosulfan I	µg/kg	250	2	1	5.3E-02	4.6E+01	2.4E-01	ND	8.7E-01	1.5E+00	8.9E-01	1.0E+00	ND	--	0	--
	Endosulfan sulfate	µg/kg	250	2	1	1.3E-01	9.0E+01	4.2E+00	ND	1.0E+01	1.6E+01	8.3E+00	8.3E-01	ND	--	0	--
	Endrin	µg/kg	250	2	1	4.2E-02	9.0E+01	7.0E-01	ND	3.1E+00	5.4E+00	3.3E+00	1.1E+00	ND	2.1E+02	0	4.4E-01
	Endrin ketone	µg/kg	250	9	4	8.2E-02	9.0E+01	6.1E-01	ND	3.7E+00	2.0E+01	6.3E+00	1.7E+00	ND	--	0	--
	Heptachlor epoxide	**µg/kg**	**250**	**1**	**0.4**	**6.6E-02**	**4.9E+01**	**3.7E+01**	**ND**	**3.7E+01**	**3.7E+01**	**NA**	**NA**	**ND**	**2.1E-01**	**0**	**2.3E+02**
	Methoxychlor	µg/kg	250	15	6	1.6E-01	4.6E+02	5.0E-01	ND	6.8E+01	3.8E+02	1.3E+02	1.8E+00	ND	3.4E+03	0	1.3E-01
	Octachlorostyrene	µg/kg	447	79	18	3.4E+00	3.1E+03	2.1E+00	ND	1.1E+02	2.1E+03	2.5E+02	2.3E+00	ND	--	0	--
	Toxaphene	**µg/kg**	**250**	**1**	**0.4**	**2.9E+00**	**1.8E+03**	**6.2E+02**	**ND**	**6.2E+02**	**6.2E+02**	**NA**	**NA**	**ND**	**1.7E+00**	**2**	**1.0E+03**
Organophosphorus Pesticides	Stirphos	µg/kg	40	1	3	7.5E+00	9.5E+00	4.1E+01	ND	4.1E+01	4.1E+01	NA	NA	ND	--	0	--
Polychlorinated Biphenyls	**Aroclor-1248**	**µg/kg**	**51**	**1**	**2**	**2.5E+00**	**1.9E+02**	**9.1E+01**	**ND**	**9.1E+01**	**9.1E+01**	**NA**	**NA**	**ND**	**8.3E-01**	**0**	**2.2E+02**
	Aroclor-1260	**µg/kg**	**51**	**1**	**2**	**1.3E+00**	**1.9E+02**	**3.4E+01**	**ND**	**3.4E+01**	**3.4E+01**	**NA**	**NA**	**ND**	**8.3E-01**	**0**	**2.2E+02**
Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	454	310	68	4.3E-02	4.3E+01	2.8E-02	3.4E+00	1.4E+01	7.6E+02	5.6E+01	4.0E+00	RSAI7	1.0E+03	0	7.6E-01
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	454	318	70	8.0E-02	2.2E+02	3.9E-02	5.6E+00	4.5E+01	2.2E+03	1.7E+02	3.8E+00	RSAI7	--	0	--
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	454	334	74	4.9E-02	1.9E+02	5.7E-02	4.7E+00	3.2E+01	1.8E+03	1.4E+02	4.3E+00	RSAI7	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	454	398	88	7.0E-02	3.4E+01	6.2E-02	4.6E+00	5.9E+01	3.9E+03	2.9E+02	5.0E+00	RSAI7	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	**pg/g**	**454**	**396**	**87**	**4.5E-02**	**8.5E+01**	**6.1E-02**	**4.1E+00**	**5.6E+01**	**4.9E+03**	**3.3E+02**	**5.9E+00**	**RSAI7**	**3.1E+02**	**7**	**1.6E+01**
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	454	411	91	6.0E-01	2.2E+01	8.6E-02	1.3E+01	2.2E+02	1.7E+04	1.2E+03	5.4E+00	RSAI7	--	0	--
	Octachlorodibenzo-p-dioxin	pg/g	454	413	91	1.5E+00	3.8E+01	2.5E-01	2.9E+01	3.7E+02	2.3E+04	2.0E+03	5.3E+00	SSAK5-01	--	0	--
	TCDD (total)	pg/g	74	68	92	4.9E-01	9.5E-01	3.3E-02	5.1E+01	1.0E+03	2.5E+04	4.2E+03	4.1E+00	RSAI7	--	0	--
	PeCDD (total)	pg/g	74	63	85	1.2E+00	2.4E+00	5.1E-01	7.6E+01	1.1E+03	2.4E+04	4.2E+03	3.9E+00	RSAI7	--	0	--
	HxCDD (total)	pg/g	74	68	92	1.2E+00	1.3E+00	1.4E-01	6.3E+01	1.2E+03	3.0E+04	5.0E+03	4.2E+00	RSAI7	--	0	--
	HpCDD (total)	pg/g	74	65	88	1.2E+00	1.4E+00	4.9E-01	9.1E+01	1.0E+03	2.6E+04	4.6E+03	4.3E+00	RSAI7	--	0	--
	2,3,7,8-Tetrachlorodibenzofuran	pg/g	454	417	92	2.0E-01	1.3E+01	6.3E-02	2.3E+01	3.3E+02	4.8E+04	2.4E+03	7.3E+00	RSAI7	--	0	--
	1,2,3,7,8-Pentachlorodibenzofuran	pg/g	454	411	91	2.8E-01	2.2E+01	6.8E-02	3.0E+01	4.2E+02	2.2E+04	1.6E+03	3.8E+00	RSAI7	--	0	--
	2,3,4,7,8-Pentachlorodibenzofuran	pg/g	454	389	86	1.5E-01	2.2E+01	4.3E-02	2.8E+01	2.4E+02	1.5E+04	1.0E+03	4.2E+00	RSAI7	--	0	--
	1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	454	433	95	2.1E-01	4.3E+01	4.5E-02	5.1E+01	9.7E+02	1.0E+05	5.6E+03	5.8E+00	RSAI7	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	454	427	94	1.7E-01	1.3E+03	2.8E-02	3.0E+01	6.6E+02	6.6E+04	3.9E+03	5.8E+00	RSAI7	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	454	388	85	6.0E-02	2.2E+03	4.2E-02	9.9E+00	1.4E+02	1.5E+04	9.7E+02	6.7E+00	RSAI7	--	0	--
	2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	454	401	88	8.5E-02	1.4E+03	4.0E-02	1.6E+01	2.5E+02	3.6E+04	2.0E+03	7.9E+00	RSAI7	--	0	--
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	454	446	98	1.3E+00	2.0E+01	9.0E-02	8.9E+01	2.2E+03	2.2E+05	1.2E+04	5.6E+00	RSAI7	--	0	--
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	454	423	93	3.7E-01	2.8E+01	1.0E-01	6.1E+01	1.3E+03	1.4E+05	8.8E+03	6.8E+00	RSAI7	--	0	--
	Octachlorodibenzofuran	pg/g	453	439	97	1.7E+00	3.5E+01	2.5E-01	2.7E+02	6.3E+03	7.3E+05	3.8E+04	6.1E+00	RSAI7	--	0	--
	TCDF (total)	pg/g	74	72	97	4.9E-01	4.9E-01	2.6E-01	4.2E+02	3.9E+03	4.8E+04	8.7E+03	2.2E+00	RSAI7	--	0	--
	PeCDF (total)	pg/g	74	73	99	1.3E+00	1.3E+00	9.1E-01	4.6E+02	3.2E+03	2.3E+04	5.2E+03	1.6E+00	RSAI7	--	0	--
	HpCDF (total)	pg/g	74	74	100	--	--	5.5E-01	5.2E+02	8.2E+03	2.0E+05	3.2E+04	3.9E+00	RSAI7	--	0	--
	HxCDF (total)	pg/g	74	73	99	1.3E+00	1.3E+00	9.5E-01	5.4E+02	9.2E+03	2.3E+05	3.8E+04	4.1E+00	RSAI7	--	0	--
	Dioxin TEQ (total)	**pg/g**	**572**	**539**	**94**	**--**	**--**	**4.8E-05**	**1.4E+01**	**3.5E+02**	**3.1E+04**	**1.9E+03**	**5.6E+00**	**RSAI7**	**2.7E+03**	**4**	**1.2E+01**
TPH and Fuel Alcohols	Oil Range Organics	µg/kg	169	4	2	1.3E+04	2.7E+05	4.2E+04	ND	8.9E+04	1.3E+05	3.7E+04	4.1E-01	ND	--	0	--
	Total petroleum hydrocarbon-diesel	µg/kg	170	4	2	1.7E+02	2.5E+04	7.2E+04	ND	2.5E+06	4.1E+06	1.8E+06	7.2E-01	ND	--	0	--
	Total petroleum hydrocarbon-gasoline	µg/kg	58	1	2	1.4E+01	6.0E+03	1.3E+02	ND	1.3E+02	1.3E+02	NA	NA	ND	--	0	--
Other	Phthalic acid	mg/kg	26	1	4	2.5E-01	2.5E-01	4.0E-01	4.0E-01	4.0E-01	4.0E-01	NA	NA	TSB-CJ-09	1.0E+05	0	4.0E-06
	Chloric acid	mg/kg	189	139	74	8.2E-02	2.9E+00	1.9E-03	1.3E+00	2.7E+02	2.1E+04	1.9E+03	7.1E+00	SA106	--	0	--

TABLE 5. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Detected Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Notes:

-- = No value
bgs = below ground surface
ft = feet
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram
pg/g = picogram per gram
ECA = Excavation control area
NA = Not applicable
ND = Nondetects
PAH = Polycyclic aromatic hydrocarbon
TPH = Total petroleum hydrocarbon
VOC = Volatile organic compound
SVOC = Semivolatile organic compound

[a] Summary statistics presented for all locations across the Site, excluding soil in ECAs.
[b] Chemicals that have maximum detections that exceed their respective BCLs are bolded and highlighted gray.
[c] Chemicals that have detection limits that exceed their respective BCLs are highlighted gray.
[d] The dioxin TEQ results have been calculated by various parties and nondetects may have been treated differently and sample quantitation limits were not reported. For the BHRA, the dioxin TEQs will be calculated using 1/2 the sample quantitation limit.
[e] The minimum and maximum non-detected values are represented by one half of the sample quantitation limit.

TABLE 6. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Perchlorate, Metals, Radionuclides, General Chemistry, and Inorganic Anions [a,b]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[c]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[d]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Perchlorate	**Perchlorate**	**mg/kg**	**61**	**59**	**97**	**2.7E-02**	**2.8E-02**	**1.4E-04**	**1.4E+00**	**1.9E+02**	**4.5E+03**	**6.6E+02**	**3.6E+00**	**SA72**	**8.0E+02**	**6**	**5.6E+00**
Metals	Aluminum	mg/kg	38	38	100	--	--	4.0E+03	8.5E+03	8.4E+03	1.1E+04	1.3E+03	1.5E-01	SA172 and SA61	1.0E+05	0	1.1E-01
	Antimony	mg/kg	38	20	53	1.0E+00	1.1E+00	1.2E-01	4.6E-01	3.4E+00	3.0E+01	8.4E+00	2.5E+00	SA130	4.5E+02	0	6.7E-02
	Arsenic	**mg/kg**	**89**	**89**	**100**	**--**	**--**	**1.3E+00**	**3.4E+00**	**2.3E+01**	**5.9E+02**	**8.2E+01**	**3.5E+00**	**EE-C23-1**	**7.2E+00**	**19**	**8.1E+01**
	Barium	mg/kg	38	38	100	--	--	1.3E+02	1.8E+02	4.2E+02	6.8E+03	1.1E+03	2.7E+00	SA56	1.0E+05	0	6.8E-02
	Beryllium	mg/kg	38	38	100	--	--	3.0E-01	4.8E-01	5.5E-01	2.2E+00	3.2E-01	5.9E-01	SA130	2.2E+03	0	9.7E-04
	Boron	mg/kg	38	20	53	2.1E+00	5.6E+00	2.8E+00	1.2E+01	1.7E+01	1.1E+02	2.4E+01	1.4E+00	RSAJ5	1.0E+05	0	1.1E-03
	Cadmium	mg/kg	38	32	84	5.0E-02	5.5E-02	6.0E-02	1.8E-01	2.7E-01	2.7E+00	4.7E-01	1.7E+00	SA130	1.1E+03	0	2.5E-03
	Calcium	mg/kg	38	37	97	2.8E+01	2.8E+01	1.2E+04	2.5E+04	2.5E+04	4.7E+04	7.6E+03	3.1E-01	SA183	--	0	--
	Chromium (total)	mg/kg	38	38	100	--	--	4.4E+00	8.2E+00	9.9E+00	3.7E+01	6.0E+00	6.1E-01	RSAJ7	--	0	--
	Chromium VI	mg/kg	42	11	26	5.5E-02	2.2E-01	1.2E-01	4.8E-01	5.9E-01	1.5E+00	4.4E-01	7.5E-01	RSAJ7	1.2E+03	0	1.2E-03
	Cobalt	mg/kg	40	40	100	--	--	1.7E+00	7.5E+00	9.5E+00	4.8E+01	9.2E+00	9.6E-01	SA160	3.4E+02	0	1.4E-01
	Copper	mg/kg	38	38	100	--	--	1.2E+01	1.9E+01	2.8E+01	1.7E+02	2.9E+01	1.0E+00	SA130	4.2E+04	0	4.1E-03
	Cyanide (total)	mg/kg	28	1	4	6.5E-02	5.5E-01	8.6E-01	8.6E-01	8.6E-01	8.6E-01	NA	NA	SA190	2.8E+01	0	3.1E-02
	Iron	mg/kg	38	38	100	--	--	1.1E+04	1.5E+04	1.5E+04	2.1E+04	2.4E+03	1.6E-01	SA172	1.0E+05	0	2.1E-01
	Lead	**mg/kg**	**44**	**44**	**100**	**--**	**--**	**6.0E+00**	**1.4E+01**	**1.2E+02**	**3.6E+03**	**5.5E+02**	**4.6E+00**	**EE-C23-1**	**8.0E+02**	**1**	**4.5E+00**
	Magnesium	**mg/kg**	**48**	**47**	**98**	**2.8E+01**	**2.8E+01**	**6.6E+03**	**9.7E+03**	**2.9E+04**	**1.9E+05**	**5.1E+04**	**1.7E+00**	**DS-DB-1**	**1.0E+05**	**5**	**1.9E+00**
	Manganese	**mg/kg**	**61**	**61**	**100**	**--**	**--**	**7.7E+01**	**4.8E+02**	**6.1E+03**	**7.7E+04**	**1.6E+04**	**2.6E+00**	**EE-C23-1**	**2.5E+04**	**5**	**3.1E+00**
	Mercury	mg/kg	38	31	82	8.0E-03	2.1E-02	7.0E-03	3.5E-02	4.3E-02	2.8E-01	5.3E-02	1.2E+00	SA172	1.8E+02	0	1.6E-03
	Molybdenum	mg/kg	38	37	97	2.8E-01	2.8E-01	3.0E-01	5.2E-01	3.4E+00	8.2E+01	1.4E+01	4.0E+00	SA56	5.7E+03	0	1.4E-02
	Nickel	mg/kg	38	38	100	--	--	1.1E+01	1.5E+01	1.5E+01	3.2E+01	3.6E+00	2.3E-01	SA160	2.2E+04	0	1.5E-03
	Phosphorus (total)	mg/kg	31	31	100	--	--	6.4E+02	8.7E+02	9.3E+02	2.5E+03	3.4E+02	3.7E-01	SA61	--	0	--
	Platinum	mg/kg	38	22	58	4.8E-02	1.1E-01	5.0E-03	1.3E-02	1.6E-02	5.7E-02	1.3E-02	8.2E-01	SA130	5.7E+02	0	1.9E-04
	Potassium	mg/kg	38	37	97	5.6E+00	5.6E+00	1.6E+03	2.4E+03	2.5E+03	3.8E+03	4.6E+02	1.9E-01	SA58	--	0	--
	Selenium	mg/kg	38	3	8	2.8E-01	2.0E+01	9.0E-01	1.0E+00	1.0E+00	1.1E+00	1.0E-01	1.0E-01	SA113	5.7E+03	0	3.5E-03
	Silver	mg/kg	38	12	32	2.5E-01	3.0E-01	2.8E-02	1.5E-01	1.0E+00	9.6E+00	2.7E+00	2.7E+00	SA130	5.7E+03	0	1.7E-03
	Sodium	mg/kg	38	37	97	1.1E+01	1.1E+01	2.0E+02	5.4E+02	6.9E+02	2.5E+03	4.9E+02	7.1E-01	SA127	--	0	--
	Strontium	mg/kg	38	36	95	2.8E-01	1.1E+02	8.4E+01	1.7E+02	2.0E+02	1.2E+03	1.9E+02	9.3E-01	SA56	1.0E+05	0	1.2E-02
	Thallium	mg/kg	38	36	95	1.1E-01	1.2E-01	6.3E-02	1.1E-01	2.0E+00	6.2E+01	1.0E+01	5.0E+00	SA56	7.5E+01	0	8.3E-01
	Tin	mg/kg	38	7	18	4.7E+00	5.5E+00	4.9E-01	6.8E-01	1.4E+00	6.4E+00	2.2E+00	1.5E+00	SA172	1.0E+05	0	6.4E-05
	Titanium	mg/kg	38	38	100	--	--	4.1E+02	7.6E+02	7.5E+02	1.2E+03	1.6E+02	2.2E-01	SA61	1.0E+05	0	1.2E-02
	Tungsten	mg/kg	38	35	92	5.0E-02	2.9E-01	1.5E-01	3.3E-01	3.8E+00	7.0E+01	1.4E+01	3.7E+00	SA130	8.5E+03	0	8.2E-03
	Vanadium	mg/kg	38	38	100	--	--	3.1E+01	4.3E+01	4.6E+01	1.1E+02	1.6E+01	3.4E-01	SA130	5.7E+03	0	2.0E-02
	Zinc	mg/kg	38	38	100	--	--	2.5E+01	3.6E+01	5.5E+01	5.1E+02	8.0E+01	1.5E+00	SA130	1.0E+05	0	5.1E-03
Radionuclides	Radium-226	pci/g	37	36	97	2.5E-01	2.5E-01	3.4E-01	8.6E-01	9.0E-01	1.6E+00	2.6E-01	2.9E-01	SA107	--	0	--
	Radium-228	pci/g	37	35	95	2.5E-01	2.5E-01	4.9E-01	1.2E+00	1.2E+00	2.3E+00	4.4E-01	3.6E-01	SA196	--	0	--
	Thorium	pci/g	37	37	100	--	--	7.4E-01	1.5E+00	1.5E+00	2.1E+00	3.8E-01	2.5E-01	SA20	--	0	--
	Thorium-234	pci/g	6	0	0	3.8E+00	4.7E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Thorium-228	pci/g	37	37	100	--	--	8.5E-01	1.7E+00	1.7E+00	2.3E+00	3.3E-01	2.0E-01	SA107	--	0	--
	Thorium-230	pci/g	37	37	100	--	--	6.5E-01	9.7E-01	1.1E+00	3.3E+00	4.8E-01	4.3E-01	SA130	--	0	--
	Uranium-234	pci/g	37	37	100	--	--	7.1E-01	9.7E-01	1.1E+00	2.9E+00	4.3E-01	3.9E-01	SA130	--	0	--
	Uranium-235	pci/g	37	25	68	2.0E-02	1.4E-01	3.2E-02	6.1E-02	7.0E-02	1.6E-01	3.3E-02	4.8E-01	SA130	--	0	--
	Uranium-238	pci/g	37	33	89	5.0E-01	8.2E-01	7.6E-01	9.1E-01	1.1E+00	2.8E+00	4.3E-01	4.0E-01	SA130	1.1E+03	0	2.5E-03
	U-Total (Rads)	µg/kg	38	37	97	5.5E+01	5.5E+01	5.9E+02	ND	1.2E+03	7.6E+03	1.2E+03	9.6E-01	ND	--	0	--
General Chemistry	Ammonia	mg/kg	36	4	11	2.6E-01	2.8E+00	5.9E-04	1.9E-03	3.4E-02	1.3E-01	6.6E-02	1.9E+00	SA72	1.0E+05	0	2.8E-05
	Organic Carbon (total)	mg/kg	37	37	100	--	--	5.2E-01	1.5E+00	2.8E+00	1.6E+01	3.4E+00	1.2E+00	RSAJ5	--	0	--
	Carbonate	mg/kg	31	24	77	1.1E+01	1.1E+02	3.0E-03	2.6E-02	5.2E-02	5.6E-01	1.1E-01	2.1E+00	RSAJ7	--	0	--
	Hydrogen carbonate	mg/kg	37	35	95	1.1E+02	1.1E+02	1.1E-01	3.3E-01	5.1E-01	1.9E+00	4.1E-01	8.1E-01	SA13	--	0	--
	Methylene Blue Active Substances	mg/kg	37	4	11	1.0E+00	1.2E+00	8.0E-04	2.4E-03	2.4E-03	4.2E-03	1.4E-03	5.8E-01	SA72	--	0	--
	Nitrate	mg/kg	37	32	86	2.4E-02	2.7E+00	3.3E-04	3.2E-03	1.4E-02	8.1E-02	2.2E-02	1.6E+00	SA72	1.0E+05	0	2.7E-05
	Nitrite	mg/kg	37	9	24	2.5E-02	2.8E+00	1.0E-04	3.1E-04	1.3E-03	5.7E-03	2.0E-03	1.6E+00	SA13	1.0E+05	0	2.8E-05
Inorganic Anions	Bromide	mg/kg	37	1	3	2.8E-01	5.5E+00	1.2E-03	1.2E-03	1.2E-03	1.2E-03	NA	NA	SA107	--	0	--
	Chloride	mg/kg	37	37	100	--	--	1.5E-03	3.0E-02	1.4E-01	1.9E+00	3.3E-01	2.3E+00	SA130	--	0	--
	Orthophosphate	mg/kg	6	1	17	5.5E-01	5.5E+00	3.2E-03	3.2E-03	3.2E-03	3.2E-03	NA	NA	SA13	--	0	--
	Sulfate	mg/kg	37	36	97	1.1E+01	1.1E+01	1.3E-02	1.8E-01	1.6E+00	3.2E+01	5.7E+00	3.5E+00	SA130	--	0	--

TABLE 6. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Perchlorate, Metals, Radionuclides, General Chemistry, and Inorganic Anions [a,b]
Nevada Environmental Response Trust Site, Henderson, Nevada

Notes:

-- = No value
bgs = below ground surface
ft = feet
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram
pci/g = picocuries per gram
ECA = Excavation control area
NA = Not applicable
ND = Nondetects

[a] Summary statistics presented for soil samples collected from 0 to 2 ft bgs in ECAs.
[b] Chemicals that have maximum detections that exceed their respective BCLs are bolded and highlighted gray.
[c] In the absence of soil data for white phosphorus, it is inappropriate to use the white phosphorus BCL for comparison to the total phosphorus results. Thus, there is no BCL for total phosphorus.
[d] The minimum and maximum non-detected values are represented by one half of the sample quantitation limit.

TABLE 7. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Detected Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
VOCs	Acetone	µg/kg	38	19	50	7.5E-01	1.1E+01	5.1E+00	ND	2.0E+01	5.4E+01	1.3E+01	6.5E-01	ND	1.0E+05	0	5.4E-04
	Benzene	µg/kg	38	1	3	1.4E-01	3.5E+00	8.2E-01	ND	8.2E-01	8.2E-01	NA	NA	ND	4.2E+00	0	8.2E-01
	2-Butanone	µg/kg	38	10	26	7.5E-01	7.0E+00	9.5E-01	ND	1.3E+00	2.6E+00	4.8E-01	3.6E-01	ND	3.4E+04	0	2.1E-04
	Chlorobenzene	µg/kg	38	1	3	1.5E-01	3.5E+00	5.5E+00	ND	5.5E+00	5.5E+00	NA	NA	ND	7.0E+02	0	7.9E-03
	Chloroform	**µg/kg**	**38**	**5**	**13**	**1.4E-01**	**3.5E+00**	**4.1E-01**	**ND**	**6.3E+00**	**2.2E+01**	**9.1E+00**	**1.4E+00**	**ND**	**1.6E+00**	**0**	**1.4E+01**
	1,2-Dichlorobenzene	µg/kg	38	1	3	3.4E-01	3.5E+00	5.6E-01	ND	5.6E-01	5.6E-01	NA	NA	ND	3.7E+02	0	9.2E-03
	1,4-Dichlorobenzene	**µg/kg**	**38**	**4**	**11**	**4.1E-01**	**3.5E+00**	**1.9E+00**	**ND**	**1.0E+01**	**1.7E+01**	**6.3E+00**	**6.3E-01**	**ND**	**1.4E+01**	**0**	**1.3E+00**
	4-Methyl-2-pentanone	µg/kg	38	1	3	4.8E-01	7.0E+00	1.6E+00	ND	1.6E+00	1.6E+00	NA	NA	ND	1.7E+04	0	4.1E-04
	Methylene Chloride	µg/kg	38	7	18	4.4E-01	3.5E+00	4.8E-01	ND	1.1E+00	1.7E+00	4.4E-01	4.2E-01	ND	5.9E+01	0	5.9E-02
	Toluene	µg/kg	38	7	18	3.2E-01	3.5E+00	2.8E-01	ND	9.8E-01	3.2E+00	1.0E+00	1.0E+00	ND	5.2E+02	0	6.6E-03
	1,2,4-Trichlorobenzene	µg/kg	38	2	5	1.6E+00	3.5E+00	1.1E+00	ND	1.3E+00	1.5E+00	2.8E-01	2.2E-01	ND	1.1E+02	0	3.1E-02
	1,2,4-Trimethylbenzene	µg/kg	38	1	3	2.7E-01	3.5E+00	5.9E-01	ND	5.9E-01	5.9E-01	NA	NA	ND	6.0E+02	0	5.7E-03
	m,p-xylene	µg/kg	32	1	3	4.3E-01	3.5E+00	2.6E+00	ND	2.6E+00	2.6E+00	NA	NA	ND	--	0	--
SVOCs	**bis(2-Ethylhexyl)phthalate**	**µg/kg**	**70**	**11**	**16**	**2.3E+01**	**1.9E+03**	**6.8E+01**	**ND**	**1.6E+02**	**6.5E+02**	**1.7E+02**	**1.1E+00**	**ND**	**1.4E+02**	**0**	**1.4E+01**
	Butylbenzylphthalate	**µg/kg**	**70**	**5**	**7**	**2.0E+01**	**1.9E+03**	**2.8E+00**	**ND**	**3.0E+03**	**1.5E+04**	**6.7E+03**	**2.2E+00**	**ND**	**2.4E+02**	**0**	**6.3E+01**
	Dimethylphthalate	µg/kg	70	2	3	1.2E+01	1.9E+03	3.9E+00	ND	1.3E+01	2.2E+01	1.3E+01	9.9E-01	ND	1.0E+05	0	1.9E-02
	Di-n-butylphthalate	µg/kg	70	6	9	1.4E+01	1.9E+03	4.1E+01	ND	6.3E+01	8.0E+01	1.8E+01	2.8E-01	ND	6.8E+04	0	2.8E-02
	Hexachlorobutadiene	µg/kg	38	2	5	1.6E+00	3.5E+00	1.1E+00	ND	1.7E+00	2.2E+00	7.8E-01	4.7E-01	ND	2.5E+01	0	1.4E-01
	1-Methylnaphthalene	µg/kg	7	5	71	2.9E-01	9.0E+00	1.1E+00	ND	1.7E+01	2.7E+01	1.1E+01	6.4E-01	ND	--	0	--
	2-Methylnaphthalene	µg/kg	80	6	8	2.8E-01	2.2E+02	1.3E+00	ND	2.3E+01	5.6E+01	2.1E+01	9.2E-01	ND	--	0	--
PAHs	Acenaphthene	µg/kg	80	1	1	2.8E-01	2.2E+02	5.4E+00	ND	5.4E+00	5.4E+00	NA	NA	ND	2.4E+03	0	9.1E-02
	Acenaphthylene	µg/kg	80	7	9	2.0E-01	2.2E+02	8.8E+00	ND	2.8E+01	5.2E+01	1.6E+01	5.6E-01	ND	1.5E+02	0	1.5E+00
	Anthracene	µg/kg	80	7	9	2.4E-01	2.2E+02	1.2E+01	ND	3.7E+01	8.0E+01	2.5E+01	6.9E-01	ND	9.1E+03	0	2.4E-02
	Benzo(a)anthracene	**µg/kg**	**80**	**29**	**36**	**3.5E+00**	**2.1E+02**	**7.9E-01**	**ND**	**1.6E+02**	**9.0E+02**	**2.6E+02**	**1.6E+00**	**ND**	**2.3E+00**	**0**	**3.8E+02**
	Benzo(a)pyrene	**µg/kg**	**80**	**18**	**23**	**2.4E-01**	**2.1E+02**	**1.5E+00**	**ND**	**2.5E+02**	**9.3E+02**	**3.1E+02**	**1.2E+00**	**ND**	**2.3E-01**	**7**	**4.0E+03**
	Benzo(a)pyrene TEQ	µg/kg	22	22	100	--	--	8.9E-01	ND	3.1E+02	1.4E+03	4.0E+02	1.3E+00	ND	--	0	--
	Benzo(b)fluoranthene	**µg/kg**	**80**	**29**	**36**	**3.5E+00**	**2.1E+02**	**1.3E+00**	**ND**	**3.2E+02**	**1.6E+03**	**5.1E+02**	**1.6E+00**	**ND**	**2.3E+00**	**0**	**6.8E+02**
	Benzo(g,h,i)perylene	µg/kg	80	23	29	6.0E-01	2.1E+02	4.2E+00	ND	2.0E+02	7.9E+02	2.7E+02	1.3E+00	ND	3.4E+04	0	2.3E-02
	Benzo(k)fluoranthene	**µg/kg**	**80**	**19**	**24**	**4.6E-01**	**2.1E+02**	**1.6E+00**	**ND**	**2.4E+02**	**1.4E+03**	**4.3E+02**	**1.8E+00**	**ND**	**2.3E+01**	**0**	**6.0E+01**
	Chrysene	**µg/kg**	**80**	**31**	**39**	**3.5E+00**	**2.1E+02**	**1.2E+00**	**ND**	**2.4E+02**	**1.4E+03**	**4.0E+02**	**1.7E+00**	**ND**	**2.3E+02**	**0**	**6.0E+00**
	Dibenz(a,h)anthracene	**µg/kg**	**79**	**8**	**10**	**7.0E-01**	**2.1E+02**	**4.6E+00**	**ND**	**8.1E+01**	**2.0E+02**	**7.0E+01**	**8.6E-01**	**ND**	**2.3E-01**	**0**	**8.8E+02**
	Fluoranthene	µg/kg	80	31	39	3.5E+00	2.1E+02	1.8E+00	ND	2.8E+02	1.7E+03	4.8E+02	1.7E+00	ND	2.4E+04	0	7.0E-02
	Hexachlorobenzene	**µg/kg**	**115**	**68**	**59**	**9.0E-01**	**2.3E+02**	**6.3E-01**	**ND**	**1.5E+04**	**3.0E+05**	**4.8E+04**	**3.3E+00**	**ND**	**1.2E+00**	**23**	**2.5E+05**
	Indeno(1,2,3-cd)pyrene	**µg/kg**	**80**	**21**	**26**	**2.9E-01**	**2.1E+02**	**1.2E+00**	**ND**	**2.0E+02**	**8.7E+02**	**2.8E+02**	**1.4E+00**	**ND**	**2.3E+00**	**0**	**3.7E+02**
	Naphthalene	**µg/kg**	**118**	**7**	**6**	**2.0E-01**	**2.1E+02**	**1.4E+00**	**ND**	**1.5E+01**	**4.9E+01**	**1.6E+01**	**1.1E+00**	**ND**	**1.6E+01**	**0**	**1.3E+01**
	Phenanthrene	**µg/kg**	**80**	**23**	**29**	**3.5E+00**	**2.4E+02**	**1.8E+00**	**ND**	**1.1E+02**	**6.0E+02**	**1.7E+02**	**1.6E+00**	**ND**	**2.5E+01**	**0**	**2.4E+01**
	Pyrene	µg/kg	80	37	46	3.5E+00	2.1E+02	1.7E+00	ND	2.3E+02	1.7E+03	4.3E+02	1.9E+00	ND	1.9E+04	0	8.8E-02
Organochlorine Pesticides	alpha-BHC	µg/kg	25	1	4	1.3E-01	9.0E+03	2.2E+00	ND	2.2E+00	2.2E+00	NA	NA	ND	2.7E+02	0	3.3E+01
	beta-BHC	**µg/kg**	**25**	**11**	**44**	**3.8E-01**	**9.0E+03**	**1.0E+00**	**ND**	**2.8E+02**	**1.3E+03**	**4.9E+02**	**1.7E+00**	**ND**	**5.4E+01**	**0**	**1.7E+02**
	gamma-Chlordane	µg/kg	25	2	8	1.4E-01	9.0E+03	7.5E+00	ND	1.9E+01	3.1E+01	1.7E+01	8.6E-01	ND	--	0	--
	4,4'-DDE	**µg/kg**	**25**	**3**	**12**	**1.4E-01**	**1.8E+04**	**2.2E+01**	**ND**	**7.9E+02**	**2.2E+03**	**1.2E+03**	**1.6E+00**	**ND**	**7.8E+00**	**1**	**2.2E+03**
	4,4'-DDT	**µg/kg**	**25**	**4**	**16**	**3.4E-01**	**1.8E+04**	**4.0E+00**	**ND**	**2.8E+02**	**9.9E+02**	**4.8E+02**	**1.7E+00**	**ND**	**7.8E+00**	**1**	**2.2E+03**
	Endrin ketone	µg/kg	25	1	4	2.8E-01	1.8E+04	3.2E+01	ND	3.2E+01	3.2E+01	NA	NA	ND	--	0	--
	Heptachlor	**µg/kg**	**25**	**1**	**4**	**1.1E-01**	**9.0E+03**	**9.3E+02**	**ND**	**9.3E+02**	**9.3E+02**	**NA**	**NA**	**ND**	**4.3E-01**	**2**	**2.1E+04**
	Methoxychlor	µg/kg	25	1	4	2.4E-01	9.0E+04	7.6E+00	ND	7.6E+00	7.6E+00	NA	NA	ND	3.4E+03	0	2.6E+01
	Octachlorostyrene	µg/kg	68	24	35	3.4E+00	2.1E+02	1.1E+01	ND	6.4E+02	9.3E+03	1.9E+03	2.9E+00	ND	--	0	--
Polychlorinated Biphenyls	**Aroclor-1260**	**µg/kg**	**14**	**2**	**14**	**1.7E+01**	**2.1E+01**	**5.1E+01**	**ND**	**1.6E+02**	**2.7E+02**	**1.5E+02**	**9.6E-01**	**ND**	**8.3E-01**	**0**	**3.3E+02**
Dioxins/Furans	**2,3,7,8-Tetrachlorodibenzo-p-dioxin**	**pg/g**	**98**	**74**	**76**	**0.0E+00**	**2.8E+02**	**8.3E-02**	**8.8E+00**	**1.4E+02**	**2.1E+03**	**3.7E+02**	**2.7E+00**	**SA127**	**1.0E+03**	**5**	**2.1E+00**
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	98	76	78	1.3E+00	6.5E+02	5.4E-02	3.7E+01	4.2E+02	6.4E+03	1.2E+03	2.8E+00	SA127	--	0	--
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	98	80	82	0.0E+00	1.4E+00	5.4E-02	2.2E+01	3.3E+02	5.3E+03	8.9E+02	2.7E+00	SA127	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	98	88	90	1.3E+00	1.4E+00	7.8E-02	3.1E+01	6.0E+02	1.0E+04	1.8E+03	3.0E+00	SA127	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	**pg/g**	**98**	**89**	**91**	**1.3E+00**	**1.4E+00**	**8.6E-02**	**1.9E+01**	**5.4E+02**	**9.6E+03**	**1.6E+03**	**3.0E+00**	**SA127**	**3.1E+02**	**17**	**3.1E+01**
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	98	92	94	1.3E+00	1.4E+00	9.9E-02	8.0E+01	2.0E+03	3.6E+04	6.1E+03	3.0E+00	SA127	--	0	--
	Octachlorodibenzo-p-dioxin	pg/g	98	89	91	2.5E+00	2.8E+00	3.6E-01	1.4E+02	2.3E+03	3.8E+04	6.4E+03	2.8E+00	SA127	--	0	--
	TCDD (total)	pg/g	18	17	94	5.2E-01	5.2E-01	5.5E-01	6.2E+01	3.7E+03	4.7E+04	1.1E+04	3.0E+00	RSAJ7	--	0	--
	PeCDD (total)	pg/g	18	17	94	1.3E+00	1.3E+00	2.0E-01	9.1E+01	3.4E+03	4.2E+04	1.0E+04	3.0E+00	RSAJ7	--	0	--
	HxCDD (total)	pg/g	18	16	89	1.3E+00	1.4E+00	1.9E+00	1.8E+02	3.2E+03	3.5E+04	8.8E+03	2.7E+00	RSAJ7	--	0	--
	HpCDD (total)	pg/g	18	16	89	1.3E+00	1.4E+00	4.9E+00	2.6E+02	2.3E+03	2.5E+04	6.2E+03	2.8E+00	RSAJ7	--	0	--
	2,3,7,8-Tetrachlorodibenzofuran	pg/g	98	92	94	2.7E-01	5.5E-01	8.0E-02	2.5E+02	3.3E+03	4.7E+04	8.9E+03	2.7E+00	SA127	--	0	--

TABLE 7. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Detected Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzofuran	pg/g	98	91	93	1.3E+00	1.4E+00	8.9E-02	2.9E+02	5.8E+03	9.2E+04	1.7E+04	3.0E+00	SA127	--	0	--
	2,3,4,7,8-Pentachlorodibenzofuran	pg/g	98	90	92	1.3E+00	1.4E+00	3.9E-02	1.3E+02	3.0E+03	4.9E+04	9.1E+03	3.0E+00	SA127	--	0	--
	1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	98	95	97	1.4E+00	1.4E+00	1.4E-01	3.0E+02	1.0E+04	1.5E+05	3.0E+04	2.9E+00	SA127	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	98	94	96	1.4E+00	1.4E+00	8.1E-02	1.7E+02	7.5E+03	1.2E+05	2.3E+04	3.0E+00	RSAJ7	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	98	90	92	1.3E+00	1.4E+00	6.6E-02	5.3E+01	1.4E+03	2.8E+04	4.7E+03	3.3E+00	SA127	--	0	--
	2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	98	90	92	1.3E+00	1.4E+00	9.0E-02	1.1E+02	1.9E+03	2.9E+04	5.5E+03	2.9E+00	SA127	--	0	--
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	98	96	98	1.4E+00	1.4E+00	2.7E-01	6.2E+02	2.7E+04	5.0E+05	8.9E+04	3.2E+00	SA127	--	0	--
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	98	93	95	1.3E+00	1.4E+00	1.3E-01	4.0E+02	1.2E+04	2.1E+05	3.8E+04	3.1E+00	SA127	--	0	--
	Octachlorodibenzofuran	pg/g	98	97	99	--	--	6.7E-01	1.9E+03	8.2E+04	1.4E+06	2.6E+05	3.2E+00	RSAJ7 and SA127	--	0	--
	TCDF (total)	pg/g	18	18	100	--	--	7.4E-01	1.6E+03	3.7E+04	4.8E+05	1.1E+05	3.0E+00	RSAJ7	--	0	--
	PeCDF (total)	pg/g	18	18	100	--	--	1.0E+00	1.4E+03	3.8E+04	5.4E+05	1.3E+05	3.4E+00	RSAJ7	--	0	--
	HpCDF (total)	pg/g	18	18	100	--	--	1.9E+00	1.3E+03	3.3E+04	4.7E+05	1.1E+05	3.3E+00	RSAJ7	--	0	--
	HxCDF (total)	pg/g	18	18	100	--	--	2.9E+00	1.4E+03	4.4E+04	6.2E+05	1.5E+05	3.3E+00	RSAJ7	--	0	--
	Dioxin TEQ (total)	**pg/g**	**117**	**115**	**98**	**--**	**--**	**6.7E-05**	**9.3E+01**	**3.7E+03**	**7.3E+04**	**1.2E+04**	**3.3E+00**	**SA127**	**2.7E+03**	**17**	**2.7E+01**
TPH and Fuel Alcohols	Oil Range Organics	µg/kg	23	7	30	1.4E+04	2.2E+04	3.5E+04	ND	8.1E+04	1.7E+05	5.1E+04	6.2E-01	ND	--	0	--
	Total petroleum hydrocarbon-diesel	µg/kg	23	4	17	1.4E+04	2.2E+04	5.3E+04	ND	1.1E+05	1.5E+05	4.5E+04	4.2E-01	ND	--	0	--
Other	Chloric acid	mg/kg	37	23	62	1.1E-01	6.0E-01	1.8E-02	1.7E+00	2.8E+00	9.7E+00	2.9E+00	1.0E+00	RSAJ5	--	0	--

Notes:
-- = No value
bgs = below ground surface
ft = feet
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram
pg/g = picogram per gram
ECA = Excavation control area
NA = Not applicable
ND = Nondetects
PAH = Polycyclic aromatic hydrocarbon
TPH = Total petroleum hydrocarbon
VOC = Volatile organic compound
SVOC = Semivolatile organic compound

[a] Summary statistics presented for soil samples collected from 0 to 2 ft bgs in ECAs.
[b] Chemicals that have maximum detections that exceed their respective BCLs are bolded and highlighted gray.
[c] Chemicals that have detection limits that exceed their respective BCLs are highlighted gray.
[d] The dioxin TEQ results have been calculated by various parties and nondetects may have been treated differently and sample quantitation limits were not reported. For the BHRA, the dioxin TEQs will be calculated using 1/2 the sample quantitation limit.
[e] The minimum and maximum non-detected values are represented by one half of the sample quantitation limit.

TABLE 8. Soil Gas Summary Statistics – 2008 Data[a]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Name	No. of Samples	No. of Detects	% Detects	Nondetects (µg/m^3)[b]		Detects (µg/m^3)						
				Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect
Acetone	93	47	51%	3.9	1,650	4.0	18	29	330	48	1.7	SG51
Acrylonitrile	93	8	9%	0.37	165	0.11	0.21	0.21	0.34	0.089	0.42	SG79
Allyl chloride	93	3	3%	0.075	33	0.31	1.0	2.3	5.5	2.8	1.2	SG40
Benzene	93	80	86%	1.7	33	1.1	3.5	14	160	32	2.2	SG51
Benzyl chloride	93	5	5%	0.075	33	0.14	0.17	0.20	0.29	0.059	0.30	SG27, SG33, and SG74
Bromodichloromethane	93	63	68%	0.075	33	0.14	1.5	11	200	31	2.9	SG89
Bromoform	93	13	14%	0.38	165	0.14	0.35	17	140	39	2.4	SG89
Bromomethane	93	18	19%	0.075	33	0.080	0.24	0.39	1.8	0.43	1.1	SG79
2-Butanone (MEK)	93	72	77%	0.40	165	2.0	6.1	9.7	62	9.4	1.0	SG84
N-Butylbenzene	93	48	52%	0.15	65	0.17	0.42	0.61	3.0	0.58	0.9	SG41
sec-Butylbenzene	93	15	16%	0.37	165	0.098	0.23	0.35	0.93	0.30	0.8	SG41
tert-Butylbenzene	93	4	4%	0.15	65	0.35	0.46	0.57	1.0	0.30	0.53	SG67
Carbon Disulfide	93	65	70%	0.40	165	0.65	4.0	13	270	36	2.6	SG60
Carbon Tetrachloride	93	87	94%	3.6	17	0.11	9.4	1093	18000	3631	3.3	SG29
Chlorobenzene	93	40	43%	0.075	33	0.093	1.1	31	340	82	2.7	SG83
Chloroethane	93	39	42%	0.075	33	0.094	0.41	17	100	34	2.0	SG53
Chloroform	93	93	100%	--	--	0.74	1700	17662	160,000	35307	2.0	SG32
Chloromethane	93	21	23%	0.075	33	0.084	0.23	1.9	27	5.9	3.1	SG51
1,2-Dibromo-3-chloropropane	93	0	0%	0.37	165	ND	ND	ND	ND	ND	NA	NA
Dibromochloromethane	93	20	22%	0.075	33	0.12	1.2	13	160	36	2.7	SG89
1,2-Dibromoethane (EDB)	93	0	0%	0.075	33	ND	ND	ND	ND	ND	NA	NA
1,2-Dichlorobenzene	93	27	29%	0.075	33	0.11	0.94	5.4	52	11	2.0	SG95
1,3-Dichlorobenzene	93	27	29%	0.075	33	0.12	1.0	6.0	82	16	2.7	SG95
1,4-Dichlorobenzene	93	76	82%	0.31	33	0.97	12	23	130	27	1.2	SG21
Dichlorodifluoromethane	93	70	75%	8.5	165	1.9	2.1	2.8	51	5.8	2.1	SG60
1,1-Dichloroethane	93	46	49%	0.075	33	0.081	0.97	31	290	57	1.8	SG66
1,2-Dichloroethane	93	22	24%	0.075	33	0.080	3.3	6.0	31	7.4	1.2	SG57
1,1-Dichloroethene	93	51	55%	0.075	33	0.074	3.2	22	510	73	3.3	SG46
cis-1,2-Dichloroethene	93	10	11%	0.075	33	0.084	0.17	0.32	1.3	0.37	1.2	SG24 and SG26
trans-1,2-Dichloroethene	93	4	4%	0.075	33	0.085	0.11	0.18	0.43	0.17	0.91	SG92
1,2-Dichloropropane	93	26	28%	0.075	33	0.084	0.34	0.66	2.6	0.71	1.1	SG51
cis-1,3-Dichloropropene	93	0	0%	0.37	165	ND	ND	ND	ND	ND	NA	NA
trans-1,3-Dichloropropene	93	0	0%	0.37	165	ND	ND	ND	ND	ND	NA	NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	93	28	30%	0.41	165	0.075	0.093	0.10	0.14	0.014	0.15	SG46 and SG53
Diisopropyl ether (DIPE)	93	0	0%	0.37	165	ND	ND	ND	ND	ND	NA	NA
1,4-Dioxane	93	25	27%	0.37	165	0.14	0.31	0.69	4.2	0.93	1.3	SG67
Ethanol	93	69	74%	4.0	1,650	1.4	5.3	12	180	23	2.0	SG60
Ethyl tert-butyl ether (ETBE)	93	0	0%	0.37	165	ND	ND	ND	ND	ND	NA	NA
Ethylbenzene	93	60	65%	0.41	165	0.12	1.5	7.8	90	19	2.5	SG41
4-Ethyltoluene	93	51	55%	0.41	165	0.097	0.64	2.1	21	4.4	2.1	SG77
Heptane	93	39	42%	0.40	165	0.11	0.53	3.5	39	7.7	2.2	SG77
Hexachlorobutadiene	93	43	46%	0.075	33	0.15	4.8	40	460	91	2.3	SG35
2-Hexanone	93	55	59%	0.42	165	0.17	0.61	0.82	3.9	0.63	0.8	SG41
Isopropylbenzene	93	29	31%	0.37	165	0.090	0.25	0.55	3.8	0.92	1.7	SG41 and SG55

TABLE 8. Soil Gas Summary Statistics – 2008 Data[a]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Name	No. of Samples	No. of Detects	% Detects	Nondetects (µg/m^3)[b]		Detects (µg/m^3)						
				Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect
4-Isopropyltoluene	93	45	48%	0.75	165	0.13	0.45	1.1	6.9	1.7	1.5	SG41
Methylene chloride	93	71	76%	0.40	165	0.089	1.0	12	360	45	3.7	SG60
Methyl methacrylate	93	2	2%	0.37	165	0.18	0.27	0.27	0.36	0.13	0.47	SG41
4-Methyl-2-pentanone	93	53	57%	0.43	165	0.17	0.63	1.8	14	2.8	1.6	SG41
Methyl-t-butyl ether (MTBE)	93	11	12%	0.075	33	0.099	0.19	0.28	1.0	0.26	0.94	SG76
alpha-Methylstyrene	93	15	16%	0.38	165	0.11	0.21	0.30	0.74	0.20	0.69	SG48
Naphthalene	93	62	67%	0.17	65	0.21	1.8	4.1	73	9.9	2.4	SG60
n-Octane	93	46	49%	0.40	165	0.11	0.99	37	1000	149	4.0	SG77
N-Propylbenzene	93	44	47%	0.41	165	0.11	0.46	1.3	14	2.8	2.1	SG77
Styrene	93	29	31%	0.37	165	0.13	0.26	0.58	4.7	0.92	1.6	SG30 and SG48
tert-Amyl methyl ether (TAME)	93	1	1%	0.37	165	0.10	0.10	0.10	0.10	NA	NA	SG46 and SG64
t-Butyl alcohol (TBA)	93	56	60%	2.5	165	0.20	0.61	1.3	17	2.5	1.9	SG66
1,1,2,2-Tetrachloroethane	93	1	1%	0.075	33	0.18	0.18	0.18	0.18	NA	NA	SG46 and SG53
Tetrachloroethene	93	93	100%	--	--	0.50	39	110	2,300	262	2.4	SG35
Toluene	93	84	90%	20	165	0.42	8.6	24	430	58	2.4	SG77
1,2,4-Trichlorobenzene	93	26	28%	0.075	33	0.12	3.2	15	240	47	3.2	SG95
1,1,1-Trichloroethane	93	22	24%	0.075	33	0.083	0.49	3.0	14	4.6	1.5	SG35 and SG66
1,1,2-Trichloroethane	93	11	12%	0.075	33	0.13	0.55	2.2	5.6	2.5	1.1	SG53
Trichloroethene	93	82	88%	0.080	33	0.11	5.1	66	1,700	216	3.3	SG47
Trichlorofluoromethane	93	80	86%	1.3	17	0.96	1.3	143	1700	400	2.8	SG61
1,1,2-Trichlorotrifluoroethane	93	55	59%	0.49	33	0.40	0.5	0.53	1.9	0.19	0.37	SG47 and SG56
1,2,4-Trimethylbenzene	93	60	65%	1.6	165	0.13	1.8	4.4	42	8.4	1.9	SG77
1,3,5-Trimethylbenzene	93	49	53%	0.41	165	0.13	0.76	2.4	22	4.6	1.9	SG77
Vinyl Acetate	93	56	60%	3.7	1,650	0.73	3.5	5.3	29	5.2	1.0	SG72 and SG83
Vinyl Chloride	93	11	12%	0.075	33	0.11	0.50	0.73	2.0	0.68	0.92	SG35 and SG51
m,p-Xylene	93	72	77%	2.7	165	0.25	5.1	31	420	76	2.5	SG41
o-Xylene	93	75	81%	5.5	165	0.16	2.5	10	120	23	2.3	SG41

Notes:
-- = No value
NA = Not applicable
ND = Nondetects
µg/m^3 = microgram per cubic meter

[a] Summary statistics presented for all locations within the Facility Area.

[b] The minimum and maximum non-detected values are represented by one half of the sample quantitation limit.

TABLE 9. Exposure Parameters

Nevada Environmental Response Trust Site, Henderson, Nevada

Exposure Parameters	Units	Symbol	Indoor Commercial/ Industrial Worker		Outdoor Commercial/ Industrial Worker		Construction Worker	
			Value	Source	Value	Source	Value	Source
Exposure Frequency	days/year	EF	250	USEPA 2002b	225	USEPA 2002b	250	USEPA 2002b
Exposure Time	hours/24 hours	ET	8	USEPA 2002b	8	USEPA 2002b	8	USEPA 2002b
Exposure Duration	years	ED	25	USEPA 2002b	25	USEPA 2002b	1	(1)
Averaging Time for Carcinogens	days	AT_c	25,550	USEPA 2002b	25,550	USEPA 2002b	25,550	USEPA 2002b
Averaging Time for Carcinogens (inhalation)	hours	AT_c	613,200	--	613,200	--	613,200	--
Averaging Time for Noncarcinogens	days	AT_{nc}	9,125	USEPA 2002b	9,125	USEPA 2002b	250	Based on ED
Averaging Time for Noncarcinogens (inhalation)	hours	AT_{nc}	219,000	--	219,000	--	8,760	--
Dermal absorption fraction	site-specific	ABS	--	--	chemical-specific	USEPA 2004b	chemical-specific	USEPA 2004b
Dermal adherence factor	mg/cm^2	AF	--	--	0.2	USEPA 2002b	0.3	USEPA 2002b
Relative bioavailability	site-specific	BIO	chemical-specific	--	chemical-specific	--	chemical-specific	--
Adult body weight	kg	BW	70	USEPA 2002b	70	USEPA 2002b	70	USEPA 2002b
Dilution factor for outdoor to indoor air	unitless	DF	0.4	BRC 2009	--	BRC 2009	--	--
Exposed surface area	cm^2/day	SA	--	--	3,300	USEPA 2002b	3,300	USEPA 2002b
Soil ingestion rate	mg/day	IR	50	USEPA 2002b	100	USEPA 2002b	330	USEPA 2002b
Conversion factor	µg/mg	CF1	1,000	--	1,000	--	1,000	--
Conversion factor	g/kg	CF2	1,000	--	1,000	--	1,000	--
Conversion factor	cm^3/m^3	CF3	1,000,000	--	1,000,000	--	1,000,000	--
Conversion factor	kg/mg	CF4	1.E-06	--	1.E-06	--	1.E-06	--
Radionuclide-Specific Factors								
Conversion factor	g/kg	CF_2	1,000	--	1,000	--	1,000	--
Conversion factor	g/mg	CF_5	0.001	--	0.001	--	0.001	--
Conversion factor	days/year	CF_{DY}	365	--	365	--	365	--
Conversion factor	hours/day	CF_{HD}	24	--	24	--	24	--
Inhalation rate	m^3/hour	InhR	0.833	USEPA 2002b	0.833	USEPA 2002b	0.833	USEPA 2002b
Area correction factor	site-specific	ACF	site-specific	(2)	site-specific	(2)	site-specific	(2)
Gamma shielding factor	unitless	GSF	0.4	USEPA 2000, 2007	--	--	0.4	USEPA 2000, 2007

Notes:

-- = Not applicable
BRC = Basic Remediation Company
USEPA = United States Environmental Protection Agency
g = grams
kg = kilograms
mg = milligrams
µg = micrograms
cm^2 = square centimeters
cm^3 = cubic centimeters
m^3 = cubic meters

(1) Based on Site data. A one-year exposure duration is appropriate for carcinogenic effects, because the methodology averages exposures over a lifetime (see USEPA 2002b).
(2) A value of 1.0 applies to sites of 1 hectare size or larger. ACF values for smaller sites are available from Table 5-1 of the Technical Background Document of USEPA 2000.

TABLE 9. Exposure Parameters

Nevada Environmental Response Trust Site, Henderson, Nevada

References:

BRC, 2009. 2008 Deep Soil Background Report BMI Common Areas (Eastside).October.

USEPA, 2000. Soil Screening Guidance for Radionuclides: User's Guide. OSWER Directive 9355.4-16A. October.

USEPA, 2002b. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. December.

USEPA, 2004b. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Office of Emergency and Remedial Response, Washington, DC. EPA/540/R/99/005. July.

USEPA, 2007. Preliminary Remediation Goals for Radionuclides. USEPA on-line database: http://epa-prgs.ornl.gov/radionuclides/.

TABLE 10. Fate and Transport Modeling Parameters

Nevada Environmental Response Trust Site, Henderson, Nevada

Parameter	Notations	Value	Units	Reference/Rationale
Outdoor Air Parameters				
Particulate emission factor[a]	PEF	1.94 E+9	m^3/kg	USEPA 2002b
Off-site particulate emission factor	PEF_{off}	4.40 E+8	m^3/kg	USEPA 2002b
Dispersion factor for volatiles emitted from soil[b]	Q/C_{vol}	32.2	g/m^2-s per kg/m^3	Site-specific. USEPA 2002b
Construction Dust Parameters				
Fraction of vegetative cover	V	0	--	USEPA 2002b
Mean annual wind speed	U_m	4.1	m/s	(1)
Equivalent threshold value of wind speed	U_t	11.32	m/s	USEPA 2002b
Function dependent on U/U_t	F(x)	0.194	--	USEPA 2002b
Wet soil bulk density	r_{soil}	1.9	Mg/m^3	Site-specific (2)
Percent moisture in soil	M	9.1	%	Site-specific (2)
Depth of site excavation	d_{excav}	--	m	Site-specific
Areal extent of site excavation	A_{excav}	--	m^2	(3)
Number of times soil is dumped	N_A	2.0	--	USEPA 2002b
Percent weight of silt in soil	s	13.9	%	Site-specific (2)
Mean dozing speed	S_{doz}	11.4	km/hr	USEPA 2002b
Areal extent of site tilling	A_{till}	--	acre	(3)
Number of times soil is tilled	N_A	2.0	--	USEPA 2002b
Average grading speed	S_{grade}	--	km/hr	Site-specific
Subchronic dispersion factor for area source-Constant A	A	2.454	--	USEPA 2002b
Subchronic dispersion factor for area source-Constant B	B	17.566	--	USEPA 2002b
Subchronic dispersion factor for area source-Constant C	C	189.043	--	USEPA 2002b
Number of vehicles for duration of construction	N_V	--	vehicles	Site-specific
Width of road segment	W_R	6.1	m	USEPA 2002b
Length of road traveled per day	L_D	--	m/day	Site-specific
Length of road segment	L_R	--	m	Site-specific
Mean vehicle weight	W	8.0	tonnes	USEPA 2002b
Number of days/year ³ 0.01 inches	p	27.0	days	(4)
Subchronic dispersion factor for road segment-Constant A	A	12.935	--	USEPA 2002b
Subchronic dispersion factor for road segment-Constant B	B	5.738	--	USEPA 2002b
Subchronic dispersion factor for road segment-Constant C	C	71.771	--	USEPA 2002b
Areal extent of site surface contamination	A_{surf}	--	acres	Site-specific
Vadose Zone Parameters				
Soil gas sampling depth	L_s	5 or 15	ft	Site-specific. During the Phase B soil gas investigation, samples were collected at 5 ft bgs, with the exception of 4 samples collected in the vicinity of Unit 3, Unit 5, and Unit 6 at 20 ft bgs (SG-36, SG 37, SG-38, and SG-41) (Northgate 2010 and Exponent 2010b). If needed to address data gaps, future soil gas samples will be collected at 5 and 15 ft bgs.
Groundwater depth	L_G	30	ft	Site-specific
Average soil temperature	T_s	17	Celsius	Site-specific (Figure 8, USEPA 2004a, p. 48). The average groundwater temperature in the Henderson, Nevada area.

TABLE 10. Fate and Transport Modeling Parameters

Nevada Environmental Response Trust Site, Henderson, Nevada

Parameter	Notations	Value	Units	Reference/Rationale
USDA soil type in layer A	SCS	Loamy Sand	--	Based on laboratory-measured grain size distributions of 15 samples collected across the Site in 2009. The normalized weight percent of sand, silt, and clay was plotted on the U.S. Soil Conservation Service Classification Chart provided in the J&E Model User's Guide (USEPA 2004a).
Thickness of soil layer (soil gas)	h_A	5 or 15	ft	Site-specific. See soil gas sampling depth above.
Thickness of soil layer (groundwater)	h_A	30	ft	Site-specific. See groundwater depth above.
Dry bulk density	ρ_b^A	1.703	g/cm^3	Site-specific. The arithmetic mean of 15 soil samples collected across the Site in 2009 and an additional sample collected in 2008.
Grain density	ρ_s^A	2.686	g/cm^3	Site-specific. The arithmetic mean of 15 soil samples collected across the Site in 2009 and an additional sample collected in 2008.
Total porosity	n^A	0.366	unitless	Site-specific. The arithmetic mean of 15 soil samples collected across the Site in 2009.
Water-filled porosity	θw	0.154	unitless	Site-specific. The arithmetic mean of 15 soil samples collected across the Site in 2009 and an additional sample collected in 2008.
USDA soil type above water table (Alluvium)	SCS	Loamy Sand	--	Based on laboratory-measured grain size distributions of 15 samples collected across the Site in 2009. The normalized weight percent of sand, silt, and clay was plotted on the U.S. Soil Conservation Service Classification Chart provided in the J&E Model User's Guide (USEPA 2004a).
Capillary fringe thickness	L_{cz}	18.75	cm	Default value for loamy sand (USEPA 2004a)
Capillary fringe total porosity	n_{cz}	0.366	unitless	Site-specific. The arithmetic mean of 15 soil samples collected across the Site in 2009.
Capillary fringe water-filled porosity	$\Theta_{w,cz}$	0.303	unitless	Default value for loamy sand (USEPA 2004a)
***Surface Barrier Parameters* - Indoor Air Scenarios**				
Thickness of foundation	L_{crack}	10	cm	Model default (USEPA 2004a)
Depth below grade to bottom of floor	L_F	15	cm	Model default, slab on grade (USEPA 2004a)
Foundation crack ratio	η	0.005	unitless	Model default (Cal/EPA 2011)
Average vapor flow rate into building	Q_{soil}	5	L/min	Model default (USEPA 2004a)
***Air Dispersion Parameters* - Indoor Scenarios**				
Air exchange rate	AER	1	1/hr	Cal/EPA (2011). Recommended value for general offices within commercial buildings.
Length of building	L_B	1000	cm	Model default (USEPA 2004a)
Width of building	W_B	1000	cm	Model default (USEPA 2004a)
Enclosed space height	H_B	300	cm	Conservative assumption.

Notes:

bgs = below ground surface
Cal/EPA = California Environmental Protection Agency
J&E = Johnson & Ettinger
U.S. = United States
USDA = United States Department of Agriculture
USEPA = United States Environmental Protection Agency
WRCC = Western Regional Climate Center

cm = centimeter
ft = feet
g = gram
hr = hour
L = liter
m = meter
min = minute
s = second

TABLE 10. Fate and Transport Modeling Parameters

Nevada Environmental Response Trust Site, Henderson, Nevada

[a] For non-construction worker exposures only. Construction worker dust exposures calculated from USEPA (2002).

[b] The following equation was used to calculate Q/C_{vol} using the constants for the Las Vegas, NV meterological station in Appendix D (USEPA 2002) and the area of the Facility Area of 265 acres.

$$Q/C_{vol} = A \times exp\left[\frac{(\ln A_{site} - B)^2}{C}\right]$$

A = 13.3093
B = 19.8387
C = 230.1652
A_{site} = Area of Facilty Area in acres (265 acres)

Rationale:

(1) Derivied from WRCC (2010).
(2) Data provided in Appendix A.
(3) Assumed value of one fifth of the site based upon USEPA (2002).
(4) Based on long-term weather data for the area of interest (NDEP asbestos calculation worksheet, On-line. http://www.ndep.nv.gov/bmi/technical.htm#asbestos).

References:

Cal/EPA, 2011. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). Final. Department of Toxics Substances Control. October.

Northgate and Exponent, 2010b. Site-Wide Soil Gas Human Health Risk Assessment, Tronox LLC, Henderson, Nevada. November 22.

USEPA, 2002b. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response. December.

USEPA, 2004a. User's Guide for Evaluating Subsurface Vapor Intrusion Into Buildings. Office of Emergency and Remedial Response. February 22.

WRCC, 2010. Average wind speeds for Las Vegas, Nevada. Desert Research Institute. http://www.wrcc.dri.edu/htmlfiles/westwind.final.html#NEVADA.

TABLE 11. Soil Properties Data
Nevada Environmental Response Trust Site, Henderson, Nevada

Sample ID	Depth (ft)	Volumetric Water Content[b]	Dry Bulk Density[c] (g/cm^3)	Grain Density[d] (g/cm^3)	Soil Total Porosity[e] (g/cm^3)	Percent Moisture[b] (g water/g soil)	Wet Bulk Density (g/cm^3)	Weight % Silt[f]	Soil Type
SA56-10BSPLP	10	0.134	1.689	2.719	0.379	7.9	1.8	13.6	Loamy Sand
RSAM3-10BSPLP	10	0.145	1.593	2.674	0.404	9.1	1.7	14.1	Loamy Sand
SA166-10BSPLP	10	0.100	1.721	2.681	0.358	5.8	1.8	15.7	Loamy Sand
SA182-10BSPLP	10	0.182	1.740	2.601	0.331	10.4	1.9	23.1	Sandy Loam
RSAJ3-10BSPLP	10	0.154	1.770	2.682	0.340	8.7	1.9	16.7	Loamy Sand
RSAI7-10B	10	0.138	1.661	2.682	0.381	8.3	1.8	--	Sand
SA34-10BSPLP	10	0.169	1.738	2.696	0.355	9.7	1.9	15.9	Loamy Sand
SA52-15BSPLP	15	0.239	1.405	2.710	0.481	17.0	1.6	12.0	Sand
RSAQ8-10BSPLP	10	0.148	1.697	2.695	0.370	8.7	1.8	11.7	Sand
RSAN8-10BSPLP	10	0.189	1.679	2.683	0.374	11.3	1.9	16.4	Loamy Sand
RSAQ4-10BSPLP	10	0.141	1.841	2.705	0.319	7.7	2.0	9.0	Sand
SA148-10BSPLP	10	0.119	1.762	2.732	0.355	6.7	1.9	11.9	Sand
SA30-9BSPLP	9	0.160	1.805	2.711	0.334	8.9	2.0	9.8	Sand
SA128-10BSPLP	10	0.156	1.654	2.654	0.377	9.4	1.8	14.4	Loamy Sand
SA102-10BSPLP	10	0.135	1.769	2.696	0.344	7.7	1.9	12.7	Sand
SA64-10BSPLP	10	0.148	1.717	2.651	0.352	8.6	1.9	11.4	Sand
Mean	10.25	0.154	1.703	2.686	0.366	9.1	1.9	13.9	Loamy Sand
Mininum	9	0.100	1.405	2.601	0.319	5.8	1.6	9.0	NA
Maximum	15	0.239	1.841	2.732	0.481	17.0	2.0	23.1	NA
Median	10	0.148	1.719	2.689	0.357	8.7	1.9	13.6	NA

Notes:
-- = no value
g/cm^3 = grams per cubic centimeter

[a] The soil properties were reported in Northgate (2010 and Exponent 2010b).
[b] As measured according to ASTM D 2216.
[c] As measured according to ASTM D 2937.
[d] As measured according to ASTM D 854.
[e] Calculated from dry bulk density and grain density.
[f] As measured according to ASTM D 422.

Reference:
Northgate and Exponent (2010b). Site-Wide Soil Gas Human Health Risk Assessment, Tronox LLC, Henderson, Nevada. November 22.

Figures

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Feet

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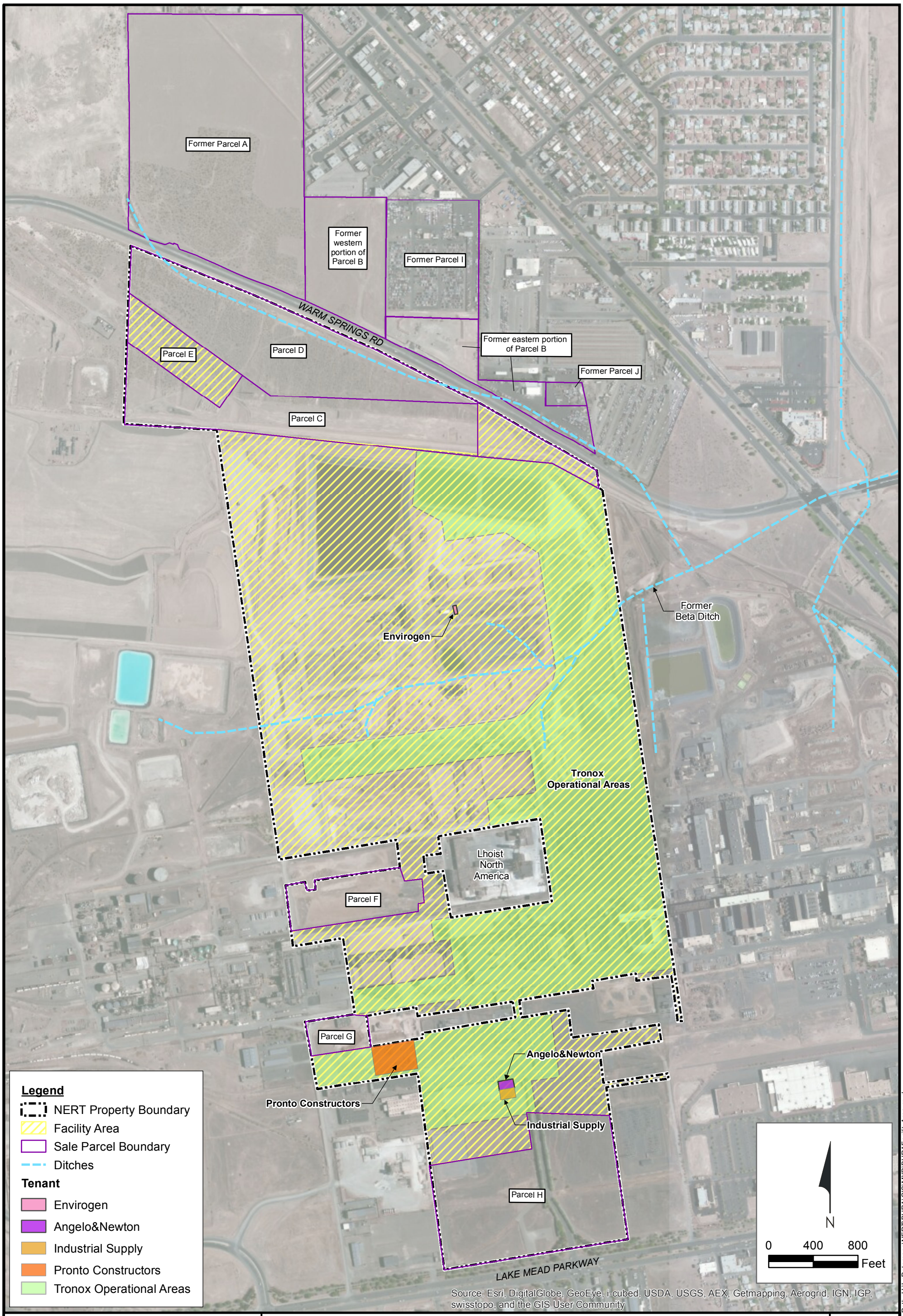
Site Location Map

Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **1**

Drafter: RS | Date: 1/30/2014 | Contract Number: 21-34800I | Approved by: | Revised:



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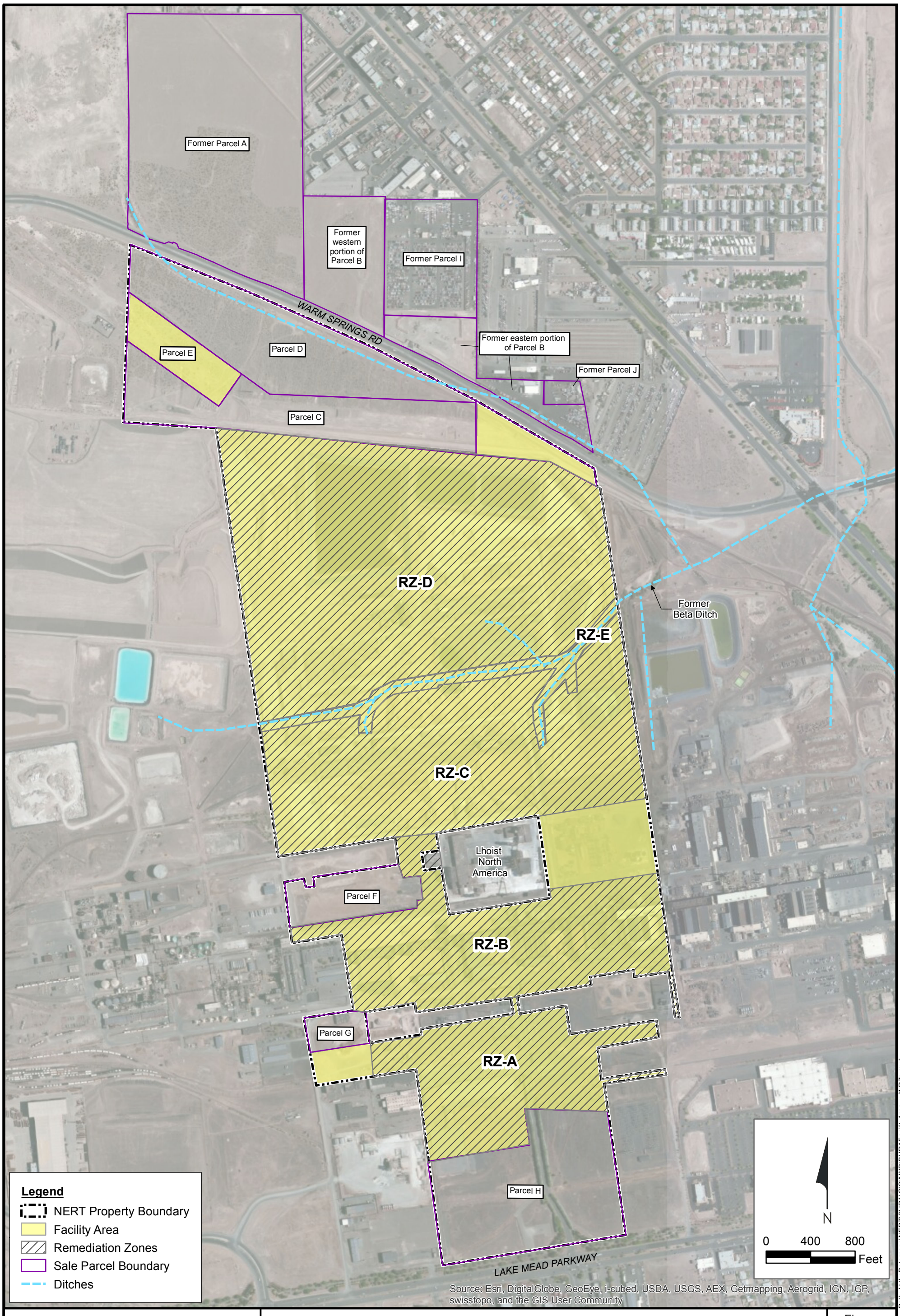
Facility Area
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **2a**

Drafter: RS | Date: 2/7/2014 | Contract Number: 21-34800I | Approved by: | Revised:



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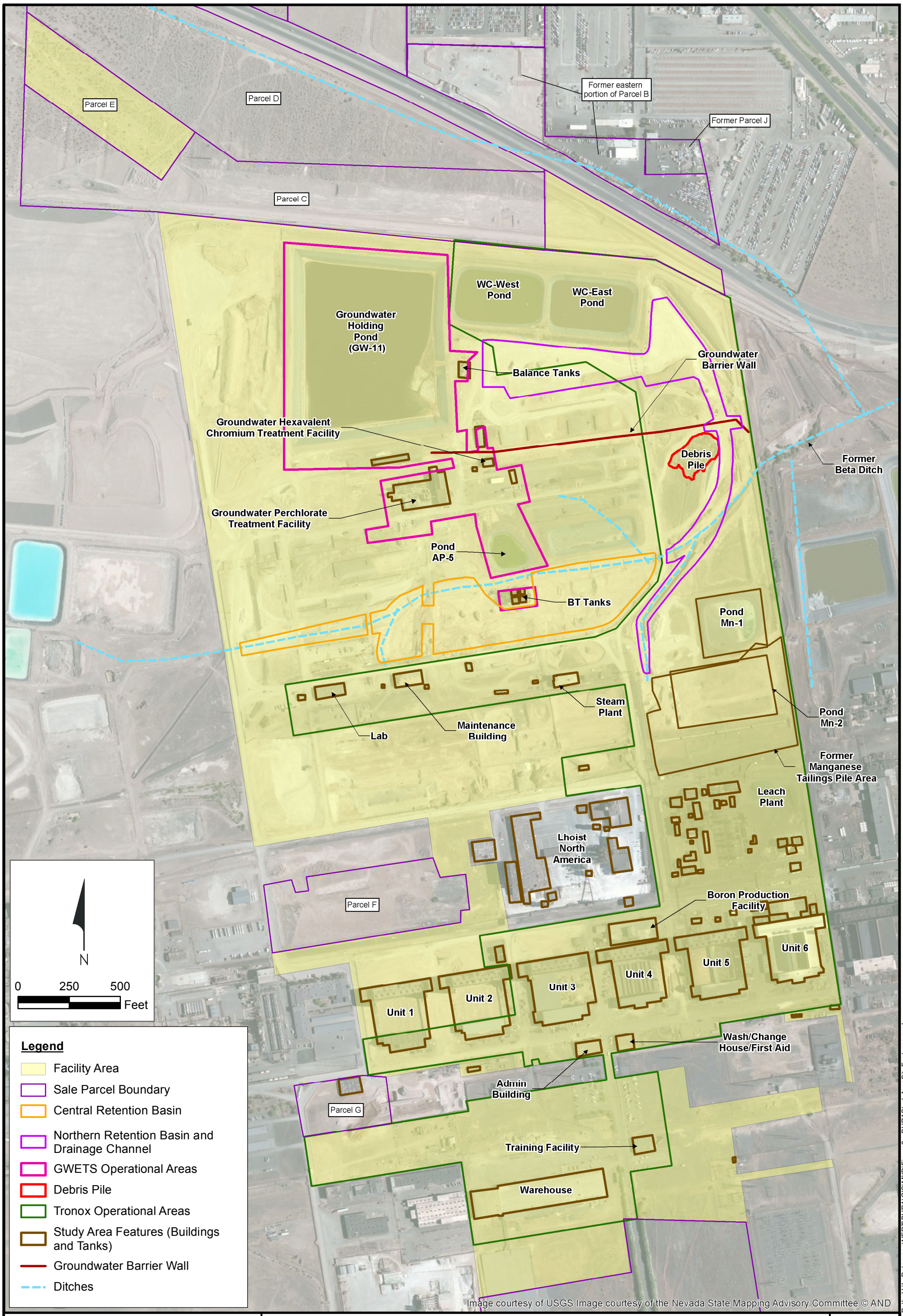
Facility Area and Remediation Zones
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **2b**

Drafter: RS	Date: 2/7/2014	Contract Number: 21-34800I	Approved by:	Revised:



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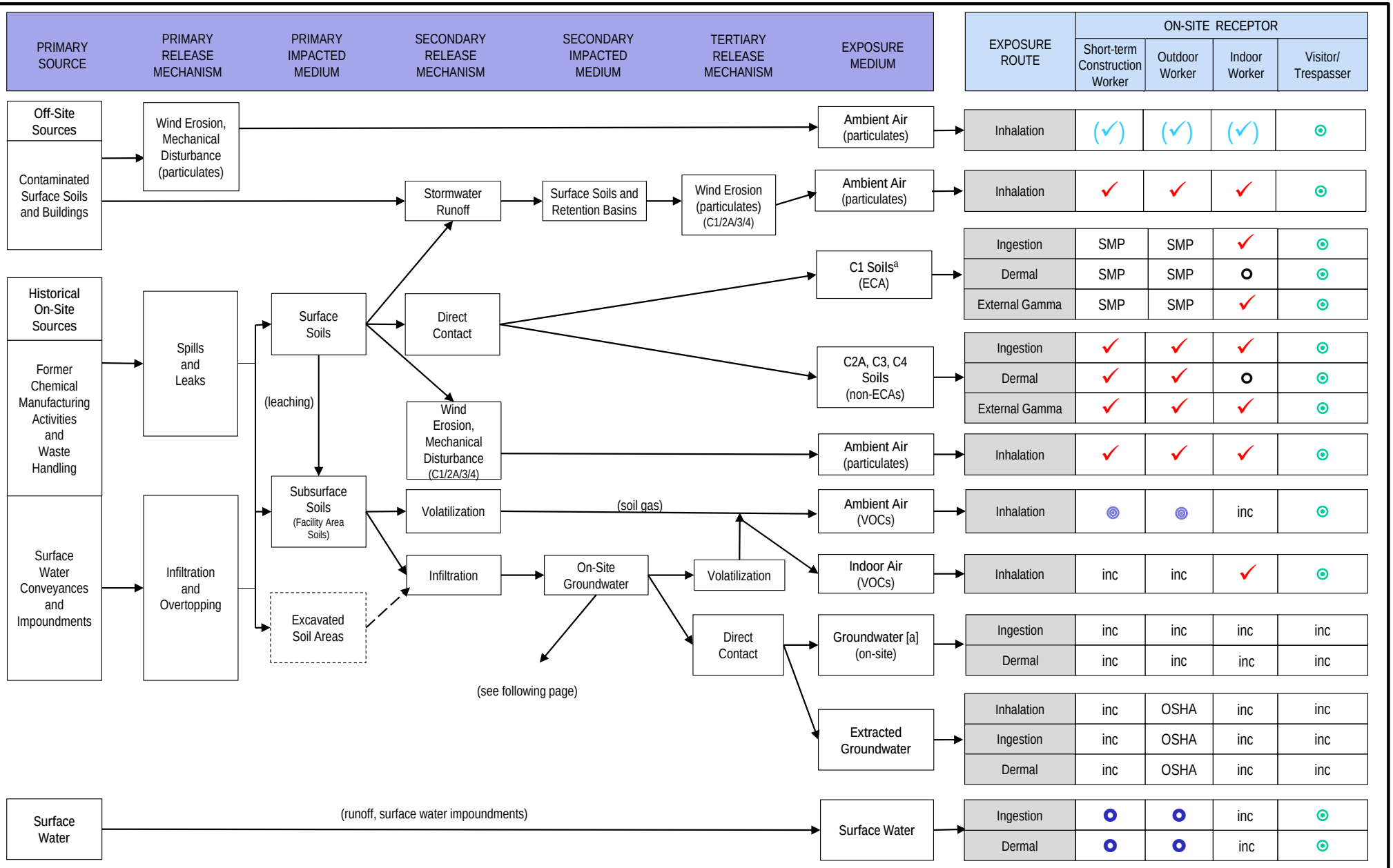
Facility Area Features
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **2c**

Drafter: RS | Date: 2/7/2014 | Contract Number: 21-34800I | Approved by: | Revised:



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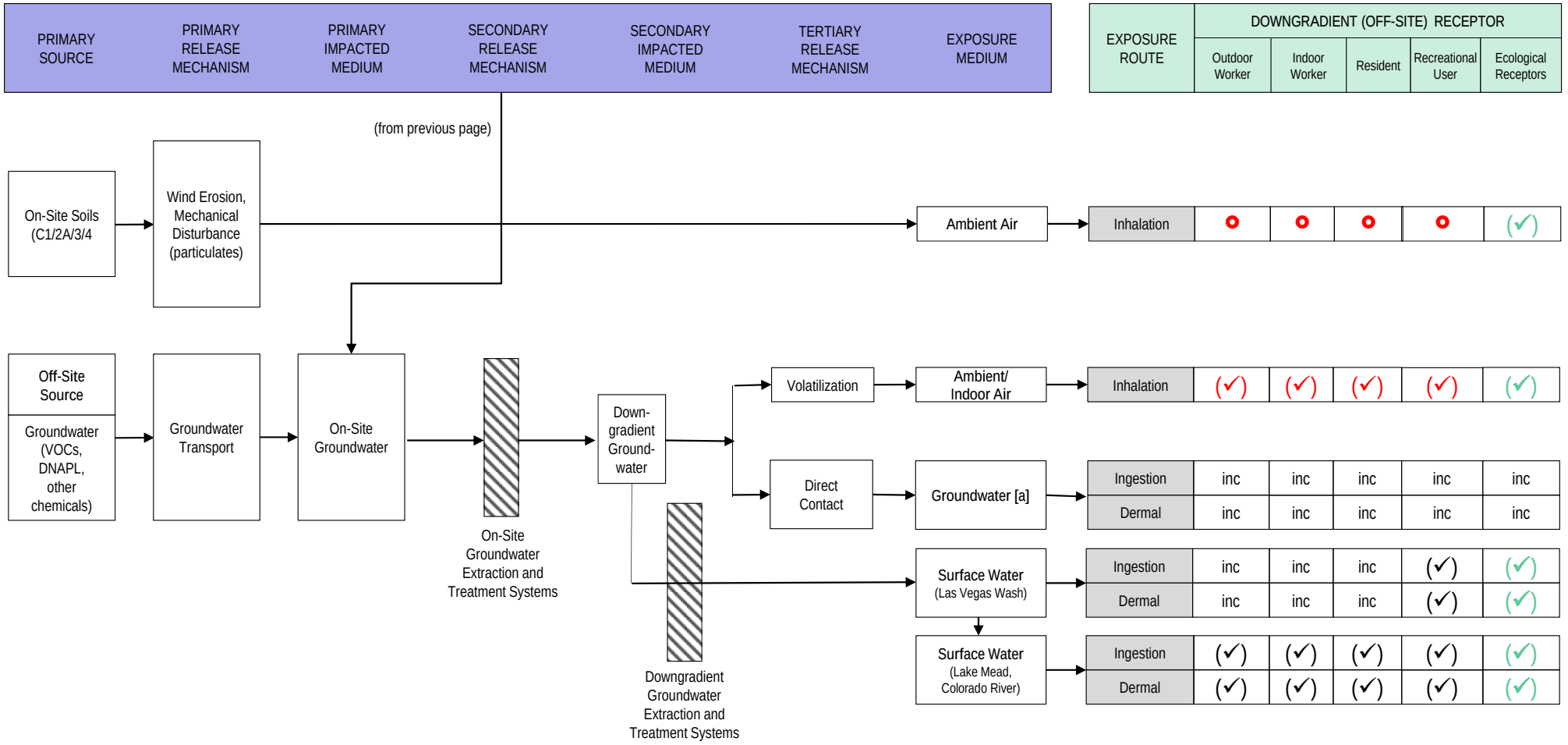
Conceptual Site Model Diagram: Facility Area and Downgradient Plume
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **3**

Drafter: EL Date: 2/21/2014 Contract Number: 21-34800l Approved by: Revised:



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Conceptual Site Model Diagram: Facility Area and Downgradient Plume
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **3**

Drafter: EL Date: 2/21/2014 Contract Number: 21-34800l Approved by: Revised:

Note:

This preliminary CSM, including the identification of sources, release mechanisms, exposure media, exposure routes, and receptors is based on current understanding of on-site and off-site environmental conditions. The CSM will be revised, as appropriate, based on evaluation of additional environmental data collected during the RI.

[a] Groundwater is not and will not be used as a source of drinking water. Incidental ingestion and dermal contact with groundwater by on-site construction workers are considered to be incomplete exposure pathways because depth to groundwater is >20 ft bgs. For off-site workers, depth to groundwater in some areas is <20 feet; however, the intermittent exposures of a construction worker to groundwater would be negligible.

Key:

C1, C2A, C3, C4	Category 1, 2A, 3, and 4 soils, where C1 = soils 0 – 10 feet bgs in ECAs; C2A = soils 0 – 10 feet bgs (excluding remediation zone A) with concentrations <BCLs; C3 = soils 0 – 10 feet bgs with concentrations >BCLs; C4 = soils 0 – 10 feet bgs not previously sampled or available information considered inadequate. C2B soils (not shown on this CSM) are soils 0 – 10 feet bgs with concentrations <BCLs in remediation zone A.
inc	Incomplete exposure pathway
OSHA	Workers at the groundwater extraction and treatment facility could potentially be exposed to contaminants in extracted groundwater. However, potential exposures will not be evaluated quantitatively because the workers are regulated by the Occupational Safety and Health Administration (OSHA) and a comprehensive worker health and safety plan (HASP) is in place to mitigate potential exposures.
SMP	Site Management Plan -- potential exposures for direct-contact pathways will be managed through the SMP.
✓	Complete exposure pathway; evaluated quantitatively in the BHRA.
(✓)	Potentially complete exposure pathway for off-site receptors. For indoor and outdoor air; pathway will be evaluated quantitatively using analytical results for soil gas and/or groundwater depending on receptor location and data availability. The specific receptors and pathways (i.e., indoor and outdoor exposures) that will be evaluated quantitatively will depend on various factors, including the results from additional sampling for VOCs in the downgradient groundwater plume and/or results from off-site soil gas investigations.
(✓)	Complete exposure pathway. ENVIRON understands that exposures of on-site receptors to airborne releases from neighboring properties would be evaluated in the risk assessments being prepared for those properties, under the oversight of NDEP. Pathway will be discussed quantitatively in the BHRA using results of risk assessments prepared by the neighboring properties, or qualitatively, if risk assessments are not available.
(✓)	Complete exposure pathway for perchlorate and possibly other site-related chemicals; for perchlorate, pathway will be evaluated by comparing surface water concentrations to the Nevada Provisional Action Level for perchlorate (NDEP 2011b).
(✓)	Complete exposure pathway; as discussed in Section 1.2.3, the ecological risk assessment will be conducted following aquifer restoration.
O	Complete, but insignificant exposure pathway. Consistent with USEPA guidance (USEPA 2002b) and the NDEP-approved 2010 HRA work plan (Northgate and Exponent 2010a), potential exposures of indoor workers to soil from dermal exposure are not evaluated quantitatively, but will be discussed qualitatively.
◎	Exposures of outdoor workers via inhalation of soil or groundwater vapors would be less than exposures of indoor workers; inhalation of vapors in outdoor air will be evaluated only if estimated risks for the vapor intrusion (indoor) pathway are >1E-06 or the hazard index is >1.
◉	Exposures of all off-site receptors via inhalation of airborne soil particulates would be significantly less than exposures of on-site workers; inhalation of particulates will be evaluated for off-site receptors only if estimated risks for on-site receptors are >1E-06 or the hazard index is >1.
◉	For on-site receptors, potentially complete, but insignificant exposure pathway; not evaluated quantitatively because potential exposures would be intermittent and of short duration or regulated under OSHA; surface water pathways will be discussed qualitatively.
◉	Potentially complete exposure pathway; not evaluated quantitatively because potential exposures of a visitor/trespasser would be less than exposures of an on-site worker; the visitor/trespasser will be discussed qualitatively.

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Conceptual Site Model Diagram: Facility Area and Downgradient Plume
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **3**

Drafter: EL Date: 2/21/2014 Contract Number: 21-34800l Approved by: Revised:

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Feet

1

2

3

RZ-D

7

RZ-E

4

5

6

RZ-C

9

8

11

10

Lhoist North America

12

UNIT 6

UNIT 5

UNIT 4

UNIT 3

UNIT 2

UNIT 1

RZ-B

RZ-A

Legend

Facility Area

Remediation Zones

Soil Categories

Category 1: Soils In ECAs

Category 2A: Soil Concentrations <BCLs (not an ECA, excluding RZ-A)

Category 2B: Soil Concentrations <BCLs (for RZ-A)

Category 3: Soil Concentrations >BCLs (not an ECA)

Category 4: Soils not previously sampled or available information considered inadequate

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Path: H:\LePetomane\NERT\BHRA\GIS\MXD\Figure4_Categories of Surface soils.mxd

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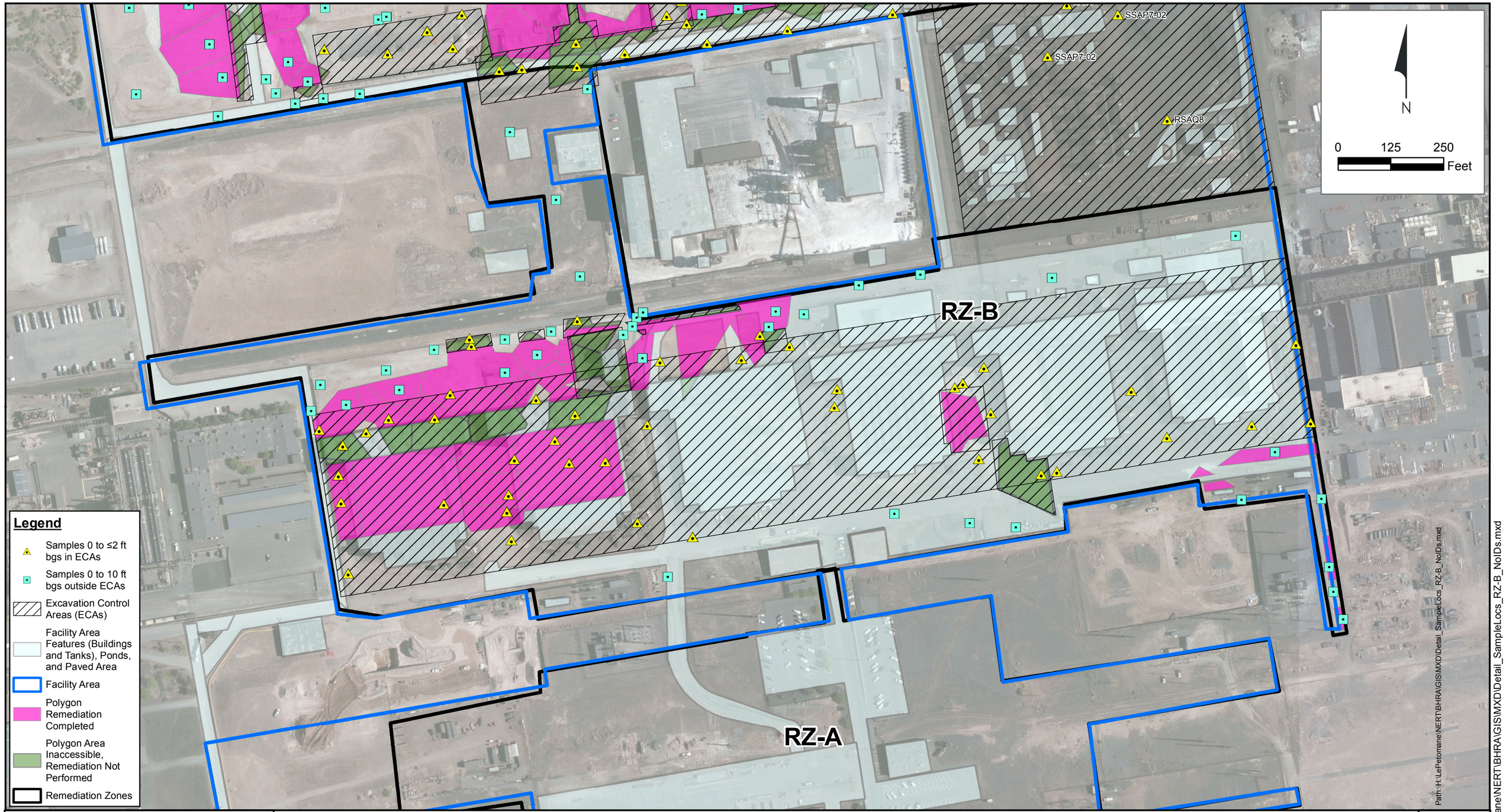
Soil Category Areas for Surface and Near Surface Soils
(0-10 ft below "new" ground surface)
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
4

Drafter: RS | Date: 2/7/2014 | Contract Number: 21-34800I | Approved by: | Revised:



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Surface and Near Surface Soil Samples in RZ-B

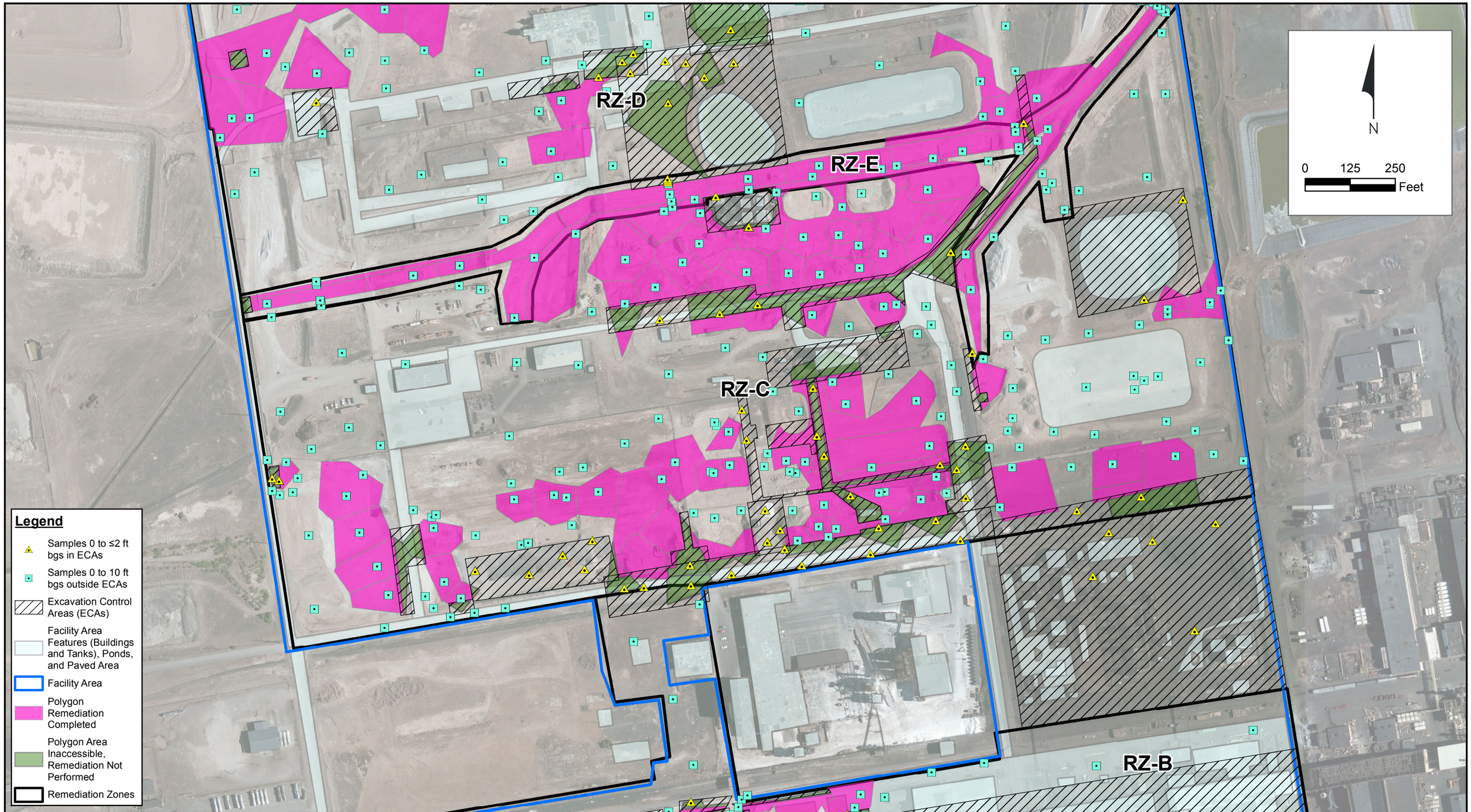
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **5a**

Drafter: RS | Date: 2/7/2014 | Contract Number: 21-34800l l05 | Approved by: | Revised:

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, May 20, 2011.
Data Source: Utilities digitized from 2010 Northgate figures and updated based on ENVIRON's observations during site remediation.

Path: H:\LePetomane\NERT\BHRA\GIS\MXD\Detail_SampleLocs_RZ-B_NoIDs.mxd



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Surface and Near Surface Soil Samples in RZ-C

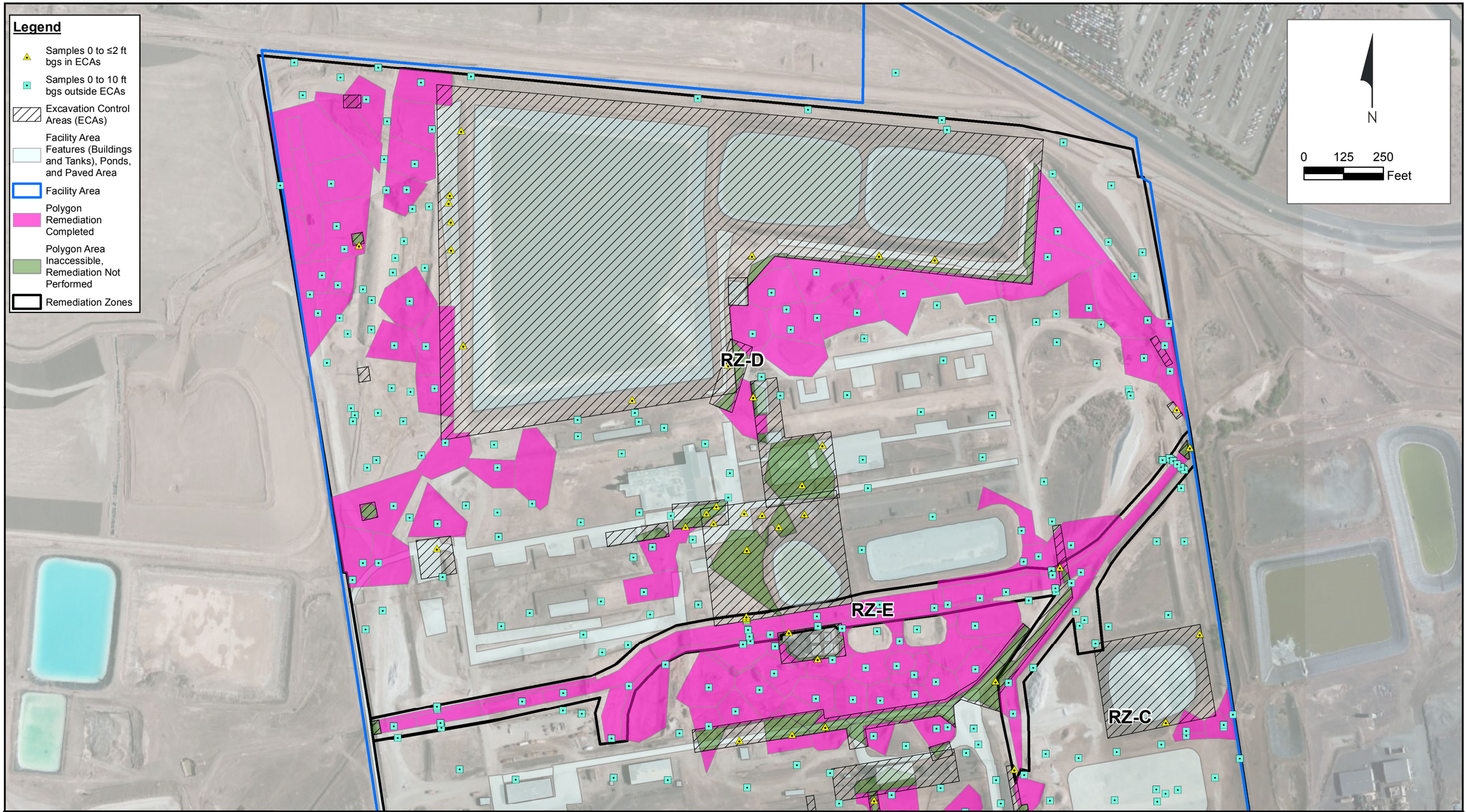
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **5b**

Drafter: RS | Date: 2/28/2014 | Contract Number: 21-34800I | Approved by: | Revised:

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, May 20, 2011.
Data Source: Utilities digitized from 2010 Northgate figures and updated based on ENVIRON's observations during site remediation.

Path: H:\LePetomane\NERT\BHRA\GIS\MXD\Detail_SampleLocs_RZ-C_NoIDs.mxd



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Surface and Near Surface Soil Samples in RZ-D and RZ-E

Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **5c**

Drafter: RS | Date: 2/28/2014 | Contract Number: 21-34800l | Approved by: | Revised:

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, May 20, 2011.
Data Source: Utilities digitized from 2010 Northgate figures and updated based on ENVIRON's observations during site remediation.

Path: H:\LePetomane\NERT\BHRA\GIS\MXD\Detail_SampleLocs_RZ-DE_NoIDs.mxd

N

1:7,800

1 inch = 650 feet

0 325 650

Feet

70

1,000

10,000

60

Former
Beta Ditch

Lhoist

Legend

- NERT Property Boundary
- Ditches
- Central Retention Basin
- Northeast Retention Basin and Drainage Channel
- Site Features (Buildings and Tanks)

2008 Soil Gas Cancer Risks:

- <1x10^{-6}
- 1x10^{-6} to <3x10^{-6}
- 3x10^{-6} to <1x10^{-5}
- 1x10^{-5} to <3x10^{-5}
- 3x10^{-5} to 1x10^{-4}

Ponds:

- Active Pond
- Inactive Pond

Path: H:\LePetomane\NERT\BHRA\GIS\MXD\GW\SoilGasRiskChloroform.mxd

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Chloroform in Groundwater and 2008 Risk Estimates
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure **6**

Drafter: RS | Date: 2/7/2014 | Contract Number: 21-34800I | Approved by: | Revised:

Appendix A

Response to NDEP Comments (Placeholder)

Appendix A is reserved for responses to NDEP's comments on the BHRA Work Plan.

Appendix B

Annotated Health Risk Assessment Work Plan (Northgate Environmental Management, Inc. and Exponent, Inc. 2010)

ANNOTATED

February 21, 2014

Health Risk Assessment Work Plan

Tronox LLC Facility

Henderson, Nevada

March 9, 2010

Prepared For:

Tronox LLC
560 W. Lake Mead Parkway
Henderson, Nevada 89015

Prepared By:

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Oakland, California 94612

and

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Oakland, CA 94607

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Risk Assessor	Risk Assessor	Principal Hydrogeologist

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APPENDIX

ACRONYM LIST

Acronym	Meaning
ADD	Average Daily Dose
BCA	Bias Corrected Accelerated
BCL	Basic Comparison Level
Bgs	Below Ground Surface
BIO	Relative Bioavailability
BRC	Basic Remediation Company
COPC	Chemical of Potential Concern
CSM	Conceptual Site Model
DQI	Data Quality Indicator
DQO	Data Quality Objective
DVSR	Data Validation Summary Report
EC	Exposure Concentration
ECAO	Environmental Criteria and Assessment Office
EDA	Exploratory Data Analysis
FOD	Frequency of Detection
GISdT®	Guided Interactive Statistical Decision Tool
HEAST	Health Effects Assessment Summary Tables
HI	Hazard Index
LADD	Lifetime Average Daily Dose
LBCL	Leaching Basic Comparison Level
LOU	Letter of Understanding
NCEA	National Center for Environmental Assessment
NDEP	Nevada Division of Environmental Protection
PARCC	Precision, Accuracy, Representativeness, Comparability, and Completeness
PCDD	Polychlorinated Dibenzodioxins
PCDF	Polychlorinated Dibenzofurans
PEF	Particulate Emission Factor
PPRTV	Provisional Peer Reviewed Toxicity Value
RC	Remediation Concentration
RfC	Reference Concentration
RfD	Reference Dose
SAR	Structure-Activity Relationship
SF	Slope Factor
SPLP	Synthetic Precipitation Leaching Procedure
SRC	Site-Related Chemical
TEF	Toxicity Equivalency Factor
TEQ	Toxicity Equivalency
UCL	Upper Confidence Limit
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION

Tronox, LLC (Tronox) proposes to perform a human health risk assessment for the Tronox site (Site) after remediation is completed, with the status of completion to be based upon confirmatory field observations and laboratory analyses. By performing a risk assessment after remediation, environmental conditions will represent a baseline for post-remediation exposures and risks, at that time and into the future. This work plan is limited to describing the proposed methodology for conducting human health risk assessments. Because the future use of the site will remain as an active commercial/industrial facility, ecological habitat is not currently, or will not be in the future, sufficient to warrant an ecological risk assessment.

2.0 OBJECTIVES AND OVERVIEW

The objective of the human health risk assessment is to evaluate the potential for adverse human health impacts that may occur as a result of potential exposures to residual concentrations of chemicals in soil, groundwater, and other media of concern following remediation. Findings of the human health risk assessment are intended to support the site closure process.

This section describes the technical approach, guiding principles, and tasks that will be employed to complete the post-remediation human health risk assessment. Tronox's proposed risk assessment approach for the Site follows the basic procedures outlined in the U.S. Environmental Protection Agency's (USEPA's) *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual* (USEPA 1989) and *Draft Risk Assessment Guidance for Superfund: Volume 3—Part A, Process for Conducting Probabilistic Risk Assessment* (USEPA 2001a). Other guidance documents consulted by Tronox in formulating the proposed risk assessment methodology include:

- Guidelines for Exposure Assessment. USEPA 1992a.
- Exposure Factors Handbook. USEPA ~~1997~~ 2011.
- Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). USEPA 2004a.
- Soil Screening Guidance: User's Guide. USEPA 1996a.
- Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. USEPA 2002a.
- Soil Screening Guidance for Radionuclides. USEPA 2000a.
- Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Final Draft. USEPA 2003a.
- Nevada Administrative Code Chapter NAC 445A. Adopted Permanent Regulation of the Nevada State Environmental Commission. LCB File No. R119-96. NDEP 1996.
- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment). USEPA 2009b.

This human health risk assessment methodology will be the primary tool used to guide discussions with the Nevada Division of Environmental Protection (NDEP) with regard to the content and level of detail of the human health risk assessment that is needed to support decision-making for the Site.

2.1 Human Health Protection

Tronox's goal is to remediate Site soils such that it can be documented that, under a future commercial/industrial land use scenario, there is no significant risk to human health. ~~It should be noted that although ½-acre areas are the target for exposure, sampling might not occur on some of these ½-acre exposure areas. Instead, assumptions of similar concentration distributions across areas larger than ½-acre, as supported by the data, might allow risk assessment to be applied to larger areas, which will be the "decision units" for the risk assessment. A risk-based decision might hence be made simultaneously for many ½-acre exposure areas based on the data and documentation that the exposure areas can be aggregated.~~ [Replaced by Section 4.0 of the BHRA.]

The project-specific target risk levels and remediation goals are presented below.

2.2 Risk and Chemical-Specific Goals

1. Post-remediation chemical concentrations and radionuclide activities in Site soils will have a cumulative theoretical upper-bound incremental carcinogenic risk level point of departure of 10^{-6}. For cases where NDEP concurs this goal to be unfeasible, it is Tronox's understanding that NDEP will re-evaluate the goal in accordance with USEPA guidance (USEPA 1991a, 1995). This point of departure risk goal will be evaluated separately for chemicals, asbestos, and radionuclides.

2. Post-remediation chemical concentrations in Site soils are targeted to have an associated cumulative, non-carcinogenic screening hazard index (HI) of 1.0 or less. If the screening HI is determined to be greater than 1.0, target organ-specific HIs may be calculated for primary and secondary organs. The final risk goal will be to achieve target organ-specific non-carcinogenic HIs of 1.0 or less.

3. The risk-based target goal for lead in soil is 800 mg/kg for industrial/commercial land use. This is based on the USEPA's Adult Lead Model using default input factors for an industrial/commercial worker (USEPA 1996b, NDEP ~~2009a~~2013).

4. Where background levels exceed risk-based levels (e.g., arsenic, radium, and thorium), Site soils are targeted to have risks no greater than those associated with background conditions.

5. Asbestos cancer risks are based on the estimated additional deaths from lung cancer or mesothelioma due to constant lifetime exposure. The risk-based point of departure for asbestos is 10^{-6}. Risk from asbestos is evaluated separately from other chemicals and radionuclides.

~~6. The target goal for dioxin/furan toxicity equivalents (TEQ) for commercial and industrial land use is 1 part per billion (ppb). This value is based on the 1998 USEPA OSWER Directive with a modification to address identified uncertainties (10-fold uncertainty factor) regarding cancer potency in humans that results in a screening range of 0.5 to 2 ppb. A single value of 1 ppb was selected (NDEP 2009a). Risks related to TEQs will only be quantitated and presented if residual concentrations exceed the target goal. If risks are quantiatated the uncertainty analysis will explain (at a minimum) the portion of the risks that are related to non-detected congeners as well as the risks associated with the NDEP 1 ppb TEQ target goal.~~ [Replaced by Section C.1 of Appendix C of the RI/FS Work Plan. See also Section 4.1.1 of the ENVIRON BHRA Work Plan.]

3.0 THE HUMAN HEALTH RISK ASSESSMENT PROCESS

Pursuant to NAC 445A, and consistent with USEPA (2001a) and the National Academy of Science (1994) guidance, Tronox proposes to follow a "tiered," or iterative, approach. The tiered approach focuses risk assessments on specific objectives, such as identifying potential areas of concern that need further investigation and/or remediation, and eliminating from further consideration areas that do not pose a risk to human health or the environment.

The risk assessment process described herein consists of two tiers based on USEPA (2001a) guidance. The first tier of the risk assessment process is a deterministic risk assessment approach. The second tier applies a probabilistic risk assessment methodology. The deterministic risk assessment methodology is described in this section. Specific details regarding probabilistic risk assessment methodology will be described in a separate submittal to NDEP following the determination that a probabilistic risk assessment is warranted. This human health risk assessment work plan is a "living" document. As needed, descriptions of additional methodology will be submitted as supplemental components to this work plan.

3.1 Conceptual Site Model and Data Usability Evaluation

3.1.1 Conceptual Site Model

The Conceptual Site Model (CSM) is a tool used in risk assessment to describe relationships between chemicals and potentially exposed human receptor populations, thereby delineating the relationships between the suspected sources of chemicals identified at the Site, the mechanisms by which the chemicals might be released and transported in the environment, and the means by which the receptors could come in contact with the chemicals. The CSM provides a basis for defining data quality objectives (DQOs), guiding site characterization, and developing exposure scenarios. The site history, land uses, climate, physical attributes including geology and hydrogeology, and various field investigations will be fully described for the Site and where appropriate for individual areas-or sources.

3.1.1.1 Sources and Release Mechanisms

[Replaced by Section 5.1.1 of the RI/FS Work Plan. See also Section 2.5 of the ENVIRON BHRA Work Plan.]

~~As described in several investigation work plans for the approximately 450-acre Tronox facility, there are at least 70 source areas on the Site, which is located within the Black Mountain Industrial (BMI) Complex in Clark County, Nevada. The Site location is shown in Figure 1. The source area~~

~~investigations include a Phase A investigation (ENSR, 2006; ENSR 2007) which has already been conducted, and a Phase B investigation that is intended to further characterize soil and groundwater conditions across the Site (ENSR, 2008b; ENSR, 2008c; ENSR, 2008d; ENSR, 2008e). For the Phase B investigation activities, the Site has been subdivided into four areas: Areas I, II, III, and IV. The Phase B investigation does not include Parcels A through D, F, G, and H, which are being independently investigated by the Basic Remediation Company (BRC). Parcel E is land that is jointly used by Montrose Chemical and others, and has not yet been addressed. Investigations of Parcels I and J are being conducted independently from Tronox's Phase B activities, by the tenants of those properties. Phase B investigations are currently ongoing. Areas I, II, III and IV deal with soils. The HRA will include data collected as part of the Phase A and B investigations. It is Tronox's understanding that a full HRA report is not required for Parcel C, D F, G and H soil. Groundwater and vapor intrusion issues will be dealt with on a site-wide basis including the Parcels.~~

~~A CSM has been developed for the Tronox facility (formerly Kerr-McGee Facility) (ENSR, 2005). For risk assessment purposes, the following paragraphs provide supplemental information to the previous CSM based on information obtained from the Phase A investigation and subsequent development of the Phase B investigation work plans.~~

~~Separate investigation work plans have been prepared for each sub-area, as well as site-wide groundwater and soil gas/vapor intrusion work plans (ENSR 2008a; ENSR, 2008b; ENSR, 2008c; ENSR, 2008d; ENSR, 2008e). The four area-specific Phase B investigation work plans focus on the evaluation of potential source areas for the Site-related chemicals (SRCs). The potential source areas on the Tronox Site were identified in a letter of understanding (LOU) to NDEP dated August 15, 1994. Sixty-nine of the source areas have been designated as LOUs (i.e., LOU 1 through LOU 69). The 70th potential source area, identified as the former U.S. Vanadium site, has not been designated as an LOU.~~

~~Potential source areas on the Site are diverse and include but are not limited to: settling ponds, above and below-ground piping, acid drain system, leach plant and associated storage tanks and transfer lines, ammonium perchlorate plant and associated buildings, agricultural division plant, disposal piles, landfills, storm sewers, maintenance shop, cooling tower, transformers, and tailings areas. There are LOUs that contain conveyances that cross over into other sub-areas on the Site. These conveyances have the potential to transport SRCs across the Site.~~

~~Based on groundwater depth measurements conducted in May and December 2007, the depth to groundwater across the Site varies from about 27 to 80 feet below ground surface (bgs). It has been noted that groundwater is deepest in the southernmost portion of the Site.~~

~~Potential release mechanisms from above-ground source areas such as spills, leaks, or accidents could have released SRCs (e.g., volatile organics, semi-volatile organics, inorganics, pesticides, herbicides, radionuclides) to surface soils. These SRCs may have then leached into subsurface soils and eventually migrated to groundwater. In addition, subsurface sources such as below-ground piping or underground storage tanks, may have released SRCs to the subsurface and subsequent migration to groundwater via leaks or accidents.~~

~~In addition to the potential primary release mechanisms, secondary release mechanisms may include resuspension of SRCs in surface soils into ambient air. In addition, surface water runoff and movement along effluent ditches may have allowed SRCs to migrate to other areas in surface soil and leach to subsurface soil/groundwater. Volatile organics detected in the subsurface also have the ability to migrate upward to ambient outdoor air or into buildings.~~

~~The individual Area-Specific Work Plans provide detailed descriptions of the individual LOUs, which include a description of likely related SRCs based on known source areas and the potential impacts to surface soil, subsurface soil, soil gas, and groundwater to identify the need for additional Phase B investigations~~.

3.1.1.2 Potential Receptors and Exposure Pathways

The identification of potentially exposed populations and exposure pathways is supported by the CSM. For a complete exposure pathway to exist, each of the following elements must be present (USEPA 1989):

- A source and mechanism for chemical release;
- An environmental transport medium (i.e., air, water, soil);
- A point of potential human contact with the medium; and
- A route of exposure (e.g., inhalation, ingestion, dermal contact).

As previously discussed, the Site is a currently operating industrial facility. In the future, the Site will continue to be used for industrial and/or commercial purposes. Accordingly, current and future "on-Site receptors" include long-term indoor workers, long-term outdoor workers, and short-term

construction workers (USEPA 2002a) located within the current Site boundaries. Other potential on-Site receptors, such as visitors or trespassers, do not warrant assessment. As discussed by USEPA (2002a), evaluation of exposures to members of the public under a non-residential land use scenario is not warranted for two reasons: (1) because public access is generally restricted at industrial sites and (2) while the public may have access to commercial sites, onsite workers have a much higher exposure potential because they spend substantially more time at a site.

Current and future "off-Site receptors" are residential and worker receptors located outside the current Site boundaries who could be exposed to airborne chemicals emitted from the Site during short-term construction projects (USEPA, 2002a). Based on the relative difference in the on-Site construction particulate emission factor (which is on the order of 10^{+6} kg/m^3) and the off-Site receptor particulate emission factor during construction (which is on the order of 10^{+8} kg/m^3), versus other exposure factors that may be higher for the off-Site receptors, the on-Site construction worker exposure will be greater than that of the off-Site receptors. Additionally, perimeter air monitoring will be conducted during remediation and construction activities. ~~Accordingly, off-Site receptors will not be quantitatively evaluated in post-remediation risk assessments and a discussion will be included to provide rationale for this decision, and the associated uncertainties will be included in the uncertainty assessment.~~ [Replaced by Section 2.5.2 of the BHRA.]

~~Figure 2 presents the primary exposure pathways for each of the potential receptors following remediation at the Site.~~ [Figure 2 is replaced by Figure 3 of the ENVIRON BHRA Work Plan.] These populations and complete/potentially complete exposure pathways for each of the receptors will be evaluated in the post-remediation risk assessments.

- Indoor commercial workers[1]
  - incidental soil ingestion*
  - external exposure from soil†
  - indoor inhalation of VOCs from soil and groundwater[2]
- Outdoor commercial/industrial workers

[1] In accordance with USEPA, 2002a, dermal absorption is not considered to be a complete exposure pathway for the indoor worker. Soil ingestion is identified by USEPA (2002a) as a potentially complete exposure pathway for an indoor worker, due to potential for contact through ingestion of soil tracked indoors from outside. Inhalation of indoor dust (particulates) is accommodated via the soil ingestion pathway. (USEPA, 2002a, Exhibit 4-1)

[2] Radon is not expected to be an issue for the Site because future use will remain commercial/industrial. In the event it is concluded that Site radionuclide concentrations are greater than background the need for an evaluation of potential radon exposure will be discussed with NDEP.

- incidental soil ingestion*
- external exposure from soil†
- dermal contact with soil
- outdoor inhalation of dust*‡
- outdoor inhalation of VOCs from soil and groundwater[3]**

- Construction workers
  - incidental soil ingestion*
  - external exposure from soil†
  - dermal contact with soil
  - outdoor inhalation of dust*‡
  - outdoor inhalation of VOCs from soil and groundwater

* Includes radionuclide exposures.

** Quantitatively evaluated only if warranted based on indoor exposures.

† Only radionuclide exposures.

‡ Includes asbestos exposures.

It should be noted that incidental ingestion of or dermal contact with groundwater during short-term construction activities are not considered complete pathways due to groundwater depth. With regard to long-term inhalation of VOCs from soil and groundwater, this pathway will be quantitatively evaluated for the outdoor scenario only if indoor air modeling concentrations warrant further evaluation, since modeled indoor air concentrations will be greater than modeled outdoor air concentrations (see Section 3.3.3).

3.1.2 Data Usability Evaluation

The primary objective of the data usability evaluation is to identify appropriate data for use in the risk assessment. All relevant site characterization data will be evaluated in accordance with the *Guidance for Data Usability in Risk Assessment (Parts A and B)* (USEPA 1992b,c) and the *NDEP Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Facility in Henderson, NV* (NDEP, ~~2008a~~2010).

[3] Pathway will be quantitatively evaluated only if estimated indoor air concentrations indicate the need.

The USEPA data usability evaluation framework provides the basis for identifying and evaluating uncertainties in the human health risk assessment with regard to the site characterization data. Data usability is the process of assuring or determining that the quality of data generated meets the intended use. USEPA has established a specific guidance framework to provide risk assessors a consistent basis for making decisions about the minimum quality and quantity of environmental analytical data that are sufficient to support risk assessment decisions (USEPA 1992b, c; NDEP, ~~2008a~~2010). The USEPA data usability guidance provides an explicit set of data quality criteria that are used to determine the usability of site characterization data in the risk assessment process.

The six USEPA evaluation criteria by which data are judged for usability in risk assessment are:

- Site data report content;
- Documentation;
- Data sources;
- Analytical methods and detection limits;
- Data review; and
- Data quality indicators (DQIs): precision, accuracy, representativeness, comparability, and completeness (PARCC).

In addition, a data adequacy evaluation will be conducted. The concept of data adequacy incorporates: (i) an analytical program that seeks to quantify all relevant Site chemicals that have the potential to affect risk calculations; and (ii) a spatial density of sampling points that provides confidence that the Site has been sufficiently characterized and that areas requiring remediation have not been missed. The risk assessment analytical program for the Site represents a broad suite of analyses that cover all chemicals that might be conceivably expected to be present at elevated levels at the Site as a result of historical operations on the Site or adjacent to the Site.

An evaluation of the adequacy of the sampling for use in risk assessment will be presented in the risk assessment report. The evaluation may incorporate the results from three analyses. The first qualitatively evaluates whether there are sufficient data available following the data usability evaluation to assess potential health risks for the media and locations identified in the CSM. The second analysis addresses data quality using traditional classical statistics-based process. The third analysis presents a probabilistic analysis of the data.

3.2 Selection of Chemicals of Potential Concern

Chemicals of Potential Concern (COPCs) will be selected for each medium and each decision unit evaluated. The broad suite of analytes used to evaluate the SRCs in the potential source areas is considered to be the current list of COPCs at the Site, based on site characterization conducted to date. However, in order to ensure that the risk assessment focuses on those chemicals that contribute the greatest to the overall risk (USEPA 1989), three procedures will be used to identify COPCs for quantitative evaluation in the risk assessment:

- Identification of chemicals for which Site concentrations are greater than background concentrations (applicable to metals and radionuclides);
- Identification of chemicals that are frequently detected at the Site; and
- Identification of chemicals that exhibit known or potential hot spots.

Chemicals that are infrequently detected within an area will be discussed on a case-by-case basis with NDEP. A concentration-toxicity screen may also be employed to support COPC selection. NDEP's Basic Comparison Levels (BCLs; NDEP ~~2009a~~2013) may be used in this regard (i.e., when the maximum concentration within a decision unit does not exceed one-tenth of NDEP BCL, the chemical is a candidate for COPC elimination). One exception to this COPC screening procedure is for dioxin (TCDD toxicity equivalents). ~~The target goal for dioxin for a commercial and industrial land use is 1 ppb. Accordingly, the criterion for eliminating dioxin as a COPC is 1 ppb.~~ [Replaced by Section C.1 of Appendix C of the RI/FS Work Plan. See also Section 4.1.1 of the ENVIRON BHRA Work Plan.]

The procedure for evaluating COPCs relative to background conditions is presented below. Additional steps of the COPC selection process are detailed in subsequent sections.

3.2.1 Evaluation of Site Concentrations Relative to Background Conditions

USEPA (1989, 1992b,c) guidance allows for the elimination of chemicals from further quantitative evaluation if detected levels are not elevated above naturally occurring levels. Typically, for purposes of selecting COPCs for risk assessment, COPCs are chemicals that are shown to be elevated above naturally occurring levels based on statistical analyses. Generally, this approach is applicable to metals and radionuclides, although USEPA identified other classes of chemicals for which background evaluations may be useful (USEPA 1989). For the purpose of selecting COPCs for each sub-area, exploratory data analysis (EDA) including summary statistics tables (*Guidance on the Development of Summary Statistics Tables for the BMI Plant Sites and Common Areas Projects, Henderson, Nevada, NDEP, 2008b*) and plots of the data, and

appropriate statistical methods will be employed as the basis for decisions (USEPA 2002c). When the weight-of-evidence of the EDA and results of the statistical analyses indicate that a particular chemical is within background levels, then the chemical will not be identified as a COPC. For radionuclides, NDEP's *Guidance for Evaluating Radionuclide Data for the BMI Plant Sites and Common Areas Projects* (NDEP 2009b) should be adopted to assess secular equilibrium when performing background comparisons.

~~The comparison of site-related soil concentrations to background levels will be conducted using the existing soils background data sets presented in the *Background Shallow Soil Summary Report, BMI Complex and Common Area Vicinity* (BRC and TIMET 2007), which includes both the Environ (2003) dataset and the BRC/TIMET dataset collected in 2005, and the *Deep Background Summary Report, BMI Complex and Common Area Vicinity* (BRC, 2009 –). Appropriate subsets of these background data must be identified for comparison of Site and background data.~~[Replaced by Section 4.1.1 of the ENVIRON BHRA Work Plan.]

Exploratory data analysis will be performed using summary statistics and plots such as cumulative probability plots and side-by-side box-and-whisker plots to evaluate whether the Site and background data are representative of a single population. The plots give a visual indication of the similarities between the Site and background data sets, and are qualitatively used in the selection of COPCs. The plots and summary statistics are used in conjunction with the results of the statistical background comparison tests to determine, using a weight of evidence approach, which metals and radionucldies have Site concentrations that exceed background

Statistical background comparisons will be performed using the Quantile test, Slippage test, the *t*-test, and the Wilcoxon Rank Sum test with Gehan modification. The Quantile test, Slippage test, and Wilcoxon Rank Sum test are non-parametric. That is, the tests are distribution free; thus an assumption of whether the data are normally or lognormally distributed is not necessary. The computer statistical software program Guided Interactive Statistical Decision Tools (GiSdT®; Neptune and Company 2007) will be used to perform all statistical comparisons.

The Wilcoxon Rank Sum test performs a test for a difference between the sum of the ranks for two populations. This is a non-parametric method for assessing differences in the centers of the distributions that relies on the relative rankings of data values. Knowledge of the precise form of the population distributions is not necessary. The Wilcoxon Rank Sum test has less power than the two-sample *t*-test when the data are normally distributed, but the assumptions are not as restrictive. The GISdT® version of the Wilcoxon Rank Sum test uses the Mantel approach for

ranking the data, which is equivalent to using the Gehan ranking system. The Gehan ranking system is used to rank non-detects with the rest of the data.

The Quantile test addresses tail effects which are not addressed in the Wilcoxon Rank Sum test. The Quantile test looks for differences in the right tails (upper-end of the data set) rather than central tendency like the Wilcoxon Rank Sum test. The Quantile test will be performed using a defined quantile = 0.80.

The Slippage test looks for a shift to the right in the extreme right-tail of the background data set versus the extreme right-tail of the site data set. This test determines, for each metal and radionuclide, if the number of site concentrations that are greater than the maximum background concentration is greater than would be expected statistically if the site and background distributions are the same.

Typically an alpha = 0.05 is used to evaluate a statistically significant result. Since several correlated tests will be conducted, a lower alpha is selected. As more tests are performed, it is more likely that a statistically significant result will be obtained purely by chance. Given the use of multiple statistical tests, an alpha = 0.025 is selected as a reasonable significance level for the COPC selection. Generally, any chemical that resulted in a *p*-value less than 0.025 in one of four tests will be retained as a COPC. Additionally, these tests are set up with one-sided hypotheses. Consequently, not only are differences between the two samples able to be detected, a directional determination can be made as well (e.g., Site is greater than background).

For radionuclides, if approximate secular equilibrium is exhibited in an isotope decay chain, then background comparisons will be performed to confirm if all the radionuclides in a decay chain are similar to background. If any of the radionculides are greater than background, then all the radionuclides will be carried forward in the risk assessment. If they are not greater than background, then they will not be identified as COPCs and will not be quantitatively evaluated in the risk assessment. If secular equilibrium is not exhibited, then background comparisons will be performed for each radionuclide separately and individual radionuclides will be selected as COPCs depending on the outcome of the background comparisons.

3.2.2 Further Selection of COPCs

The COPC selection criteria described in this section will be applied to metals and radionuclide COPCs that are present above background levels, and all other detected chemicals. Initially, as discussed above, the broad-suite analytes will be considered to be potential COPCs at the Site.

From this list, a preliminary list of COPCs will be derived for purposes of risk assessment that includes chemicals that are (USEPA 1989):

- Positively identified in at least one sample in a given medium, including: (1) chemicals with no qualifiers attached (excluding non-detect results with unusually high detection limits, if warranted); and (2) chemicals with qualifiers attached that indicate known identities but estimated concentrations (e.g., J-qualified data);

- Detected at levels significantly elevated above levels of the same chemicals detected in associated blank samples. This protocol includes an analyte if it is not a common laboratory contaminant and its concentration is greater than five times the maximum amount detected in any blank; if the chemical is a common laboratory contaminant (as defined by USEPA 1989, 1992b), it is included only if its concentration is greater than 10 times the maximum amount detected in any blank;

- Tentatively identified but presumed to be present because of association with the Site based on historical information; and

- Transformation (e.g., degradation) products of chemicals demonstrated to be present.

The following criteria established by USEPA (1989) for further reducing the number of COPCs may also be considered:

Historical Information – Chemicals likely to be associated with site activities, based on historical information, will not be eliminated, even if the results of other "COPC reduction" steps indicate that such elimination is warranted.

Concentration and Toxicity – Aspects of concentration and toxicity will be considered prior to eliminating a chemical as a COPC. Specifically, if the maximum concentration within a decision unit does not exceed one-tenth of the chemical-specific BCL, the chemical will be a candidate for COPC elimination. One exception to this COPC screening procedure is for dioxin (TCDD toxicity equivalents). ~~The target goal for dioxin for a commercial and industrial land use is 1 ppb. Accordingly, the criterion for eliminating dioxin as a COPC is 1 ppb.~~ [Replaced by Section C.1 of Appendix C of the RI/FS Work Plan. See also Section 4.1.1 of the ENVIRON BHRA Work Plan.] In general, Class A carcinogens will be retained as COPCs.

Availability of Toxicity Criteria – Some chemicals have not been assigned toxicity criteria. Prior to eliminating such chemicals, structure-activity relationship (SAR) analysis and applicability of surrogate toxicity values will be considered.

Mobility, Persistence and Bioaccumulation – Chemicals that are highly mobile, are persistent, or tend to bioaccumulate will generally be retained as COPCs.

Special Exposure Routes – For some chemicals under special site-specific scenarios, certain exposure routes need to be considered carefully before eliminating COPCs.

Treatability – Chemicals that are difficult to treat should remain as COPCs because of their importance during the selection of remedial alternatives if needed.

Documentation of Rationale – Rationale for the exclusion of any chemicals from the risk assessment will be documented in the risk assessment report.

Need for Further Reduction of COPCs – The need for further reduction of COPCs will be considered prior to applying additional COPC reduction criteria. It may be appropriate to narrow the number of COPCs included in fate and transport modeling by grouping COPCs with similar fate and transport properties (USEPA, 1989). That is, the modeled behavior of a given COPC will likely reflect that of other COPCs with similar properties. The selection of appropriate COPCs to be included in fate and transport modeling will be discussed with, and approval sought from, NDEP prior to modeling. A discussion of the COPCs that are not included in fate and transport modeling will be presented in the uncertainty section of the risk assessment report.

Frequency of detection (FOD) is another USEPA COPC selection criterion that may warrant further COPC reduction for chemicals not addressed by background comparisons. Chemicals exhibiting a low FOD within a specific exposure area or decision unit generally will not contribute significantly to risk and hazard estimates when hot spots are not present. USEPA (1989) suggests that chemicals with a FOD less than or equal to five percent, with the exception of metals and known human carcinogens, may be considered for elimination. Prior to eliminating a COPC based on the FOD criteria, (1) any elevated detection limits will be addressed; and (2) data distributions within decision units will be considered (e.g., potential hot spots will be assessed). Additionally, the detection of the COPC in all sampled media will be considered. For example, USEPA recommends that a chemical infrequently detected in soil should not be eliminated if it is frequently detected in groundwater and exhibits mobility in soil. As stated above, chemicals that are infrequently detected within an exposure area will be addressed on an exposure area-specific basis and will be discussed on a case-by-case basis with NDEP.

Approval by NDEP – NDEP approval will be sought prior to the elimination of any potential COPCs from the risk assessment.

3.2.3 Summary and Presentation of COPCs

For each exposure area, a summary of the site COPC data (i.e., chemical, range of concentration, background levels, FOD, retained/eliminated as COPC, and rationale for elimination) will be presented in table form. Summary statistics tables will be prepared that include (at a minimum) all items in NDEP's *Guidance on the Development of Summary Statistics Tables for the BMI Plant Sites and Common Areas Projects, Henderson, Nevada* (NDEP, 2008b).

3.3 Determination of Representative Exposure Concentrations

A representative exposure concentration is a COPC-specific and media-specific concentration value used in the dose equation for each receptor and each exposure pathway. As described below, the methods, rationale, and assumptions employed in deriving the representative exposure concentrations will be consistent with USEPA guidance and will reflect site-specific conditions.

3.3.1 Soil

The risk assessment will incorporate representative exposure concentration estimates (e.g., 95 percent upper confidence limit of the mean [UCL; USEPA 2002d; Neptune and Company 2009], as presented below) that specifically relate to potential site-specific human exposure conditions.

~~NDEP recommends that the approach for estimating a UCL of the mean follow the methods used in the computer statistical software program GiSdT® (Neptune and Company, 2007), or the stand alone software EnviroGiSdT (Neptune and Company, 2009), unless an alternative approach is needed to accommodate any special statistical considerations for a given site (e.g., spatial correlation structure, weighting). The methods presented in GiSdT and EnviroGiSdT are accompanied by a user's guide. GiSdT offers three methods. A normal based *t*-distribution method, a simple bootstrap, and a bias corrected accelerated (BCA) bootstrap. NDEP recommends using the highest of the UCLs from these three methods. If spatial correlations are of concern, then approaches involving kriging may be proposed. If data are not collected randomly, but are instead collected according to a weighted sampling scheme, then weighting methods may be proposed.~~

~~If the data are spatially uncorrelated for a particular COPC, the 95 percent UCL will be computed to represent the sub-area-wide exposure point concentration. Based on USEPA (1989) guidance and NDEP's recommendation, non-detects will generally be assigned a value of half~~

~~the detection limit. In some cases (e.g., very few high detect values and mostly non-detect values), alternative methods for addressing censored data will be evaluated. For radionuclide data, the actual reported value will be used even if it is less than the minimum detectable activity. Data identified in the data usability evaluation as unusable due to elevated reporting limits will not be used in the calculation of representative exposure concentrations. In all instances, if the selected 95 percent UCL does not exceed the maximum value (including detects and detection limits), it will be selected as the exposure point concentration; otherwise, the maximum value will be used as the exposure point concentration.~~ [Replaced by Section 4.2.2 and Appendix E of the ENVIRON BHRA Work Plan.]

Representative exposure concentrations for chemicals and radionuclides in soil will be based on the potential exposure depth interval for each of the receptors. For workers who are exposed to surface soils, data from the top two feet of soil will be used (USEPA 2002a). For construction workers and commercial/industrial receptors who may be exposed to contaminants in subsurface soils subsequent to intrusive activities, soil data from the surface to a depth as great as 10 feet bgs will be considered for use in calculating exposure concentrations. For external radiation exposures, data from the surface to 10 feet bgs will be used for all receptors.

Estimation of air exposure concentrations from soil data for asbestos will be evaluated using the methodology described in *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils for the Basic Management Incorporated (BMI) Complex and Common Areas* (NDEP ~~2009d~~2011). This methodology is based on the protocols described in USEPA (2003a), and requires estimation of asbestos concentrations in soil to develop exposure point concentrations in air.

Asbestos concentrations in surface soils are based on the number of fibers observed in a sample, multiplied by the analytical sensitivity of the measurement:

$$C_{soil} = f \times AS \quad (1)$$

where *f* is the number of fibers observed (unitless) and *AS* is the analytical sensitivity (fibers per gram [fibers/g]). If more than one asbestos sample is collected then the analytical sensitivity is pooled across the *n* samples as follows:

$$Pooled\ AS = 1/\sum_{i-1}^{n} 1/AS_i \quad (2)$$

Two estimates of the asbestos concentration will be evaluated, best estimate and upper bound as defined in USEPA's draft methodology (USEPA 2003a) and NDEP (~~2009d~~2011). The best estimate concentration is similar to a central tendency estimate, while the upper bound concentration is comparable to a reasonable maximum exposure estimate. The calculation of pooled analytical sensitivity and estimation of asbestos air concentrations is discussed more fully in NDEP (~~2009d~~2011).

3.3.2 Outdoor and Indoor Dust

Long-term exposure to COPCs bound to dust particles will be evaluated using USEPA's Particulate Emission Factor (PEF) approach (USEPA 2002a). The PEF relates concentrations of a chemical in soil to the concentration of dust particles in the air. The Q/C (Site-Specific Dispersion Factor [USEPA 2002a]) (see ~~Table 1~~[Table 1 is replaced by Table 10 of the ENVIRON BHRA Work Plan] and ~~Appendix A~~ [Appendix A is replaced by Table 11 of the ENVIRON BHRA Work Plan]) values in this equation will be for Las Vegas, Nevada (Appendix D of USEPA 2002a). The USEPA guidance for dust generated by construction activities (USEPA 2002a) will be used for short-term construction worker exposures (see ~~Table 1~~[Table 1 is replaced by Table 10 of the ENVIRON BHRA Work Plan]). Input soil concentrations for the model will be the exposure point concentrations as described above.

The air concentration term for COPCs bound to dust particles is derived from soil concentrations (mg/kg for chemicals, fibers/g for asbestos, and pCi/g for radionuclides) by applying the PEF values described above in the following equations:

Chemicals

$$C_{air} = C_{soil} \times CF_1 \times \left(\frac{1}{PEF}\right) \quad (3)$$

Asbestos

$$C_{air} = C_{soil} \times CF_2 \times \left(\frac{1}{PEF}\right) \times \left(\frac{1}{CF_3}\right) \quad (4)$$

Radionuclides

$$C_{air} = C_{soil} \times CF_2 \times \left(\frac{1}{PEF}\right) \quad (5)$$

where:

C_{air} = air concentration ($\mu g/m^3$, f/cm^3, or pCi/m^3)

CF_1 = conversion factor ($\mu g/mg$)

CF_2 = conversion factor (g/kg)

CF_3 = conversion factor (cm^3/m^3)

PEF = particulate emission factor (m^3/kg)

For long-term indoor air exposure to COPCs bound to dust particles, an indoor air dust attenuation factor will be used to transfer outdoor air concentrations to indoor air concentrations (see Section 4.2.1). This will be applied to metals, radionuclides, non-volatile organic chemicals, and asbestos.

For exposures to VOCs, and volatile SVOCs, the soil gas measurements as described in the following section will be used and these chemicals will not be evaluated as particulates.

3.3.3 Indoor and Outdoor Vapors

Volatile constituents (VOCs and certain SVOCs[4]) in soil and groundwater may infiltrate buildings to be constructed at the Site through cracks in their foundations. Indoor air concentrations for these chemicals will be estimated using soil gas measurements collected at the Site (Soil Gas Data Validation Summary Report (DVSR) submitted to NDEP on October 13, 2008) and any additional soil gas measurements collected as part of the RI data gaps investigation as described in Section 3.1.2 of the ENVIRON BHRA Work Plan .

The USEPA implementation of the "Johnson and Ettinger model", hereafter referred to as the J&E model (USEPA, 2004b; Johnson and Ettinger, 1991), will be used with soil gas data to estimate exposure point concentrations for organic chemicals for the indoor air exposure pathway.

[4] VOCs are defined by USEPA as chemicals with a Henry's Law constant of 1 x 10-5 atm-m3/mole or greater and with a molecular weight of less than 200 g/mole (USEPA 1991b),

The J&E model incorporates both convective and diffusive mechanisms for estimating the transport of vapors emanating from subsurface media impacted by VOCs into indoor spaces. The major assumption/limitation of the J&E model is that the model is one-dimensional and transport is directed exclusively into the building. That is, vapors only migrate upward from the impacted subsurface media and into the building. Lateral deflection due to the presence of low permeability units or multi-dimensional diffusive transport that reduces the amount of VOC mass that may enter the indoor space is conservatively ignored (diffusion is, physically and mathematically, a three-dimensional process). Additionally, the model assumes that the vapors are at their peak concentration at the floor slab of the building, regardless of the actual depth below ground surface that the highest VOC concentration was detected.

Other assumptions/limitations of the J&E Model are as follows (USEPA, 2004b):

- Contaminant vapors enter the structure primarily through cracks and openings in the walls and foundation.
- Convective transport occurs primarily within the building zone of influence and vapor velocities decrease rapidly with increasing distance from the structure.
- Diffusion dominates vapor transport between the source of contamination and the building zone of influence.
- All vapors originating from below the building will enter the building unless the floors and walls are perfect barriers.
- All soil properties in any horizontal plane are homogenous.
- The contaminant is homogeneously distributed within the zone of contamination.
- The areal extent of contamination is greater than that of the building floor in contact with the soil.
- Vapor transport occurs in the absence of convective water movement within the soil column (i.e., evaporation or infiltration), and in the absence of mechanical dispersion.
- The model does not account for transformation processes (e.g., biodegradation, hydrolysis, etc.).

- The soil layer in contact with the structure floor and walls is isotropic with respect to permeability.

- Both the building ventilation rate and the difference in dynamic pressure between the interior of the structure and the soil surface are constant values.

Inputs to the J&E model include the chemical properties and soil gas concentrations of volatile COPCs, soil properties, and default building properties. ~~The chemical properties are the default values coded into the J&E model as downloaded from the USEPA website (http://www.epa.gov/oswer/riskassessment/airmodel/johnson_ettinger.htm).~~

~~Site-specific parameters will be used when available. Default parameter values from ASTM (2000) for commercial buildings, where appropriate, will be used where site-specific data are unavailable.~~ [Updated in Section 4.2.1 of the ENVIRON BHRA Work Plan.]

The need to evaluate long-term exposure to volatile chemicals in outdoor air will be dependent on the results of in the indoor air evaluation, as modeled indoor air concentrations will be orders of magnitude higher than modeled outdoor air concentrations. If evaluation of long-term outdoor air is warranted, concentrations will be determined by calculating a vapor flux based on the effective diffusion coefficient, soil gas measurements and the depth of the soil gas sample(s). The flux will be converted to an outdoor air concentration using the air dispersion factors (Q/C) developed by USEPA (2002a).

3.3.4 Groundwater

As previously discussed, incidental ingestion of or dermal contact with groundwater during construction activities is not considered a complete pathway due to groundwater depth. In addition, the Site will utilize institutional controls to insure that groundwater is not used. Based upon these two issues, groundwater will not be quantitatively evaluated.

~~3.4 Methodology for Evaluating Potential Impacts to Groundwater~~

~~The potential impacts of residual levels of COPCs in soil on groundwater quality will be evaluated using a tiered approach. Initially, soil concentration data will be evaluated by comparing to NDEP Leaching BCLs (LBCLs) which are based on a simple soil/water partitioning and groundwater dilution model provided in the USEPA's *Soil Screening Guidance* (USEPA 1996a). The model consists of a series of calculations used to determine COPC concentrations in groundwater that result from their presence in the unsaturated zone. The model simulates non-dispersive mass transport in soil from an infinite source. It assumes steady-state~~

~~flow conditions, that all sources will infiltrate and desorb contaminants from the soil, and that the infiltrate will mix completely within the groundwater mixing zone directly beneath the Site, resulting in an equilibrium groundwater concentration. Following this evaluation the methods outlined in NDEP's January 16, 2010 *Soil to Groundwater Leaching Guidance* (NDEP, 2010) may be utilized. For example, results from synthetic precipitation leaching procedure (SPLP) will be used to supplement the migration to groundwater evaluation as this method is intended to provide a more realistic assessment of chemical mobility under actual field conditions (i.e, when it rains). The presence of chemicals in groundwater will also be considered. If the results of the screening-level evaluation indicate the potential for future groundwater concentrations to exceed applicable environmental- and health-based standards (e.g., MCLs, NDEP residential water comparison levels), a decision will be made to: (1) proceed with additional vadose zone modeling utilizing more refined modeling tools (e.g., SESOIL or VLEACH vertical migration modeling, development of site-specific dilution factors based on SPLP data; (2) re-evaluate the risk goal in accordance with USEPA guidance; or (3) perform additional soil removal and sampling. Results of this evaluation will also be combined with existing groundwater concentrations to evaluate whether post-remediation COPC concentrations in soil (if any) could potentially impact groundwater to a cumulative extent greater than applicable standards, or – if existing groundwater concentrations are already above these standards – to determine the incremental increase in concentrations.~~

[The groundwater approach is discussed in Section 1.2 of the ENVIRON BHRA Work Plan and Section 5.4 of the RI/FS Work Plan.]

4.0 TIERED HUMAN HEALTH RISK ASSESSMENT APPROACH

A tiered approach is proposed for the post-remediation risk assessment. The tiered, or iterative approach for the risk assessments follows the USEPA recommendations (USEPA 2001a). The tiered risk assessment approach is applicable for all COPCs, with the exception of lead, as a site-specific remediation goal has been established for lead.

4.1 Deterministic Human Health Risk Assessment Methodology

The deterministic risk assessment will follow procedures outlined in the USEPA's *Risk Assessment Guidance for Superfund: Volume I – Human Health Evaluation Manual* (USEPA 1989). Other guidance documents that will be relied on include:

- *Guidelines for Exposure Assessment*. USEPA 1992a.
- *Soil Screening Guidance: Technical Background Document*. USEPA 1996.
- *Exposure Factors Handbook, Volumes I-III*. USEPA ~~1997~~ 2011.
- *Soil Screening Guidance for Radionuclides.* USEPA 2000a.
- *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*. USEPA 2002a.
- *Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Final Draft.* USEPA 2003a.
- *Child-Specific Exposure Factors Handbook*. USEPA 2006.
- *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment).* USEPA 2009b.
- *Nevada Administrative Code Chapter NAC 445A. Adopted Permanent Regulation of the Nevada State Environmental Commission. LCB File No. R119-96.* NDEP 1996.

Various NDEP guidance documents will also be relied on for the risk assessment (as referenced throughout this Section). In addition, NDEP's BCLs (NDEP ~~2009a~~2013) will be used for comparison of site characterization data to provide for an initial screening evaluation, to assist in the evaluation of data usability, determination of extent of contamination, and initial identification of target remediation goals.

4.2 Deterministic Exposure Parameters

The exposure parameters proposed to be used in the deterministic risk assessment are presented in ~~Tables 2 and 3~~[Tables 2 and 3 are replaced by Table 9 of the ENVIRON BHRA Work Plan]. These generally conservative default values are based on standard USEPA guidance values. Exposure parameters that have significant impact on the results will be discussed in the uncertainty section of the risk assessment.

4.2.1 Deterministic Exposure Assessment

Reasonable maximum exposure levels to chemicals will be calculated for each receptor of concern, using the default exposure parameters identified in ~~Tables 2 and 3~~[Tables 2 and 3 are replaced by Table 9 of the ENVIRON BHRA Work Plan]. A central tendency estimate may also be calculated. As appropriate, site-specific modifications to the default exposure parameters values may be incorporated. The methodology used to estimate the average daily dose (ADD) of the chemicals via each of the complete exposure pathways will be based on USEPA (1989, 1992a) guidance. For chemical carcinogens, lifetime ADD (LADD) estimates are based on chronic lifetime exposure extrapolated over the estimated average 70-year lifetime (USEPA 1989). This is performed in order to be consistent with cancer slope factors, which are based on chronic lifetime exposures. For non-carcinogens, ADD estimates will be averaged over the estimated exposure period. The exposure pathway-specific dose equations are presented below for chemicals, radionuclides, and asbestos.

Chemicals

Soil Ingestion:

$$Dose = \frac{C_{soil} \times IR \times CF_4 \times EF \times ED \times BIO}{BW \times AT \times 365\ d/yr} \quad (6)$$

where:

Dose = ADD for non-carcinogens and LADD for carcinogens (mg/kg-day)

C_{soil} = chemical concentration in soil (mg/kg)

IR = ingestion rate (mg/day)

CF_4 = conversion factor (10^{-6} kg/mg)

EF = exposure frequency (days/year)

ED = exposure duration (years)

BIO = relative bioavailability (unitless)

BW = body weight (kilograms)

AT = averaging time (years); same as the ED for non-carcinogens (AT_{nc}) and 70 years (average lifetime) for carcinogens (AT_c)

With the exception of arsenic (and possibly dioxin/furan TEQs; see below), a relative oral bioavailability (BIO) of 100 percent will be used for all COPCs. Consistent with scientific literature recommendations on arsenic bioavailability (Roberts *et al*. 2001; Ruby *et al*. 1999; USEPA 2001b), an arsenic oral bioavailability of 25 percent will be used. The actual oral bioavailability of arsenic (as well as other metals at the site, for which an oral bioavailability of 100 percent) is likely to be lower than this value.

In regard to dioxin/furan TEQs, Tronox recently submitted a memorandum entitled "Justification for Using an Adjustment Factor for Dioxin Bioavailability in Soil" (Northgate February 2, 2010). Although this memorandum was rejected, further discussions with NDEP led to the development of a protocol for conducting site-specific bioaccessibility testing for dioxin/furans. This protocol was submitted to NDEP (Northgate February 11, 2010), and subsequently revised based on NDEP comments (Northgate February 19, 2010). The revised protocol was accepted by NDEP.

Dermal Contact:

$$Dose = \frac{C_{soil} \times CF_4 \times SA \times AF \times ABS \times EF \times ED}{BW \times AT \times 365\ d/yr} \quad (7)$$

where:

Dose = ADD for non-carcinogens and LADD for carcinogens (mg/kg-day)

C_{soil} = chemical concentration in soil (mg/kg)

CF_4 = conversion factor (10^{-6} kg/mg)

SA = skin surface area (cm^2/event)

AF = soil to skin adherence factor (mg/cm^2)

ABS = absorption factor (unitless)

EF = exposure factor (events/year)

ED = exposure duration (years)

BW = body weight (kilograms)

AT = averaging time (years); same as the ED for non-carcinogens (AT_{nc}) and 70 years (average lifetime) for carcinogens (AT_c)

Chemical-specific dermal absorption values from USEPA guidance (USEPA 2004a [Part E RAGS]) will be used in the risk assessments. USEPA does not recommend absorption factors for VOCs based on the rationale that VOCs are volatilized from the soil on skin and exposure is accounted for via inhalation routes (USEPA 2004a).

Inhalation:

The contaminant concentration in air, rather than contaminant intake, is used as the basis for estimating chemical inhalation risks based on guidance described in *Part F, Supplemental Guidance for Inhalation Risk Assessment* (USEPA 2009b). The equation for inhalation for outdoor workers and construction workers is:

$$EC = \frac{C_{air-outdoor} \times ET_o \times EF \times ED}{AT} \quad (8)$$

where:

EC = exposure concentration ($\mu g/m^3$)

$C_{air\text{-}outdoor}$ = concentration of contaminant in outdoor air ($\mu g/m^3$)

ET_o = exposure time outdoors onsite (hr/day)

EF = exposure frequency (days/yr)

ED = exposure duration (year)

AT = averaging time (hours); based on ED for non-carcinogens (AT_{nc}) and 70 years (average lifetime) for carcinogens (AT_c)

The equation for inhalation for indoor workers is:

$$EC = \frac{[(C_{air-indoor} \times ET_i) + (C_{air-outdoor} \times ET_o \times DF)] \times EF \times ED}{AT} \quad (9)$$

where:

EC = exposure concentration ($\mu g/m^3$)

$C_{air\text{-}indoor}$ = concentration of contaminant in indoor air (applies to volatile COPCs only) ($\mu g/m^3$)

ET_i = exposure time indoors onsite (hr/day)

$C_{air\text{-}outdoor}$ = concentration of contaminant in outdoor air ($\mu g/m^3$)

ET_o = exposure time outdoors onsite (hr/day)

DF = dilution factor for outdoor to indoor air (unitless)

EF = exposure frequency (day/yr)

ED = exposure duration (years)

AT = averaging time (hours); based on ED for non-carcinogens (AT_{nc}) and 70 years (average lifetime) for carcinogens (AT_c)

Radionuclides

Instead of chemical mass, radionuclide activity (e.g., pCi) is used to quantify the amount of a radionuclide in an environmental medium. The pathway-specific intake equations for radiation cancer risk are presented below.

Soil Ingestion:

$$Intake = C_{soil} \times CF_5 \times IR \times EF \times ED \quad (10)$$

where:

Intake = radionuclide intake from soil ingestion (pCi)

CF_5 = conversion factor (g/mg)

C_{soil} = activity concentration of radionuclide in soil (pCi/g)

IR = soil ingestion rate (mg/day)

EF = exposure frequency (days/year)

ED = exposure duration (years).

Inhalation:

The equation for inhalation for outdoor workers and construction workers is:

$$Intake = C_{air-outdoor} \times InhR \times ET_o \times EF \times ED \quad (11)$$

where:

Intake = radionuclide intake from inhalation (pCi)

$C_{air\text{-}outdoor}$ = concentration of radionuclide in outdoor air (pCi/m^3)

InhR = inhalation rate (m^3/hr)

ET_o = exposure time outdoors onsite (hr/day)

EF = exposure frequency (day/yr)

ED = exposure duration (years)

The equation for inhalation for indoor workers is:

$$Intake = C_{air-outdoor} \times DF \times InhR \times ET_i \times EF \times ED \quad (12)$$

where:

Intake = radionuclide intake from inhalation (pCi)

$C_{a\text{-}outdoor}$ = concentration of radionuclide in outdoor air (pCi/m^3)

DF = dilution factor for outdoor indoor air factor (unitless)

InhR = inhalation rate (m^3/hr)

ET_i = exposure time indoors onsite (hr/day)

EF = exposure frequency (day/yr)

ED = exposure duration (years)

External Radiation

The external dose for radionuclide exposure will be calculated using the following equation (adapted from USEPA 2000a):

$$Dose = C_{soil} \times [EF/CF_{DY}] \times ED \times ACF \times [ET_o/CF_{HD} + (ET_i/CF_{HD} \times GSF)] \quad (13)$$

where:

Dose = exposure from external radiation (pCi-yr/g)

C_{soil} = exposure concentration term for soil (pCi/g)

EF = exposure frequency (days/year)

CF_{DY} = conversion factor (days/year)

ED = exposure duration (years)

ACF = area correction factor (unitless)

ET_o = exposure time outdoors onsite (unitless)

CF_{HD} = conversion factor (hours/day)

ET_i = exposure time indoors onsite (unitless)

GSF = gamma shielding factor (unitless).

The USEPA model for external radiation assumes that an individual is continually exposed to a non-depleting radiological source that is effectively an infinite slab. The concept of an infinite slab means that the thickness of the contaminated zone and its aerial extent are so large that it behaves as if it were infinite in its physical dimensions. Source areas contaminated to a depth greater than 15 cm with an aerial extent greater than 1,000 m^2 will create a radiation field comparable to an infinite slab (USEPA 2000). The area correction factor (ACF) adjusts for smaller source areas. USEPA has derived ACFs for various source area sizes, ranging from 10 to 10,000 m^2 (USEPA 2009b). These will be used to assess radiological risks at various site assessment areas at the Site.

The gamma shielding factor (GSF) is a factor that accounts for the shielding effect provided by buildings during times of indoor occupancy or by other site features.

Asbestos

Exposure to asbestos fibers in air will be evaluated using the methodology described in NDEP (~~2009d~~2011). The NDEP asbestos risk assessment guidance is based on methods for assessing asbestos risk described in USEPA (2003a), and also associated examples of the implementation of these methods as described in other documents by the authors of USEPA documents (Berman and Chatfield 1990, Berman and Crump 1999a,b, 2001, Berman and Kolk 2000). The exposure equation for asbestos is analogous to that recommended by USEPA for other inhalation carcinogens. The exposure concentration is a function of the asbestos air concentration, the length of time an individual is exposed, and the averaging time for which carcinogenic effects

are evaluated for the unit risk factor. The equation for a time-weighted exposure concentration in air used in performing an asbestos inhalation risk assessment is the same as for chemicals (Equation 14):

$$EC = \frac{C_{air} \times [ET_o + (ET_i \times DF)] \times EF \times ED}{AT} \quad (14)$$

where:

EC = exposure concentration (fibers/cm^3)

C_a = air concentration of asbestos (fibers/cm^3)

ET_o = Exposure time outdoors onsite (hours/day)

ET_i = Exposure time indoors onsite (hours/day)

DF = dilution factor for outdoor to indoor air (unitless)

EF = Exposure frequency (days/year)

ED = Exposure duration (years)

AT = Averaging time (hours); based on 70 years (average lifetime) (AT_c)

Exposure Assessment Results

Exposure levels of potentially carcinogenic and non-carcinogenic chemicals will be calculated separately because different input parameters apply (i.e., ADD for non-carcinogens and LADD for carcinogens). Exposure levels will be estimated for each relevant exposure pathway (i.e., soil, and air), and for each exposure route (i.e., oral, inhalation, and dermal). Daily doses for the same route of exposure will be summed. The total dose of each chemical is the sum of doses across all applicable exposure routes.

The results of the exposure assessment will be used with information on the toxicity of the COPCs in the risk characterization step of the risk assessment to estimate the potential risks to human health posed by exposure to the COPCs.

4.2.2 Determination Whether to Proceed to a Probabilistic Risk Assessment

The decision of whether the deterministic risk assessment results indicate that final Site conditions are protective of human health and the environment will be made based on the non-cancer HI and incremental lifetime cancer risk (separately for chemicals, radionuclides, and asbestos) characterized in the deterministic risk assessment as follows:

- If both the non-cancer HI and the total Site cancer risks are below their respective acceptable levels (i.e., a target organ HI of 1.0 and a cancer risk point of departure (i.e., 10-6), and no hot spots are determined to exist, it will be concluded that probabilistic risk assessment will not be warranted.

- If either the non-cancer HI or the total Site cancer risk is above their respective target levels, a decision will be made to: (1) re-evaluate the risk goal in accordance with USEPA guidance, (2) proceed to a probabilistic risk assessment or (3) evaluate the feasibility of additional soil removal.

In order to assist in the decision to proceed to a probabilistic risk assessment, a quantitative sensitivity analysis may be performed if Tronox considers that performance of a probabilistic risk assessment may be warranted. The final determination of whether a probabilistic risk assessment is warranted will be made by the NDEP based on critical information provided by Tronox. If a probabilistic risk assessment is conducted for a particular exposure area, all chemicals will be included (i.e., no further reduction of COPCs will be conducted).

4.3 Probabilistic Human Health Risk Assessment Methodology

The probabilistic risk assessment will follow the procedures outlined in USEPA guidance (1989 and 2001a). It should be noted that the use of probabilistic risk assessment methodology is intended to more explicitly identify and quantify the uncertainty and variability that can be expected in the exposure assessment, and consequently, the risks associated with these exposures. As discussed above, specific details regarding proposed probabilistic risk assessment methodology will be described in a separate submittal to NDEP.

5.0 TOXICITY ASSESSMENT

This section identifies how toxicity values to be used for the risk assessment will be obtained. Toxicity values are published by the USEPA in the on-line Integrated Risk Information System (IRIS; USEPA 2009a). Cancer oral slope factors (SFs), which are expressed in units of $(mg/kg\text{-}day)^{-1}$, or inhalation unit risk factors (URFs), which are expressed in units of $(\mu g/m^3)^{-1}$, are chemical-specific and experimentally derived potency values that are used to calculate the risk of cancer resulting from exposure to potentially carcinogenic chemicals. A higher value implies a more potent carcinogenic potential. Non-cancer oral reference doses (RfDs), which are expressed in units of mg/kg-day, and inhalation reference concentrations (RfCs), which are expressed in units of mg/m^3, are experimentally derived "no-effect" levels used to quantify the extent of toxic effects other than cancer due to exposure to chemicals. With RfDs and RfCs, a lower value implies a more potent toxicant. These criteria are generally developed by USEPA risk assessment work groups and listed in the USEPA risk assessment guidance documents and databases. Toxicity criteria will not be developed *de novo* by Tronox for elements or compounds that do not have criteria published in IRIS or other sources outlined below. Should COPCs be found which do not have established toxicity criteria, these will be discussed on a case-by-case basis with NDEP and qualitatively addressed in the uncertainty analysis of the risk assessment report. Where appropriate, and only as approved by NDEP, non-carcinogenic surrogate RfDs or RfCs may be applied.

Like any biological reaction, the toxicity of a chemical on humans can be described as a range of possible outcomes (severities and levels that cause an endpoint of concern). The uncertainty in the toxicity outcomes or values is an important source of uncertainty in most risk assessments and would be an appropriate parameter to be modeled probabilistically. However, for the purposes of both the deterministic and probabilistic assessments, the toxicity values used will be point estimates (deterministic). Available toxicity values for all Site COPCs to be used in the risk assessment will be obtained from the USEPA. The following hierarchy for selecting chemical toxicity criteria will be used (based on USEPA 2003b)

1. IRIS
2. USEPA's Provisional Peer Reviewed Toxicity Values (PPRTVs)
3. National Center for Environmental Assessment (NCEA, or other current USEPA sources)
4. Health Effects Assessment Summary Tables (HEAST)

~~5. USEPA Criteria Documents (e.g., drinking water criteria documents, drinking water Health Advisory summaries, ambient water quality criteria documents, and air quality criteria documents)~~

~~6. ATSDR toxicological profiles~~

~~7. USEPA's Environmental Criteria and Assessment Office (ECAO)~~

~~8. Peer-reviewed scientific literature~~[Replaced by Section 4.3 of the ENVIRON BHRA Work Plan.]:

For carcinogens, the USEPA weight-of-evidence classification will be identified for each carcinogenic COPC. Available RfDs will be obtained for all COPCs, including carcinogens. A list of COPC-specific non-carcinogenic and carcinogenic toxicity criteria, current at the time of the post-remediation risk assessment, will be submitted to NDEP for approval prior to initiation of the risk assessment. Radionuclides toxicity criteria originally published in the *Health Effects Assessment Summary Tables* for radionuclides will be obtained from the USEPA's *Preliminary Remediation Goals for Radionuclides* (USEPA 2007). For some radionuclides, two different toxicity criteria are available: for that radionuclide only, and for the radionuclide and associated short-lived radioactive decay products (i.e., those decay products with radioactive half-lives less than or equal to six months).The toxicity criteria that include radioactive decay products (labeled as "+D" in USEPA (2007) will be used.

Although route-to-route extrapolation is generally inappropriate without adequate toxicological information, route-to-route extrapolation will be applied based on NDEP's approach applied in the derivation of the BCLs (NDEP ~~2009a~~2013). The uncertainties associated with this approach will be addressed in the risk assessment report.

Although USEPA has developed toxicity criteria for the oral and inhalation routes of exposure, it has not developed toxicity criteria for the dermal route of exposure. Typically, a simple route-to-route (oral-to-dermal) extrapolation is assumed such that the available oral toxicity criteria are used to quantify potential systemic effects associated with dermal exposure. However, as noted in USEPA's *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment;* (USEPA 2004a), there is uncertainty associated with this approach because the oral toxicity criteria are based on an administered dose and not an absorbed dose. In general, USEPA (2004a) recommends an adjustment to the oral toxicity criteria to convert an administered dose into an absorbed dose. The adjustment accounts for the absorption efficiency of the chemical in the "critical study" that

is the basis of the oral toxicity criterion. If the oral absorption in the critical study is 100 percent, then the absorbed dose is equivalent to the administered dose and no adjustment is necessary. If the oral absorption of a chemical in the critical study is poor (less than 50 percent), then the absorbed dose is much smaller than the administered dose. In this situation, an adjustment to the oral toxicity criteria is recommended (USEPA, 1989).

For the dioxins/furans, the USEPA toxicity equivalency procedure, developed to describe the cumulative toxicity of these compounds, will be applied. This procedure involves assigning individual toxicity equivalency factors (TEFs) to the 2,3,7,8 substituted dioxin/furan congeners. TEFs are estimates of the toxicity of dioxin-like compounds relative to the toxicity of 2,3,7,8-TCDD, which is assigned a TEF of 1.0. Calculating the TEQ of a mixture involves multiplying the concentration of individual congeners by their respective TEF. One-half the detection limit will be used for calculating the TEQ for individual congeners that are non-detect in a particular sample. The sum of the TEQ concentrations for the individual congeners is the TEQ concentration for the mixture. The WHO 2005 TEF values will be used to evaluate the 17 chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans. In addition, the WHO 2005 TEF values will be used to evaluate the 12 dioxin like PCB compounds [PCB -77, PCB-81, PCB-126, PCB-105, PCB-114, PCB-118, PCB-123, PCB-156, PCB-157, PCB-167, PCB-169, PCB 189] (Van den Berg 2006).

For carcinogenic PAHs, provisional USEPA guidance for estimating cancer risks will be used (USEPA 1993). The procedure uses information from the scientific literature to estimate the carcinogenic potency of several PAHs relative to benzo(a)pyrene. These relative potencies may be used to modify the SF developed for benzo(a)pyrene for each PAH, or to calculate benzo(a)pyrene equivalent concentrations for each of the PAHs (which would then be used with the benzo(a)pyrene SF). The former approach will be used in the risk assessment. If one carcinogenic PAH is considered a COPC then all seven carcinogenic PAHs will be considered COPCs, regardless of whether or not they are detected at the Site. Although route-to-route extrapolation is inappropriate without adequate toxicological information, route-to-route extrapolation will be applied based on USEPA's approach.

USEPA has not derived toxicity criteria to evaluate the potential non-cancer health hazards associated with exposure to the carcinogenic PAH COPCs. For the human health risk assessment, a toxicological surrogate (i.e., pyrene) will be used to quantify the potential non-carcinogenic effects of the carcinogenic PAHs. This surrogate was selected from a list of six PAHs for which non-cancer oral toxicity criteria have been assigned by the USEPA based on a careful consideration of their relevant toxicity data, target organ(s), dose-response information,

and structure-activity relationships. From the available oral non-cancer toxicity data reported by the USEPA, the most sensitive target organs are the liver, kidney, and blood (hematological effects [IRIS], USEPA 2009a; ATSDR 1990, 1995; ORNL 1993). For the carcinogenic PAHs, the non-cancer target organs were found to be the same and the reported toxicological thresholds for these effects are generally in the range for those reported for the non-cancer PAHs (ATSDR 1995). Although naphthalene (2-ring structure) has the most stringent oral non-cancer toxicity criterion (0.02 mg/kg day), pyrene (4-ring structure; oral RfD of 0.03 mg/kg-day) was selected to be the best surrogate due to (1) non-cancer toxicity endpoints are more consistent with those for carcinogenic PAHs; and (2) the greater number of rings in the pyrene chemical structure.

The National Research Council of the National Academies published its technical review of the *Health Implications of Perchlorate Ingestion* in January 2005. From this review USEPA has established a final RfD of 0.0007 mg/kg-day, which is currently contained in the IRIS database (USEPA 2009a). This value will be employed in the risk assessment unless IRIS is updated prior to completion of the risk assessment.

Asbestos risks will be assessed in line with the approaches specified in NDEP's (~~2009d~~2011) *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils for the BMI Complex and Common Areas.* The approach relies on exposure-response coefficients that describe the toxicity of different fiber lengths and types of asbestos. These risk coefficients are adopted from the draft, *Technical Support Documents for a Protocol to Assess Asbestos Related Risk* (USEPA 2003c). The majority of available information indicates that lung cancer and mesothelioma are the most important risks associated with low levels of asbestos (NDEP ~~2009d~~2011, USEPA 2003c). Types and aspect ratios (relative length versus diameter) of asbestos fibers differ, and are known to affect the potency of the material; therefore, deriving conclusions regarding the health effects related to asbestos exposure is complex. In the USEPA draft document (USEPA 2003c) studies from environments with asbestos dusts of differing characteristics were reviewed to evaluate asbestos related risks. USEPA developed an optimal exposure index, which best reconciles the published literature. The index assigns equal potency to fibers longer than 10 µm and thinner than 0.4 µm and assigns no potency to fibers of other dimensions. The optimal exposure index also assigns unique exposure-response coefficients for chrysotile and amphibole fibers for the endpoints of mesothelioma and lung cancer. Optimum dose response coefficients, based on the body of available data will be assumed for this risk assessment. The coefficients are presented in NDEP ~~2009d~~2011; USEPA 2003c)

6.0 RISK CHARACTERIZATION

In the last step of a risk assessment, the estimated rate at which a person intakes a COPC is compared with information about the toxicity of that COPC to estimate the potential risks to human health posed by exposure to the COPC. This step is known as risk characterization. In the risk characterization, cancer risks will be evaluated separately from non-cancer adverse health effects. The methods used for assessing cancer risks and non-cancer adverse health effects are discussed below.

6.1 Methods for Assessing Cancer Risks

In the risk characterization, carcinogenic risk will be estimated as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to chemicals, radionuclides, or asbestos. Carcinogenic risks for chemicals will be evaluated by multiplying the estimated average exposure rate (i.e., LADD calculated in the exposure assessment) by the chemical's SF. The chemical SF converts estimated daily doses averaged over a lifetime to incremental risk of an individual developing cancer. According to USEPA (1989), this approach is appropriate for theoretical upper-bound incremental lifetime cancer risks of less than 1×10^{-2}. The following equations will be used to calculate chemical-specific risks and total Site risks:

$$Risk_{oral\ or\ dermal} = LADD \times SF \tag{15}$$

where:

LADD = lifetime average daily dose (mg/kg-d)

SF = cancer slope factor $(mg/kg\text{-}d)^{-1}$

$$Risk_{inhalation} = EC \times URF \tag{16}$$

where:

EC = exposure concentration ($\mu g/m^3$)

URF = unit risk factor $(\mu g/m^3)^{-1}$

and

$$Total\ Site\ Risk = \sum Chemical\ Risk \quad (17)$$

It will be assumed that cancer risks from various exposure routes are additive. Carcinogenic risk estimates will be evaluated by NDEP in light of site-specific risk management decision criteria.

Radiation cancer risk, like chemical cancer risk, is evaluated as the incremental probability that an individual will develop cancer during their lifetime. Radiation cancer risk is calculated as:

$$Risk = Intake \times SF \quad (18)$$

where:

Intake = average daily intake (pCi)

SF = cancer slope factor $(pCi)^{-1}$

The units in the equation for external irradiation differ, but the equation is analogous:

$$Risk = Intake \times SF \times (1.14 \times 10^{-4}\ yr/hr) \quad (19)$$

where:

Intake = average daily intake (pCi-hr/g)

SF = cancer slope factor (risk/yr per pCi/g)

Radionuclide cancer risks for each exposure pathway are summed to calculate radionuclide cancer risk to an individual.

Asbestos cancer risks are based on the estimated additional deaths from lung cancer or mesothelioma due to constant lifetime exposure. The equation used to calculate asbestos risks based on concentrations of asbestos fibers in air is:

$$Risk = Time\ Weighted\ Airborne\ Concentration\ (f/cm^3)\ \times URF\ (f/cm^3)^{-1} \quad (20)$$

The asbestos URF is calculated according to the methods described in USEPA (2003a) and is based upon separation of fiber type (amphibole and chrysotile), fiber length, and endpoint (mesothelioma and lung cancer). The derivation of the URF is provided in NDEP (~~2009a~~2013).

6.2 Methods for Assessing Non-Cancer Health Effects

Non-cancer adverse health effects are estimated by comparing the estimated average exposure rate (i.e., ADDs or exposure concentrations [ECs] estimated in the exposure assessment) with an exposure level at which no adverse health effects are expected to occur for a long period of exposure (i.e., the RfDs and RfCs).

ADDs and RfDs are compared by dividing the ADD by the RfD to obtain the ADD:RfD ratio, as follows:

$$Hazard\ Quotient_{oral\ or\ dermal} = \frac{ADD}{RfD} \quad (21)$$

where:

ADD = average daily dose (mg/kg-d)

RfD = reference dose (mg/kg-d)

Similarly, ECs and RfCs are compared by dividing the EC by the RfC to obtain the EC/RfC ratio, as follows:

$$Hazard\ Quotient_{inhalation} = \frac{EC}{RfC} \quad (22)$$

where:

EC = exposure concentration (mg/m^3)

RfC = reference concentration (mg/m^3)

The ADD-to-RfD or EC to RfC ratio is known as a hazard quotient. If a person's average exposure is less than the RfD (i.e., if the hazard quotient is less than 1), the chemical is considered unlikely to pose a significant non-carcinogenic health hazard to individuals under the given exposure conditions. Unlike carcinogenic risk estimates, a hazard quotient is not expressed as a probability. Therefore, while both cancer and non-cancer risk characterizations indicate a relative potential for adverse effects to occur from exposure to a chemical, a non-cancer adverse health effect estimate is not directly comparable with a cancer risk estimate.

If more than one pathway is evaluated, the hazard quotients for each pathway, for all COPCs, will be summed to determine whether exposure to a combination of pathways poses a health concern. This sum of the hazard quotients is known as an HI.

$$Hazard\ Index = \sum Hazard\ Quotients \quad (23)$$

A total HI that includes all COPCs and all exposure pathways will be presented in the risk assessment. The NDEP non-cancer risk management target is an HI value of less than or equal to 1.0.

For any HI that exceeds 1.0, the potential for adverse health effects will be further evaluated by considering the target organs upon which each chemical could have an adverse effect. Target organ-specific HIs will be assessed only after approval by NDEP. The target organ specific HIs will be summed for all relevant COPCs. The segregation of HI by target organ is consistent with USEPA guidance for non-carcinogens, including metals (USEPA 1989, 2001c).

6.3 Assessment of Risks Associated with Background Soil

As indicated in Section 3.2, if statistical analyses indicate that a particular chemical is within background soil levels, then the chemical will not be identified as a COPC. However, in cases where the cumulative (Site) ILCR exceeds 10^{-6}, the risk associated with background soil levels will be quantitated. Risk associated with background soil levels will be presented separately and will also be discussed as part of the uncertainty analysis.

6.4 Uncertainty Analysis

Consistent with USEPA (1989) guidance, for the deterministic risk assessment, a qualitative discussion of the uncertainties associated with the estimation of risks for the Site will be presented in the risk assessment report. The uncertainty analysis will discuss uncertainties associated with each step of the risk assessment, including site characterization data, data usability, selection of COPCs, representative exposure concentrations, fate and transport modeling, exposure assessment, toxicity assessment, and risk characterization. For non-carcinogens (HI), chemical carcinogens (risk), and radionuclides (risk), the relative contribution of specific COPCs and pathways to the risk assessment results will be identified. If a probabilistic risk assessment is performed, the uncertainty analysis will be performed quantitatively. Details will be provided in a separate probabilistic risk assessment methodology submittal to the NDEP.

6.5 Data Quality Assessment

Data quality assessment (DQA) is an analysis that is performed after the risk assessment to determine if enough data have been collected to support the risk-based decisions that are being supported by the risk assessment. A DQA of the data used for risk assessment will be presented in the risk assessment report. Sample size calculations will be conducted for a number of chemicals of interest for the Site. ~~The formula used for calculation of sample size is based on a non-parametric test (the Wilcoxon signed rank test), and on simulation studies performed by Pacific Northwest National Laboratories (PNNL 2009) that formed the basis for an approximate formula that is based on the normal distribution. Essentially, the formula is the one that would be used if a normal-based test were being performed, but an adjustment is made (multiply by 1.16) to account for the intent to perform a non-parametric test. The formula is as follows:~~

$$n = 1.16\left[\frac{s^2}{\Delta^2}(z_{1-\alpha} + z_{1-\beta(\mu)})^2 + 0.5z^2_{1-\alpha}\right] \quad (24)$$

~~where,~~

~~n = number of samples~~

~~s = estimated standard deviation of concentrations/fibers~~

~~Δ = width of the gray region (the difference between the threshold value stated in the null hypothesis and the point at which β is specified)~~

~~— α = significance level or Type I error tolerance~~

~~β (μ) = Type II error tolerance; and~~

~~— z = quantile from the standard normal distribution~~

~~For each chemical, inputs for the calculations will include an estimate of the variance from the measured data, a desired significance level, and desired power of the test that must be specified at a concentration of interest (which determines the tolerable difference from the threshold value), typically the NDEP BCL. The calculations will cover a range of Type I and Type II error tolerances, and the point at which the Type II error is specified. That is, various combinations of input values will be used, including: values of α of 5%, 10% and 15%; values of β of 15%, 20%, and 25%; and a gray region of width 10%, 20% and 30% of the threshold level.~~ [Replaced by Section 4.5 of the ENVIRON BHRA Work Plan.]

This analysis will be conducted to document that sufficient data were collected for each decision unit at the site.

6.6 Interpretation of Findings

The risk characterization results will be presented in tabular format in the risk assessment report. Key exposure (e.g., estimated intakes, important modeling assumptions, summary of exposure pathways for each receptor) and toxicity information (e.g., SFs, RfDs, target organs) will be provided. In addition, the risk characterization results will be discussed in the context of the target risk goals specified in Section 2.2. The cancer risk assessment results for chemicals and radionuclides will be presented for both Site -related cancer risk and background cancer risk estimates. Those COPCs and exposure pathways having the greatest influence on the risk assessment results will be identified. As appropriate, graphical presentation of the results will also be included in the risk assessment report. The format and content of risk assessment reports will follow the guidelines presented in ~~USEPA's *Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual—Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments* (USEPA 2001e) and~~ USEPA's Reviewers Checklist (USEPA 1989) to ensure that essential issues are adequately addressed in each risk assessment.

6.7 Risk-Based Remediation Concentration (RCs) for Soil

As previously stated, NDEP's BCLs (NDEP ~~2009a~~2013) will be used as a technical screening tool to assist in the evaluation of data usability, determination of extent of contamination, identification of chemicals of potential concern and identification of target remediation goals. As stated in USEPA and NDEP guidance, risk-based goals (either screening or more refined) are initial guidelines. These values do not represent final cleanup levels or establish that cleanup to meet these goals is warranted (USEPA 1991b, NDEP ~~2009a~~2013). If appropriate, risk-based remedial goals may be modified in accordance with *USEPA Risk Assessment Guidance for Superfund Volume 1 Part B* (USEPA 1991b) to consider such factors as future land use, exposure assumptions and the media and chemicals of potential concern. The modified goals may be based on deterministic or probabilistic methodologies. In the latter case, specific details regarding proposed probabilistic risk assessment methodology will be described in a separate submittal to NDEP.

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Appendix C

Background Data Set for Soils

TABLE C-1. RZ-A BACKGROUND METAL CONCENTRATIONS FOR SURFACE AND NEAR-SURFACE SOILS[a,b]
Nevada Environmental Response Trust Remediation Project Site, Henderson, Nevada

				NON-DETECTS (mg/kg)		DETECTS (mg/kg)					SHAPIRO-WILK TEST	
CHEMICAL NAME	NO. OF SAMPLES	NO. OF DETECTS	% DETECTS	MINIMUM	MAXIMUM	MINIMUM	MEDIAN	MEAN	MAXIMUM	STANDARD DEVIATION	NORMAL (*p*-value)	LOGNORMAL (*p*-value)
Aluminum	31	31	100%	NA	NA	7,340	8,970	9,020	11,400	890	0.6	0.9
Antimony	31	13	42%	0.50	0.50	0.60	1.3	1.5	3.4	0.68	*<0.001*	*<0.001*
Arsenic	31	31	100%	NA	NA	1.6	2.4	2.4	4.3	0.54	0.02	0.5
Barium	31	31	100%	NA	NA	111	162	166	213	22.5	0.6	0.4
Beryllium	31	31	100%	NA	NA	0.36	0.46	0.46	0.59	0.048	0.6	0.7
Boron	31	31	100%	NA	NA	3.4	6.2	6.8	11.7	1.9	0.3	0.4
Cadmium	31	25	81%	0.04	0.04	0.11	0.19	0.20	0.48	0.085	*0.009*	*<0.001*
Chromium (Total)	31	31	100%	NA	NA	5.6	7.5	7.7	10.7	1.2	0.4	0.7
Chromium (VI)	31	1	3%	0.18	0.24	0.29	0.29	0.29	0.29	NA	*<0.001*	*<0.001*
Cobalt	31	31	100%	NA	NA	5.4	7.3	7.3	9.1	0.76	0.5	0.4
Copper	31	31	100%	NA	NA	15.8	19.1	23.1	140	21.8	*<0.001*	*<0.001*
Iron	31	31	100%	NA	NA	11,300	15,700	15,500	20,600	2,140	0.5	0.3
Lead	31	31	100%	NA	NA	7.1	8.9	11.3	72.8	11.6	*<0.001*	*<0.001*
Magnesium	31	31	100%	NA	NA	7,700	9,810	9,990	13,000	1,320	0.8	1
Manganese	31	31	100%	NA	NA	262	360	366	537	61.3	0.03	0.4
Mercury	31	31	100%	NA	NA	0.0060	0.015	0.033	0.36	0.065	*<0.001*	*<0.001*
Molybdenum	31	31	100%	NA	NA	0.27	0.48	1.6	32.7	5.8	*<0.001*	*<0.001*
Nickel	31	31	100%	NA	NA	12.7	15.6	15.9	21.4	1.8	0.08	0.5
Platinum	31	31	100%	NA	NA	0.0060	0.010	0.011	0.046	0.0074	*<0.001*	*<0.001*
Potassium	31	31	100%	NA	NA	1,450	2,080	2,180	4,210	658	*<0.001*	0.02
Selenium	31	6	19%	0.70	0.80	0.80	0.95	0.93	1.1	0.12	*<0.001*	*<0.001*
Silver	31	0	0%	0.20	0.20	NA	NA	NA	NA	NA	NA	NA
Sodium	31	31	100%	NA	NA	307	630	621	1,050	194	0.3	0.3
Strontium	31	31	100%	NA	NA	129	214	222	339	57	0.4	0.3
Thallium	31	31	100%	NA	NA	0.071	0.092	0.11	0.19	0.033	*<0.001*	*0.003*
Tin	31	31	100%	NA	NA	3.1	4.0	4.0	5.8	0.56	0.08	0.5
Titanium	31	31	100%	NA	NA	480	829	793	1,080	162	0.2	0.04
Tungsten	31	31	100%	NA	NA	0.098	0.17	0.21	0.62	0.11	*<0.001*	0.02
Uranium	31	31	100%	NA	NA	0.66	0.98	1.1	1.9	0.36	*0.002*	0.05
Vanadium	31	31	100%	NA	NA	28	46	43.8	54.9	7.6	0.08	0.02
Zinc	31	31	100%	NA	NA	25.8	33.3	40.4	254	39.9	*<0.001*	*<0.001*

Notes:

bgs = below ground surface
ft = feet
mg/kg = milligrams per kilogram
NA = value not available

p-values < 0.01 are shown in italic
Background dataset is from RZ-A, excluding the 6 borings in LOU 62.
Shapiro-Wilk test uses 1/2 the sample quantitation limit (SQL) for non-detects.

[a] Generally defined as the 0-10 foot depth interval. For the purposes of the background evaluations, surface and near surface soils are typically 0-10 ft bgs. For any specific evaluation, the depth interval under evaluation will be specified.
[b] The 31 samples comprising the data set include 16 samples collected from 0.5-2 ft bgs and 15 samples collected from 10-11.5 ft bgs.

TABLE C-2. MCCULLOUGH RANGE BACKGROUND RADIONUCLIDE CONCENTRATIONS FOR SHALLOW SOILS
Nevada Environmental Response Trust Remediation Project Site, Henderson, Nevada

CHEMICAL NAME	NO. OF SAMPLES	CONCENTRATIONS (pCi/g)					SHAPIRO-WILK TEST	
		MINIMUM	MEDIAN	MEAN	MAXIMUM	STANDARD DEVIATION	NORMAL (*p* -value)	LOGNORMAL (*p* -value)
Ra-226	95	0.494	1.09	1.15	2.36	0.340	*<0.001*	0.2
Ra-228	81	0.946	1.93	1.89	2.92	0.391	0.8	0.04
Th-228	101	1.15	1.78	1.74	2.28	0.262	0.04	*0.002*
Th-230	101	0.730	1.21	1.29	3.01	0.389	*<0.001*	0.06
Th-232	101	1.22	1.66	1.66	2.23	0.255	0.01	0.01
U-234	101	0.630	1.05	1.19	2.84	0.456	*<0.001*	*<0.001*
U-235	101	0.0009	0.0600	0.0696	0.210	0.0381	*0.002*	*<0.001*
U-238	101	0.650	1.05	1.16	2.37	0.358	*<0.001*	*<0.001*

Notes:

pCi/g = picoCuries per gram

p- values < 0.01 are shown in italic

Background dataset is from BRC/TIMET's (2007) McCullough Range dataset.

Reference:

Basic Remediation Company and Titanium Metals Corporation (BRC/TIMET). 2007. Background Shallow Soil Summary Report, BMI Complex and Common Areas Vicinity. March 16.

Appendix D

Soil Data Summary Statistics

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
VOCs	Acetone	µg/kg	215	93	43	1.6E+00	2.1E+01	2.7E+00	ND	2.2E+01	1.5E+02	2.6E+01	1.2E+00	ND	1.0E+05	0	1.5E-03
	Acetonitrile	µg/kg	1	0	0	2.7E+00	2.7E+00	ND	ND	ND	ND	ND	NA	ND	6.2E+03	0	4.4E-04
	Azobenzene	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.6E+01	0	1.0E+00
	Benzene	µg/kg	215	0	0	4.4E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	4.2E+00	0	1.2E+00
	Diphenyl sulfide	µg/kg	1	0	0	1.8E+00	1.8E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Bromobenzene	µg/kg	215	0	0	6.1E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	7.0E+02	0	7.2E-03
	Bromochloromethane	µg/kg	215	0	0	7.5E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Bromodichloromethane	µg/kg	215	2	1	5.5E-02	5.0E+00	4.0E-01	ND	5.5E-01	6.9E-01	2.1E-01	3.8E-01	ND	3.4E+00	0	1.5E+00
	Bromoform	µg/kg	215	1	0	3.0E-02	5.0E+00	1.7E+00	ND	1.7E+00	1.7E+00	NA	NA	ND	2.4E+02	0	2.1E-02
	Bromomethane	µg/kg	215	0	0	6.5E-02	6.5E+00	ND	ND	ND	ND	ND	NA	ND	3.9E+01	0	1.7E-01
	2-Butanone	µg/kg	215	73	34	4.7E-01	1.0E+01	6.5E-01	ND	3.3E+00	2.7E+01	5.1E+00	1.6E+00	ND	3.4E+04	0	7.9E-04
	n-Butylbenzene	µg/kg	215	0	0	9.0E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.4E+02	0	2.1E-02
	sec-Butylbenzene	µg/kg	215	0	0	5.3E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.2E+02	0	2.2E-02
	tert-Butylbenzene	µg/kg	215	0	0	5.0E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	3.9E+02	0	1.3E-02
	Carbon Disulfide	µg/kg	1	0	0	6.1E-02	6.1E-02	ND	ND	ND	ND	ND	NA	ND	7.2E+02	0	8.4E-05
	Carbon Tetrachloride	µg/kg	215	1	0	1.0E-01	5.0E+00	6.3E-01	ND	6.3E-01	6.3E-01	NA	NA	ND	3.8E+00	0	1.3E+00
	Chlorobenzene	µg/kg	215	6	3	5.4E-02	5.0E+00	6.4E-01	ND	1.1E+00	1.9E+00	4.4E-01	3.9E-01	ND	7.0E+02	0	7.2E-03
	Chloroethane	µg/kg	215	0	0	2.3E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	1.1E+03	0	4.5E-03
	Chloroform	**µg/kg**	**215**	**81**	**38**	**5.0E-02**	**4.6E+00**	**3.1E-01**	**ND**	**8.1E+00**	**1.5E+02**	**2.4E+01**	**2.9E+00**	**ND**	**1.6E+00**	**0**	**9.7E+01**
	Chloromethane	µg/kg	215	0	0	1.3E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	8.1E+00	0	6.2E-01
	2-Chlorotoluene	µg/kg	215	0	0	1.2E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	5.1E+02	0	9.8E-03
	4-Chlorotoluene	µg/kg	215	0	0	8.6E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Cumene	µg/kg	215	0	0	5.2E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	6.5E+02	0	7.7E-03
	p-Cymene	µg/kg	215	1	0	6.2E-02	5.0E+00	5.5E-01	ND	5.5E-01	5.5E-01	NA	NA	ND	6.5E+02	0	7.7E-03
	1,2-Dibromo-3-chloropropane	µg/kg	215	0	0	1.1E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	5.3E-02	0	9.5E+01
	Dibromochloromethane	µg/kg	215	0	0	5.9E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	6.0E+00	0	8.3E-01
	1,2-Dibromoethane	µg/kg	214	0	0	1.3E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	1.8E-01	0	2.8E+01
	Dibromomethane	µg/kg	215	0	0	8.3E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	1.9E+02	0	2.6E-02
	1,2-Dichlorobenzene	µg/kg	215	5	2	6.1E-02	5.0E+00	2.6E-01	ND	3.6E-01	3.9E-01	5.5E-02	1.5E-01	ND	3.7E+02	0	1.3E-02
	1,3-Dichlorobenzene	µg/kg	215	0	0	6.6E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	3.7E+02	0	1.3E-02
	1,4-Dichlorobenzene	**µg/kg**	**215**	**4**	**2**	**6.8E-02**	**5.0E+00**	**5.6E-01**	**ND**	**4.7E+00**	**1.6E+01**	**7.5E+00**	**1.6E+00**	**ND**	**1.4E+01**	**0**	**1.2E+00**
	Dichlorodifluoromethane	µg/kg	215	0	0	1.3E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	3.4E+02	0	1.5E-02
	1,1-Dichloroethane	µg/kg	215	1	0	3.5E-02	5.0E+00	3.0E+00	ND	3.0E+00	3.0E+00	NA	NA	ND	2.1E+01	0	2.3E-01
	1,2-Dichloroethane	µg/kg	215	0	0	3.3E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.2E+00	0	2.2E+00
	1,1-Dichloroethene	µg/kg	215	3	1	6.0E-02	5.0E+00	7.1E-01	ND	9.1E-01	1.2E+00	2.6E-01	2.8E-01	ND	1.3E+03	0	3.9E-03
	1,2-Dichloroethene (total)	µg/kg	1	0	0	5.4E-02	5.4E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	cis-1,2-Dichloroethene	µg/kg	215	0	0	2.7E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	7.4E+02	0	6.8E-03
	trans-1,2-Dichloroethene	µg/kg	215	0	0	4.5E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	5.5E+02	0	9.1E-03
	1,2-Dichloropropane	µg/kg	215	0	0	5.5E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	4.3E+00	0	1.2E+00
	1,3-Dichloropropane	µg/kg	215	0	0	2.6E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	6.5E+01	0	7.7E-02
	2,2-Dichloropropane	µg/kg	215	0	0	1.1E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,1-Dichloropropene	µg/kg	215	0	0	4.4E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	cis-1,3-Dichloropropene	µg/kg	215	0	0	5.0E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	trans-1,3-Dichloropropene	µg/kg	215	0	0	5.0E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	2,2-Dimethylpentane	µg/kg	1	0	0	1.4E-01	1.4E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	2,3-Dimethylpentane	µg/kg	1	0	0	1.1E-01	1.1E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	2,4-Dimethylpentane	µg/kg	1	0	0	9.7E-02	9.7E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	3,3-Dimethylpentane	µg/kg	1	0	0	1.0E-01	1.0E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,4-Dioxane	µg/kg	447	0	0	1.7E+01	3.6E+03	ND	ND	ND	ND	ND	NA	ND	1.9E+01	0	1.8E+02
	Ethanol	µg/kg	7	0	0	2.4E+01	3.0E+04	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	3.0E-01
	Ethyl tert-butyl ether	µg/kg	214	1	0	1.1E+00	5.0E+00	3.8E-01	ND	3.8E-01	3.8E-01	NA	NA	ND	--	0	--
	Ethyl Benzene	µg/kg	192	0	0	2.9E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.0E+01	0	2.6E-01
	Ethylene Glycol	µg/kg	6	0	0	2.7E+04	3.0E+04	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	3.0E-01
	n-Heptane	µg/kg	1	0	0	8.2E-02	8.2E-02	ND	ND	ND	ND	ND	NA	ND	2.2E+02	0	3.7E-04
	2-Hexanone	µg/kg	215	0	0	1.2E-01	1.0E+01	ND	ND	ND	ND	ND	NA	ND	1.9E+03	0	5.2E-03
	Iodomethane	µg/kg	1	0	0	6.2E-02	6.2E-02	ND	ND	ND	ND	ND	NA	ND	1.5E+03	0	4.1E-05
	Methanol	µg/kg	6	0	0	2.7E+04	3.0E+04	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	3.0E-01
	Methyl tert-butyl ether	µg/kg	215	0	0	4.5E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.1E+02	0	2.4E-02
	4-Methyl-2-pentanone	µg/kg	215	0	0	1.4E-01	1.0E+01	ND	ND	ND	ND	ND	NA	ND	1.7E+04	0	5.8E-04
	Methylene Chloride	µg/kg	215	65	30	3.4E-01	5.0E+00	3.4E-01	ND	1.7E+00	8.2E+00	1.3E+00	7.7E-01	ND	5.9E+01	0	1.4E-01
	2-Methylhexane	µg/kg	1	0	0	1.0E-01	1.0E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	2-Nitropropane	µg/kg	1	0	0	3.0E-01	3.0E-01	ND	ND	ND	ND	ND	NA	ND	5.9E-02	0	5.1E+00
	n-Nonyl Aldehyde	µg/kg	1	0	0	2.3E-01	2.3E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Diisopropyl ether	µg/kg	214	0	0	7.0E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	n-Propylbenzene	µg/kg	215	0	0	5.5E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.4E+02	0	2.1E-02
	Styrene	µg/kg	215	1	0	8.7E-02	5.0E+00	2.8E-01	ND	2.8E-01	2.8E-01	NA	NA	ND	1.7E+03	0	2.9E-03
	tert Butyl alcohol	µg/kg	214	1	0	2.6E+00	1.0E+02	7.6E+00	ND	7.6E+00	7.6E+00	NA	NA	ND	2.1E+04	0	4.7E-03
	1,1,1,2-Tetrachloroethane	µg/kg	215	0	0	8.9E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.0E+01	0	2.5E-01
	1,1,2,2-Tetrachloroethane	µg/kg	215	0	0	3.9E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.5E+00	0	2.0E+00

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
VOCs	Tetrachloroethene	µg/kg	215	3	1	4.4E-02	5.0E+00	6.8E-01	ND	9.7E-01	1.5E+00	4.6E-01	4.7E-01	ND	3.3E+00	0	1.5E+00
	Toluene	µg/kg	215	53	25	1.6E-01	5.0E+00	2.3E-01	ND	8.5E-01	2.2E+00	4.0E-01	4.7E-01	ND	5.2E+02	0	9.6E-03
	1,2,3-Trichlorobenzene	µg/kg	215	2	1	1.9E-01	5.0E+00	8.1E-01	ND	1.1E+00	1.3E+00	3.5E-01	3.3E-01	ND	--	0	--
	1,2,4-Trichlorobenzene	µg/kg	215	5	2	1.7E-01	5.0E+00	6.5E-01	ND	1.5E+00	3.7E+00	1.3E+00	8.4E-01	ND	1.1E+02	0	4.5E-02
	1,3,5-Trichlorobenzene	µg/kg	1	0	0	1.9E-01	1.9E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,1,1-Trichloroethane	µg/kg	215	1	0	5.3E-02	5.0E+00	9.5E-01	ND	9.5E-01	9.5E-01	NA	NA	ND	1.4E+03	0	3.6E-03
	1,1,2-Trichloroethane	µg/kg	215	0	0	3.4E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	5.5E+00	0	9.1E-01
	Trichloroethene	µg/kg	215	2	1	5.2E-02	5.0E+00	4.2E-01	ND	4.6E-01	5.0E-01	5.7E-02	1.2E-01	ND	5.5E+00	0	9.1E-01
	Trichlorofluoromethane	µg/kg	215	5	2	1.1E-01	5.0E+00	3.5E-01	ND	1.3E+00	1.7E+00	5.7E-01	4.4E-01	ND	2.0E+03	0	2.5E-03
	1,2,3-Trichloropropane	µg/kg	215	0	0	1.3E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	1.1E-01	0	4.7E+01
	1,1,2-Trichloro-1,2,2-trifluoroethane	µg/kg	1	0	0	7.3E-02	7.3E-02	ND	ND	ND	ND	ND	NA	ND	5.6E+03	0	1.3E-05
	1,2,4-Trimethylbenzene	µg/kg	215	2	1	6.7E-02	5.0E+00	8.6E-01	ND	9.1E-01	9.5E-01	6.4E-02	7.0E-02	ND	6.0E+02	0	8.3E-03
	1,3,5-Trimethylbenzene	µg/kg	215	0	0	4.9E-02	5.0E+00	ND	ND	ND	ND	ND	NA	ND	2.5E+02	0	2.0E-02
	2,2,3-Trimethylbutane	µg/kg	1	0	0	1.1E-01	1.1E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Vinyl Acetate	µg/kg	1	0	0	1.2E-01	1.2E-01	ND	ND	ND	ND	ND	NA	ND	2.7E+03	0	4.4E-05
	Vinyl Chloride	µg/kg	215	1	0	5.6E-02	5.0E+00	2.8E-01	ND	2.8E-01	2.8E-01	NA	NA	ND	1.9E+00	0	2.7E+00
	m,p-xylene	µg/kg	191	4	2	8.3E-02	5.0E+00	9.3E-01	ND	1.2E+00	1.5E+00	2.4E-01	2.0E-01	ND	--	0	--
	ortho-xylene	µg/kg	191	1	1	3.8E-02	5.0E+00	4.6E-01	ND	4.6E-01	4.6E-01	NA	NA	ND	2.8E+02	0	1.8E-02
	Xylenes (total)	µg/kg	25	0	0	1.2E-01	6.5E+00	ND	ND	ND	ND	ND	NA	ND	2.1E+02	0	3.0E-02
SVOCs	Acetophenone	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.7E+03	0	9.6E-03
	t-Amyl methyl ether	µg/kg	214	0	0	3.9E-01	5.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Aniline	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	3.4E+02	0	5.0E-02
	Benzoic Acid	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	1.7E-04
	Benzyl Alcohol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	1.7E-04
	bis(2-Chloroethoxy)methane	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	bis(2-Chloroethyl) ether	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.3E+00	0	1.3E+01
	bis(2-Ethylhexyl)phthalate	**µg/kg**	**449**	**96**	**21**	**1.7E+01**	**2.5E+03**	**5.8E+01**	**ND**	**8.1E+02**	**6.1E+04**	**6.2E+03**	**7.7E+00**	**ND**	**1.4E+02**	**0**	**4.5E+02**
	4-Bromophenyl-phenyl ether	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Butylbenzylphthalate	µg/kg	449	6	1	1.7E+01	2.3E+03	3.3E+00	ND	1.9E+01	5.3E+01	1.9E+01	1.0E+00	ND	2.4E+02	0	9.6E+00
	Carbazole	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	9.6E+01	0	1.7E-01
	4-Chloro-3-methylphenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	4-Chloroaniline	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	9.6E+00	0	1.7E+00
	2-Chloronaphthalene	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	3.5E+02	0	4.7E-02
	2-Chlorophenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.7E+03	0	1.0E-02
	4-Chlorophenyl-phenyl ether	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	3,3'-Dichlorobenzidine	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	4.3E+00	0	3.9E+00
	2,4-Dichlorophenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	2.1E+03	0	8.1E-03
	Diethylphthalate	µg/kg	449	5	1	1.2E+01	1.4E+03	4.2E+01	ND	1.1E+02	3.5E+02	1.3E+02	1.2E+00	ND	1.0E+05	0	1.4E-02
	Dimethoate	µg/kg	40	3	8	1.1E+01	1.3E+01	1.1E+01	ND	1.2E+01	1.3E+01	1.0E+00	8.3E-02	ND	--	0	--
	2,4-Dimethylphenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.4E+04	0	1.2E-03
	Dimethylphthalate	µg/kg	449	53	12	1.1E+01	1.4E+03	1.5E+00	ND	1.2E+02	7.9E+02	1.7E+02	1.4E+00	ND	1.0E+05	0	1.4E-02
	Di-n-butylphthalate	µg/kg	449	30	7	1.4E+01	1.6E+03	3.5E+01	ND	6.4E+02	7.5E+03	1.5E+03	2.3E+00	ND	6.8E+04	0	1.1E-01
	2,4-Dinitrophenol	µg/kg	1	0	0	1.7E+02	1.7E+02	ND	ND	ND	ND	ND	NA	ND	1.4E+03	0	1.2E-01
	2,4-Dinitrotoluene	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	6.2E+00	0	2.7E+00
	2,6-Dinitrotoluene	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	6.8E+02	0	2.4E-02
	Di-n-octylphthalate	µg/kg	449	3	1	6.5E+00	1.4E+03	7.0E+01	ND	8.1E+01	8.8E+01	9.5E+00	1.2E-01	ND	--	0	--
	1,2-Diphenylhydrazine	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	2.4E+00	0	7.0E+00
	Disulfoton	µg/kg	40	0	0	2.4E+01	3.1E+01	ND	ND	ND	ND	ND	NA	ND	2.7E+01	0	1.1E+00
	Famphur	µg/kg	40	0	0	6.5E+00	8.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Formaldehyde	µg/kg	3	0	0	1.1E+02	1.1E+02	ND	ND	ND	ND	ND	NA	ND	6.7E+04	0	1.6E-03
	Hexachlorobutadiene	µg/kg	215	5	2	1.4E-01	1.7E+01	9.5E-01	ND	2.2E+00	4.5E+00	1.4E+00	6.4E-01	ND	2.5E+01	0	6.8E-01
	Hexachlorocyclopentadiene	µg/kg	1	0	0	1.7E+02	1.7E+02	ND	ND	ND	ND	ND	NA	ND	4.1E+03	0	4.0E-02
	Hexachloroethane	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.4E+02	0	1.2E-01
	Isophorone	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	2.0E+03	0	8.2E-03
	Methyl parathion	µg/kg	40	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	1.7E+02	0	7.6E-02
	1-Methylnaphthalene	µg/kg	7	3	43	1.3E-01	2.5E-01	6.2E-01	ND	1.7E+00	3.3E+00	1.4E+00	8.5E-01	ND	--	0	--
	2-Methylnaphthalene	µg/kg	464	7	2	1.6E-01	1.0E+03	7.7E-01	ND	8.7E+00	3.0E+01	1.0E+01	1.2E+00	ND	--	0	--
	2-Methylphenol	µg/kg	1	0	0	5.9E+01	5.9E+01	ND	ND	ND	ND	ND	NA	ND	3.4E+04	0	1.7E-03
	3&4-Methylphenol	µg/kg	1	0	0	3.3E+01	3.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	2-Nitroaniline	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	2.1E+03	0	8.1E-03
	3-Nitroaniline	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	4-Nitroaniline	µg/kg	1	0	0	1.7E+02	1.7E+02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Nitrobenzene	µg/kg	449	0	0	3.4E+00	1.2E+03	ND	ND	ND	ND	ND	NA	ND	1.4E+01	0	8.8E+01
	2-Nitrophenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	4-Nitrophenol	µg/kg	1	0	0	1.7E+02	1.7E+02	ND	ND	ND	ND	ND	NA	ND	5.5E+03	0	3.0E-02
	N-Nitrosodiphenylamine	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	3.9E+02	0	4.3E-02
	N-Nitroso-di-n-propylamine	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	2.7E-01	0	6.1E+01
	2,2'-oxybis(1-Chloropropane)	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.8E+01	0	9.3E-01
	Parathion	µg/kg	40	0	0	9.0E+00	1.2E+01	ND	ND	ND	ND	ND	NA	ND	4.1E+03	0	2.8E-03

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
SVOCs	Pentachlorobenzene	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	5.5E+02	0	3.0E-02
	Pentachlorophenol	µg/kg	1	0	0	1.7E+02	1.7E+02	ND	ND	ND	ND	ND	NA	ND	3.0E+00	0	5.5E+01
	Phenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	1.7E-04
	Phorate	µg/kg	40	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Sulfotepp	µg/kg	40	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,2,4,5-Tetrachlorobenzene	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	2.1E+02	0	8.1E-02
	Thionazin	µg/kg	40	0	0	9.0E+00	1.2E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	2,4,5-Trichlorophenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	6.8E+04	0	2.4E-04
	2,4,6-Trichlorophenol	µg/kg	1	0	0	1.7E+01	1.7E+01	ND	ND	ND	ND	ND	NA	ND	1.7E+02	0	9.6E-02
PAHs	Acenaphthene	µg/kg	464	4	1	8.0E-02	5.5E+02	6.2E-01	ND	1.2E+01	2.6E+01	1.2E+01	1.0E+00	ND	2.4E+03	0	2.3E-01
	Acenaphthylene	µg/kg	464	5	1	8.5E-02	9.0E+02	6.6E-01	ND	1.4E+00	2.4E+00	6.4E-01	4.5E-01	ND	1.5E+02	0	6.1E+00
	Anthracene	µg/kg	464	13	3	3.4E-01	9.0E+02	5.5E-01	ND	6.9E+00	2.4E+01	8.3E+00	1.2E+00	ND	9.1E+03	0	9.9E-02
	Benzo(a)anthracene	**µg/kg**	**464**	**54**	**12**	**4.5E-01**	**1.1E+03**	**7.2E-01**	**ND**	**3.1E+01**	**3.4E+02**	**5.7E+01**	**1.8E+00**	**ND**	**2.3E+00**	**0**	**4.5E+02**
	Benzo(a)pyrene	**µg/kg**	**463**	**34**	**7**	**3.7E-01**	**1.1E+03**	**3.2E+00**	**ND**	**4.1E+01**	**2.3E+02**	**5.1E+01**	**1.2E+00**	**ND**	**2.3E-01**	**1**	**4.5E+03**
	Benzo(a)pyrene TEQ	µg/kg	44	44	100	--	--	8.9E-01	ND	4.9E+01	4.3E+02	1.0E+02	2.1E+00	ND	--	0	--
	Benzo(b)fluoranthene	**µg/kg**	**463**	**44**	**10**	**6.0E-01**	**1.4E+03**	**1.4E+00**	**ND**	**5.6E+01**	**2.5E+02**	**6.7E+01**	**1.2E+00**	**ND**	**2.3E+00**	**0**	**6.0E+02**
	Benzo(g,h,i)perylene	µg/kg	463	48	10	5.5E-01	8.5E+02	1.4E+00	ND	3.5E+01	3.8E+02	6.2E+01	1.7E+00	ND	3.4E+04	0	2.5E-02
	Benzo(k)fluoranthene	**µg/kg**	**463**	**29**	**6**	**5.0E-01**	**2.2E+03**	**1.7E+00**	**ND**	**2.4E+01**	**1.4E+02**	**3.6E+01**	**1.5E+00**	**ND**	**2.3E+01**	**0**	**9.2E+01**
	Chrysene	**µg/kg**	**464**	**75**	**16**	**5.0E-01**	**1.5E+03**	**1.0E+00**	**ND**	**5.0E+01**	**7.9E+02**	**1.0E+02**	**2.1E+00**	**ND**	**2.3E+02**	**0**	**6.2E+00**
	Dibenz(a,h)anthracene	**µg/kg**	**462**	**13**	**3**	**6.5E-01**	**1.0E+03**	**1.8E+00**	**ND**	**3.0E+01**	**1.2E+02**	**3.8E+01**	**1.3E+00**	**ND**	**2.3E-01**	**1**	**4.3E+03**
	Fluoranthene	µg/kg	464	64	14	5.0E-01	2.0E+03	1.7E+00	ND	3.7E+01	3.5E+02	6.4E+01	1.8E+00	ND	2.4E+04	0	8.0E-02
	Fluorene	µg/kg	464	2	0	2.4E-01	9.5E+02	5.2E-01	ND	7.6E-01	1.0E+00	3.4E-01	4.5E-01	ND	3.4E+03	0	2.8E-01
	Hexachlorobenzene	**µg/kg**	**855**	**481**	**56**	**1.4E-01**	**1.6E+03**	**3.2E-01**	**ND**	**2.0E+02**	**4.7E+03**	**4.0E+02**	**2.1E+00**	**ND**	**1.2E+00**	**8**	**3.9E+03**
	Indeno(1,2,3-cd)pyrene	**µg/kg**	**463**	**37**	**8**	**5.5E-01**	**1.2E+03**	**1.0E+00**	**ND**	**2.3E+01**	**1.1E+02**	**2.8E+01**	**1.2E+00**	**ND**	**2.3E+00**	**0**	**5.1E+02**
	Naphthalene	µg/kg	678	25	4	1.6E-01	1.7E+03	4.0E-01	ND	2.2E+00	1.5E+01	3.0E+00	1.4E+00	ND	1.6E+01	0	1.1E+02
	Phenanthrene	**µg/kg**	**464**	**60**	**13**	**5.5E-01**	**9.0E+02**	**1.7E+00**	**ND**	**3.6E+01**	**1.0E+03**	**1.3E+02**	**3.7E+00**	**ND**	**2.5E+01**	**0**	**4.1E+01**
	Pyrene	µg/kg	464	88	19	5.5E-01	6.5E+02	1.1E+00	ND	3.6E+01	2.7E+02	5.7E+01	1.6E+00	ND	1.9E+04	0	3.4E-02
	Pyridine	µg/kg	449	0	0	1.7E+01	7.0E+03	ND	ND	ND	ND	ND	NA	ND	6.7E+02	0	1.0E+01
Herbicides	2,4,5-TP	µg/kg	2	0	0	1.1E+01	1.2E+01	ND	ND	ND	ND	ND	NA	ND	5.5E+03	0	2.1E-03
Organochlorine Pesticides	**Aldrin**	**µg/kg**	**250**	**2**	**1**	**4.8E-02**	**4.6E+01**	**4.9E-01**	**ND**	**5.1E-01**	**5.2E-01**	**2.1E-02**	**4.2E-02**	**ND**	**1.1E-01**	**0**	**4.1E+02**
	alpha-BHC	µg/kg	250	11	4	1.1E-01	4.6E+01	2.4E-01	ND	7.2E-01	2.5E+00	6.7E-01	9.3E-01	ND	2.7E+02	0	1.7E-01
	beta-BHC	**µg/kg**	**250**	**146**	**58**	**3.2E-01**	**7.5E+01**	**7.2E-01**	**ND**	**3.9E+01**	**8.7E+02**	**9.8E+01**	**2.5E+00**	**ND**	**5.4E+01**	**0**	**1.6E+01**
	delta-BHC	µg/kg	250	7	3	8.4E-02	4.6E+01	4.8E-01	ND	7.9E-01	1.5E+00	3.8E-01	4.8E-01	ND	2.7E+02	0	1.7E-01
	gamma-BHC	µg/kg	250	2	1	6.2E-02	5.5E+01	8.3E-01	ND	1.1E+00	1.3E+00	3.3E-01	3.1E-01	ND	9.0E+00	0	6.1E+00
	Chlordane (total)	µg/kg	241	1	0	1.1E-01	2.3E+02	3.0E+00	ND	3.0E+00	3.0E+00	NA	NA	ND	7.2E+00	0	3.1E+01
	alpha-Chlordane	µg/kg	250	0	0	1.1E-01	4.6E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	gamma-Chlordane	µg/kg	250	1	0	1.3E-01	4.6E+01	2.4E+00	ND	2.4E+00	2.4E+00	NA	NA	ND	--	0	--
	2,4'-DDD	µg/kg	1	0	0	1.5E-01	1.5E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	4,4'-DDD	**µg/kg**	**250**	**9**	**4**	**4.5E-02**	**9.0E+01**	**1.4E+00**	**ND**	**8.5E+00**	**3.2E+01**	**9.6E+00**	**1.1E+00**	**ND**	**1.1E+01**	**0**	**8.1E+00**
	2,4'-DDE	µg/kg	1	1	100	--	--	9.7E+00	ND	9.7E+00	NA	NA	NA	ND	--	0	--
	4,4'-DDE	**µg/kg**	**250**	**135**	**54**	**1.2E-01**	**9.0E+01**	**4.0E-01**	**ND**	**2.9E+02**	**6.0E+03**	**8.7E+02**	**3.0E+00**	**ND**	**7.8E+00**	**0**	**7.7E+02**
	4,4'-DDT	**µg/kg**	**250**	**102**	**41**	**2.9E-01**	**9.0E+01**	**6.6E-01**	**ND**	**1.1E+02**	**2.3E+03**	**2.9E+02**	**2.6E+00**	**ND**	**7.8E+00**	**0**	**2.9E+02**
	Dieldrin	**µg/kg**	**250**	**4**	**2**	**4.6E-02**	**9.0E+01**	**2.7E-01**	**ND**	**2.3E+01**	**5.9E+01**	**2.8E+01**	**1.2E+00**	**ND**	**1.2E-01**	**0**	**7.5E+02**
	Endosulfan I	µg/kg	250	2	1	5.3E-02	4.6E+01	2.4E-01	ND	8.7E-01	1.5E+00	8.9E-01	1.0E+00	ND	--	0	--
	Endosulfan II	µg/kg	250	0	0	4.7E-02	9.0E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Endosulfan sulfate	µg/kg	250	2	1	1.3E-01	9.0E+01	4.2E+00	ND	1.0E+01	1.6E+01	8.3E+00	8.3E-01	ND	--	0	--
	Endrin	µg/kg	250	2	1	4.2E-02	9.0E+01	7.0E-01	ND	3.1E+00	5.4E+00	3.3E+00	1.1E+00	ND	2.1E+02	0	4.4E-01
	Endrin aldehyde	µg/kg	250	0	0	8.0E-02	9.0E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Endrin ketone	µg/kg	250	9	4	8.2E-02	9.0E+01	6.1E-01	ND	3.7E+00	2.0E+01	6.3E+00	1.7E+00	ND	--	0	--
	Heptachlor	µg/kg	249	0	0	8.6E-02	4.6E+01	ND	ND	ND	ND	NA	NA	ND	4.3E-01	0	1.1E+02
	Heptachlor epoxide	**µg/kg**	**250**	**1**	**0**	**6.6E-02**	**4.9E+01**	**3.7E+01**	**ND**	**3.7E+01**	**3.7E+01**	**NA**	**NA**	**ND**	**2.1E-01**	**0**	**2.3E+02**
	Methoxychlor	µg/kg	250	15	6	1.6E-01	4.6E+02	5.0E-01	ND	6.8E+01	3.8E+02	1.3E+02	1.8E+00	ND	3.4E+03	0	1.3E-01
	Octachlorostyrene	µg/kg	447	79	18	3.4E+00	3.1E+03	2.1E+00	ND	1.1E+02	2.1E+03	2.5E+02	2.3E+00	ND	--	0	--
	Toxaphene	**µg/kg**	**250**	**1**	**0**	**2.9E+00**	**1.8E+03**	**6.2E+02**	**ND**	**6.2E+02**	**6.2E+02**	**NA**	**NA**	**ND**	**1.7E+00**	**2**	**1.0E+03**
Organophosphorus Pesticides	Azinphos-methyl	µg/kg	40	0	0	6.5E+00	8.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Chlorpyrifos	µg/kg	40	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	2.1E+03	0	6.3E-03
	Coumaphos	µg/kg	40	0	0	6.5E+00	8.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Dichlorovos	µg/kg	40	0	0	1.2E+01	1.5E+01	ND	ND	ND	ND	ND	NA	ND	6.6E+00	0	2.3E+00
	Demeton-O	µg/kg	40	0	0	2.0E+01	2.5E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Demeton-S	µg/kg	40	0	0	7.5E+00	9.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Diazinon	µg/kg	40	0	0	1.1E+01	1.4E+01	ND	ND	ND	ND	ND	NA	ND	6.2E+02	0	2.3E-02
	Ethyl p-nitrophenyl phenylphosphorothioate (EPN)	µg/kg	40	0	0	6.5E+00	8.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Fensulfothion	µg/kg	40	0	0	7.0E+00	1.4E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Fenthion	µg/kg	40	0	0	1.7E+01	2.2E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Malathion	µg/kg	40	0	0	7.5E+00	9.5E+00	ND	ND	ND	ND	ND	NA	ND	1.4E+04	0	6.9E-04
	Merphos	µg/kg	40	0	0	1.5E+01	2.0E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Naled	µg/kg	40	0	0	1.7E+01	4.0E+01	ND	ND	ND	ND	ND	NA	ND	1.4E+03	0	2.9E-02
	Prothiophos	µg/kg	40	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Ronnel	µg/kg	40	0	0	9.5E+00	2.6E+01	ND	ND	ND	ND	ND	NA	ND	3.4E+04	0	7.6E-04

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Organophosphorus Pesticides	Stirphos	µg/kg	40	1	3	7.5E+00	9.5E+00	4.1E+01	ND	4.1E+01	4.1E+01	NA	NA	ND	--	0	--
	Sulprofos	µg/kg	40	0	0	6.5E+00	8.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
Organic Acids	Benzenesulfonic Acid	µg/kg	25	0	0	2.5E+02	2.5E+02	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	2.5E-03
Polychlorinated Biphenyls	**PCBs (total)**	**µg/kg**	**9**	**9**	**100**	**--**	**--**	**2.2E+00**	**ND**	**2.2E+01**	**1.3E+02**	**4.0E+01**	**1.9E+00**	**ND**	**8.3E-01**	**0**	**1.5E+02**
	PCB TEQ (total)	µg/kg	2	2	100	--	--	8.8E-07	ND	2.5E-04	5.0E-04	3.5E-04	1.4E+00	ND	--	0	--
	Aroclor-1016	µg/kg	51	0	0	2.5E+00	1.9E+02	ND	ND	ND	ND	ND	NA	ND	2.4E+01	0	7.8E+00
	Aroclor-1221	µg/kg	51	0	0	2.5E+00	3.7E+02	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	4.5E+02
	Aroclor-1232	µg/kg	51	0	0	2.5E+00	1.9E+02	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	2.2E+02
	Aroclor-1242	µg/kg	51	0	0	2.5E+00	1.9E+02	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	2.2E+02
	Aroclor-1248	**µg/kg**	**51**	**1**	**2**	**2.5E+00**	**1.9E+02**	**9.1E+01**	**ND**	**9.1E+01**	**9.1E+01**	**NA**	**NA**	**ND**	**8.3E-01**	**0**	**2.2E+02**
	Aroclor-1254	µg/kg	51	0	0	1.3E+00	1.9E+02	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	2.2E+02
	Aroclor-1260	**µg/kg**	**51**	**1**	**2**	**1.3E+00**	**1.9E+02**	**3.4E+01**	**ND**	**3.4E+01**	**3.4E+01**	**NA**	**NA**	**ND**	**8.3E-01**	**0**	**2.2E+02**
	Monochlorobiphenyl	µg/kg	9	5	56	9.9E-03	2.0E-02	1.0E-02	ND	8.2E-02	3.0E-01	1.2E-01	1.5E+00	ND	--	0	--
	PCB-001 (2-CB)	µg/kg	11	8	73	9.9E-03	2.0E-02	5.8E-03	ND	3.1E-02	1.4E-01	4.5E-02	1.4E+00	ND	--	0	--
	PCB-002 (3-CB)	µg/kg	11	4	36	5.0E-04	1.1E-02	3.3E-03	ND	2.5E-02	6.4E-02	2.7E-02	1.1E+00	ND	--	0	--
	PCB-003 (4-CB)	µg/kg	11	4	36	9.9E-03	2.3E-02	2.9E-03	ND	3.2E-02	9.7E-02	4.3E-02	1.4E+00	ND	--	0	--
	PCB-209 (DeCB)	µg/kg	11	8	73	4.5E-02	5.9E-02	2.8E-02	ND	2.6E+00	8.3E+00	3.1E+00	1.2E+00	ND	--	0	--
	Dichlorobiphenyl (total)	µg/kg	9	2	22	2.5E-02	5.9E-02	6.3E-01	ND	1.2E+00	1.8E+00	7.9E-01	6.7E-01	ND	--	0	--
	PCB-004 (2,2'-DiCB)	µg/kg	11	2	18	1.1E-02	5.9E-02	4.8E-03	ND	1.8E-01	3.6E-01	2.5E-01	1.4E+00	ND	--	0	--
	PCB-005 (2,3-DiCB)	µg/kg	11	2	18	2.5E-03	1.1E-02	2.2E-02	ND	3.0E-02	3.8E-02	1.1E-02	3.8E-01	ND	--	0	--
	PCB-006 (2,3'-DiCB)	µg/kg	11	4	36	2.5E-03	1.1E-02	9.1E-03	ND	1.0E-01	1.8E-01	7.8E-02	7.7E-01	ND	--	0	--
	PCB-007 (2,4-DiCB)	µg/kg	11	1	9	2.5E-03	1.1E-02	1.5E-02	ND	1.5E-02	1.5E-02	NA	NA	ND	--	0	--
	PCB-008 (2,4'-DiCB)	µg/kg	11	6	55	1.1E-02	5.9E-02	1.1E-02	ND	7.8E-02	2.7E-01	9.7E-02	1.2E+00	ND	--	0	--
	PCB-009 (2,5-DiCB)	µg/kg	11	2	18	2.5E-03	1.1E-02	1.2E-01	ND	1.3E-01	1.3E-01	7.8E-03	6.2E-02	ND	--	0	--
	PCB-010 (2,6-DiCB)	µg/kg	11	1	9	2.5E-03	1.1E-02	4.8E-03	ND	4.8E-03	4.8E-03	NA	NA	ND	--	0	--
	PCB-011 (3,3'-DiCB)	µg/kg	11	1	9	1.1E-02	3.6E-01	6.0E-01	ND	6.0E-01	6.0E-01	NA	NA	ND	--	0	--
	PCB-012 (3,4-DiCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.3E-02	ND	1.3E-02	1.3E-02	NA	NA	ND	--	0	--
	PCB-013 (3,4'-DiCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.3E-02	ND	1.3E-02	1.3E-02	NA	NA	ND	--	0	--
	PCB-014 (3,5-DiCB)	µg/kg	11	0	0	5.0E-03	1.2E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-015 (4,4'-DiCB)	µg/kg	11	5	45	1.1E-02	5.9E-02	1.1E-02	ND	1.6E-01	4.1E-01	1.6E-01	1.1E+00	ND	--	0	--
	Heptachlorobiphenyl	µg/kg	9	6	67	9.1E-02	1.2E-01	8.7E-01	ND	3.0E+00	1.2E+01	4.3E+00	1.4E+00	ND	--	0	--
	PCB-170 (2,2',3,3',4,4',5-HpCB)	µg/kg	11	11	100	--	--	9.4E-03	ND	2.7E-01	1.8E+00	5.2E-01	2.0E+00	ND	--	0	--
	PCB-171 (2,2',3,3',4,4',6-HpCB)	µg/kg	2	2	100	--	--	9.6E-03	ND	4.5E-02	8.1E-02	5.0E-02	1.1E+00	ND	--	0	--
	PCB-172 (2,2',3,3',4,5,5'-HpCB)	µg/kg	11	9	82	9.1E-02	9.5E-02	4.3E-03	ND	6.2E-02	3.4E-01	1.1E-01	1.7E+00	ND	--	0	--
	PCB-173 (2,2',3,3',4,5,6-HpCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	5.7E-03	ND	5.7E-03	5.7E-03	NA	NA	ND	--	0	--
	PCB-174 (2,2',3,3',4,5,6'-HpCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	2.7E-02	ND	2.9E-01	1.2E+00	4.0E-01	1.4E+00	ND	--	0	--
	PCB-175 (2,2',3,3',4,5',6-HpCB)	µg/kg	11	7	64	1.1E-02	1.2E-01	9.2E-03	ND	2.9E-02	1.1E-01	3.7E-02	1.3E+00	ND	--	0	--
	PCB-177 (2,2',3,3',4,5',6'-HpCB)	µg/kg	11	8	73	4.5E-02	5.9E-02	1.8E-02	ND	1.6E-01	7.4E-01	2.4E-01	1.5E+00	ND	--	0	--
	PCB-176 (2,2',3,3',4,6,6'-HpCB)	µg/kg	11	11	100	--	--	2.4E-03	ND	3.3E-02	2.0E-01	5.7E-02	1.7E+00	ND	--	0	--
	PCB-178 (2,2',3,3',5,5',6-HpCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	5.2E-03	ND	7.0E-02	2.7E-01	9.2E-02	1.3E+00	ND	--	0	--
	PCB-179 (2,2',3,3',5,6,6'-HpCB)	µg/kg	11	6	55	4.5E-02	5.9E-02	1.1E-02	ND	1.3E-01	4.4E-01	1.6E-01	1.3E+00	ND	--	0	--
	PCB-180 (2,2',3,4,4',5,5'-HpCB)	µg/kg	2	2	100	--	--	7.2E-02	ND	3.8E-01	6.9E-01	4.4E-01	1.1E+00	ND	--	0	--
	PCB-181 (2,2',3,4,4',5,6-HpCB)	µg/kg	11	4	36	1.1E-02	1.2E-01	4.1E-03	ND	1.5E-02	4.5E-02	2.0E-02	1.4E+00	ND	--	0	--
	PCB-182 (2,2',3,4,4',5,6'-HpCB)	µg/kg	11	8	73	9.1E-02	1.2E-01	4.1E-03	ND	3.9E-02	2.2E-01	7.4E-02	1.9E+00	ND	--	0	--
	PCB-183 (2,2',3,4,4',5',6-HpCB)	µg/kg	11	8	73	9.1E-02	1.2E-01	2.0E-02	ND	1.4E-01	3.9E-01	1.3E-01	9.2E-01	ND	--	0	--
	PCB-184 (2,2',3,4,4',6,6'-HpCB)	µg/kg	11	7	64	1.1E-02	1.2E-01	3.8E-03	ND	1.3E-02	4.3E-02	1.4E-02	1.1E+00	ND	--	0	--
	PCB-185 (2,2',3,4,5,5',6-HpCB)	µg/kg	11	4	36	5.0E-02	1.2E-01	3.9E-03	ND	1.3E-02	2.9E-02	1.1E-02	8.4E-01	ND	--	0	--
	PCB-186 (2,2',3,4,5,6,6'-HpCB)	µg/kg	11	3	27	1.1E-02	1.2E-01	1.3E-03	ND	3.3E-03	7.1E-03	3.3E-03	1.0E+00	ND	--	0	--
	PCB-187 (2,2',3,4',5,5',6-HpCB)	µg/kg	11	6	55	4.5E-02	5.9E-02	2.6E-02	ND	3.9E-01	1.4E+00	5.1E-01	1.3E+00	ND	--	0	--
	PCB-188 (2,2',3,4',5,6,6'-HpCB)	µg/kg	11	6	55	1.1E-02	5.9E-02	2.1E-03	ND	9.1E-03	2.8E-02	9.9E-03	1.1E+00	ND	--	0	--
	PCB-189 (2,3,3',4,4',5,5'-HpCB)	µg/kg	11	6	55	1.1E-03	5.9E-02	6.8E-03	ND	5.8E-02	2.5E-01	9.6E-02	1.6E+00	ND	--	0	--
	PCB-190 (2,3,3',4,4',5,6-HpCB)	µg/kg	11	10	91	4.7E-02	4.7E-02	1.6E-03	ND	8.6E-02	3.6E-01	1.3E-01	1.6E+00	ND	--	0	--
	PCB-191 (2,3,3',4,4',5',6-HpCB)	µg/kg	11	7	64	1.1E-02	1.2E-01	5.0E-03	ND	2.1E-02	9.6E-02	3.3E-02	1.6E+00	ND	--	0	--
	PCB-192 (2,3,3',4,5,5',6-HpCB)	µg/kg	11	7	64	9.1E-02	1.2E-01	2.0E-03	ND	1.4E-02	5.2E-02	1.8E-02	1.3E+00	ND	--	0	--
	PCB-193 (2,3,3',4',5,5',6-HpCB)	µg/kg	2	2	100	--	--	3.1E-03	ND	2.1E-02	3.8E-02	2.5E-02	1.2E+00	ND	--	0	--
	Hexachlorobiphenyl	µg/kg	9	4	44	9.0E-02	1.2E-01	1.7E+00	ND	1.2E+01	3.9E+01	1.8E+01	1.4E+00	ND	--	0	--
	PCB-128 (2,2',3,3',4,4'-HxCB)	µg/kg	2	2	100	--	--	5.3E-03	ND	3.8E-02	7.1E-02	4.6E-02	1.2E+00	ND	--	0	--
	PCB-129 (2,2',3,3',4,5-HxCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.8E-02	ND	1.8E-02	1.8E-02	NA	NA	ND	--	0	--
	PCB-130 (2,2',3,3',4,5'-HxCB)	µg/kg	11	9	82	4.5E-02	4.7E-02	2.3E-03	ND	9.8E-02	6.5E-01	2.1E-01	2.2E+00	ND	--	0	--
	PCB-131 (2,2',3,3',4,6-HxCB)	µg/kg	11	5	45	1.1E-02	5.9E-02	3.5E-03	ND	4.1E-02	1.7E-01	7.0E-02	1.7E+00	ND	--	0	--
	PCB-132 (2,2',3,3',4,6'-HxCB)	µg/kg	11	5	45	4.5E-02	5.9E-02	2.1E-02	ND	8.0E-01	3.2E+00	1.3E+00	1.7E+00	ND	--	0	--
	PCB-133 (2,2',3,3',5,5'-HxCB)	µg/kg	11	6	55	1.1E-02	5.9E-02	4.4E-03	ND	2.6E-02	1.1E-01	4.2E-02	1.7E+00	ND	--	0	--
	PCB-134 (2,2',3,3',5,6-HxCB)	µg/kg	11	8	73	1.1E-02	4.7E-02	4.4E-03	ND	8.8E-02	5.0E-01	1.7E-01	1.9E+00	ND	--	0	--
	PCB-135 (2,2',3,3',5,6'-HxCB)	µg/kg	2	2	100	--	--	1.4E-02	ND	3.8E-02	6.1E-02	3.3E-02	8.9E-01	ND	--	0	--
	PCB-136 (2,2',3,3',6,6'-HxCB)	µg/kg	11	5	45	1.8E-02	2.3E-02	1.2E-02	ND	2.6E-01	1.1E+00	4.5E-01	1.8E+00	ND	--	0	--
	PCB-137 (2,2',3,4,4',5-HxCB)	µg/kg	11	8	73	1.1E-02	9.5E-02	1.3E-03	ND	8.8E-02	5.3E-01	1.8E-01	2.1E+00	ND	--	0	--
	PCB-138 (2,2',3,4,4',5'-HxCB)	µg/kg	2	2	100	--	--	8.8E-02	ND	3.2E-01	5.5E-01	3.3E-01	1.0E+00	ND	--	0	--
	PCB-139 (2,2',3,4,4',6-HxCB)	µg/kg	2	2	100	--	--	7.9E-02	ND	2.0E-01	3.3E-01	1.8E-01	8.7E-01	ND	--	0	--
	PCB-140 (2,2',3,4,4',6'-HxCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.4E-03	ND	2.4E-03	2.4E-03	NA	NA	ND	--	0	--

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Polychlorinated Biphenyls	PCB-141 (2,2',3,4,5,5'-HxCB)	µg/kg	11	5	45	1.8E-02	2.3E-02	2.1E-02	ND	4.2E-01	1.6E+00	6.4E-01	1.5E+00	ND	--	0	--
	PCB-142 (2,2',3,4,5,6-HxCB)	µg/kg	11	1	9	1.1E-02	1.2E-01	7.2E-03	ND	7.2E-03	7.2E-03	NA	NA	ND	--	0	--
	PCB-143 (2,2',3,4,5,6'-HxCB)	µg/kg	11	1	9	1.1E-02	5.9E-02	2.7E-03	ND	2.7E-03	2.7E-03	NA	NA	ND	--	0	--
	PCB-144 (2,2',3,4,5',6-HxCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	1.4E-02	ND	9.6E-02	4.3E-01	1.5E-01	1.5E+00	ND	--	0	--
	PCB-145 (2,2',3,4,6,6'-HxCB)	µg/kg	11	3	27	1.1E-02	1.2E-01	8.4E-04	ND	3.1E-03	7.2E-03	3.5E-03	1.1E+00	ND	--	0	--
	PCB-146 (2,2',3,4',5,5'-HxCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	9.5E-03	ND	2.0E-01	9.4E-01	3.3E-01	1.7E+00	ND	--	0	--
	PCB-147 (2,2',3,4',5,6-HxCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	3.3E-03	ND	3.3E-03	3.3E-03	NA	NA	ND	--	0	--
	PCB-148 (2,2',3,4',5,6'-HxCB)	µg/kg	11	4	36	1.1E-02	1.2E-01	8.8E-04	ND	6.4E-03	1.8E-02	7.9E-03	1.2E+00	ND	--	0	--
	PCB-149 (2,2',3,4',5',6-HxCB)	µg/kg	2	2	100	--	--	7.9E-02	ND	2.0E-01	3.3E-01	1.8E-01	8.7E-01	ND	--	0	--
	PCB-150 (2,2',3,4',6,6'-HxCB)	µg/kg	11	5	45	1.1E-02	1.2E-01	8.9E-04	ND	5.9E-03	1.6E-02	6.0E-03	1.0E+00	ND	--	0	--
	PCB-151 (2,2',3,5,5',6-HxCB)	µg/kg	2	2	100	--	--	2.1E-02	ND	4.7E-02	7.3E-02	3.7E-02	7.8E-01	ND	--	0	--
	PCB-152 (2,2',3,5,6,6'-HxCB)	µg/kg	11	4	36	1.1E-02	1.2E-01	1.3E-03	ND	4.3E-03	1.3E-02	5.8E-03	1.4E+00	ND	--	0	--
	PCB-153 (2,2',4,4',5,5'-HxCB)	µg/kg	2	2	100	--	--	8.6E-02	ND	2.8E-01	4.8E-01	2.8E-01	9.8E-01	ND	--	0	--
	PCB-154 (2,2',4,4',5,6'-HxCB)	µg/kg	11	6	55	1.1E-02	5.9E-02	4.4E-03	ND	1.9E-02	7.1E-02	2.6E-02	1.4E+00	ND	--	0	--
	PCB-155 (2,2',4,4',6,6'-HxCB)	µg/kg	11	4	36	1.1E-02	1.2E-01	1.9E-03	ND	3.4E-03	7.2E-03	2.5E-03	7.2E-01	ND	--	0	--
	PCB-156 (2,3,3',4,4',5-HxCB)	µg/kg	2	2	100	--	--	3.9E-03	ND	2.3E-02	4.2E-02	2.7E-02	1.2E+00	ND	--	0	--
	PCB-157 (2,3,3',4,4',5'-HxCB)	µg/kg	2	1	50	1.1E-03	1.1E-03	6.7E-03	ND	6.7E-03	6.7E-03	NA	NA	ND	--	0	--
	PCB-158 (2,3,3',4,4',6-HxCB)	µg/kg	11	7	64	1.8E-02	2.3E-02	9.7E-03	ND	2.0E-01	9.9E-01	3.5E-01	1.8E+00	ND	--	0	--
	PCB-159 (2,3,3',4,5,5'-HxCB)	µg/kg	11	6	55	1.1E-02	1.2E-01	4.3E-03	ND	1.4E-02	4.8E-02	1.7E-02	1.2E+00	ND	--	0	--
	PCB-160 (2,3,3',4,5,6-HxCB)	µg/kg	11	6	55	2.5E-02	5.9E-02	6.3E-03	ND	2.8E-02	7.8E-02	2.9E-02	1.1E+00	ND	--	0	--
	PCB-161 (2,3,3',4,5',6-HxCB)	µg/kg	11	2	18	1.1E-02	1.2E-01	2.2E-03	ND	2.4E-03	2.6E-03	2.9E-04	1.2E-01	ND	--	0	--
	PCB-162 (2,3,3',4',5,5'-HxCB)	µg/kg	11	6	55	1.1E-02	1.2E-01	2.8E-03	ND	1.0E-02	4.1E-02	1.5E-02	1.4E+00	ND	--	0	--
	PCB-163 (2,3,3',4',5,6-HxCB)	µg/kg	2	2	100	--	--	8.8E-02	ND	3.2E-01	5.5E-01	3.3E-01	1.0E+00	ND	--	0	--
	PCB-164 (2,3,3',4',5',6-HxCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	2.1E-02	ND	2.1E-01	6.1E-01	2.6E-01	1.2E+00	ND	--	0	--
	PCB-165 (2,3,3',5,5',6-HxCB)	µg/kg	11	0	0	1.1E-02	1.2E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-166 (2,3,4,4',5,6-HxCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.7E-03	ND	2.7E-03	2.7E-03	NA	NA	ND	--	0	--
	PCB-167 (2,3',4,4',5,5'-HxCB)	µg/kg	11	8	73	1.1E-03	4.7E-02	2.1E-03	ND	9.3E-02	5.9E-01	2.0E-01	2.2E+00	ND	--	0	--
	PCB-168 (2,3',4,4',5',6-HxCB)	µg/kg	2	2	100	--	--	2.1E-02	ND	7.1E-02	1.2E-01	7.0E-02	9.9E-01	ND	--	0	--
	PCB-169 (3,3',4,4',5,5'-HxCB)	µg/kg	11	3	27	1.1E-03	5.9E-02	1.1E-03	ND	7.1E-02	1.7E-01	8.8E-02	1.2E+00	ND	--	0	--
	Nonachlorobiphenyl	µg/kg	9	5	56	9.1E-02	1.2E-01	2.9E-01	ND	9.0E-01	2.7E+00	1.0E+00	1.1E+00	ND	--	0	--
	PCB-206 (2,2',3,3',4,4',5,5',6-NoCB)	µg/kg	11	7	64	9.1E-02	1.2E-01	5.4E-03	ND	2.4E-01	9.6E-01	3.2E-01	1.3E+00	ND	--	0	--
	PCB-207 (2,2',3,3',4,4',5,6,6'-NoCB)	µg/kg	11	6	55	1.1E-02	1.2E-01	8.7E-02	ND	3.3E-01	1.1E+00	3.8E-01	1.2E+00	ND	--	0	--
	PCB-208 (2,2',3,3',4,5,5',6,6'-NoCB)	µg/kg	11	6	55	1.1E-02	1.2E-01	6.5E-02	ND	1.9E-01	6.5E-01	2.3E-01	1.2E+00	ND	--	0	--
	Octachlorobiphenyl	µg/kg	9	5	56	9.1E-02	1.2E-01	2.3E-01	ND	1.3E+00	4.4E+00	1.7E+00	1.4E+00	ND	--	0	--
	PCB-194 (2,2',3,3',4,4',5,5'-OcCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	1.1E-02	ND	1.9E-01	8.3E-01	2.9E-01	1.5E+00	ND	--	0	--
	PCB-195 (2,2',3,3',4,4',5,6-OcCB)	µg/kg	11	11	100	--	--	3.6E-03	ND	5.1E-02	3.2E-01	9.1E-02	1.8E+00	ND	--	0	--
	PCB-196 (2,2',3,3',4,4',5,6'-OcCB)	µg/kg	11	7	64	9.1E-02	1.2E-01	1.6E-02	ND	1.7E-01	6.1E-01	2.2E-01	1.3E+00	ND	--	0	--
	PCB-197 (2,2',3,3',4,4',6,6'-OcCB)	µg/kg	11	8	73	1.1E-02	1.2E-01	1.9E-03	ND	3.9E-02	1.7E-01	5.5E-02	1.4E+00	ND	--	0	--
	PCB-198 (2,2',3,3',4,5,5',6-OcCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.5E-02	ND	1.5E-02	1.5E-02	NA	NA	ND	--	0	--
	PCB-199 (2,2',3,3',4,5,5',6'-OcCB)	µg/kg	2	2	100	--	--	1.2E-02	ND	1.3E-01	2.5E-01	1.7E-01	1.3E+00	ND	--	0	--
	PCB-200 (2,2',3,3',4,5,6,6'-OcCB)	µg/kg	11	6	55	1.1E-02	1.2E-01	9.5E-03	ND	3.9E-02	1.4E-01	4.9E-02	1.3E+00	ND	--	0	--
	PCB-201 (2,2',3,3',4,5',6,6'-OcCB)	µg/kg	11	6	55	1.1E-02	1.2E-01	2.1E-02	ND	7.3E-02	2.5E-01	8.7E-02	1.2E+00	ND	--	0	--
	PCB-202 (2,2',3,3',5,5',6,6'-OcCB)	µg/kg	11	5	45	1.1E-02	1.2E-01	1.7E-02	ND	6.6E-02	1.9E-01	7.1E-02	1.1E+00	ND	--	0	--
	PCB-203 (2,2',3,4,4',5,5',6-OcCB)	µg/kg	11	7	64	9.1E-02	1.2E-01	1.6E-02	ND	1.7E-01	6.2E-01	2.2E-01	1.3E+00	ND	--	0	--
	PCB-204 (2,2',3,4,4',5,6,6'-OcCB)	µg/kg	11	7	64	1.1E-02	1.2E-01	4.5E-03	ND	2.3E-02	8.6E-02	2.8E-02	1.2E+00	ND	--	0	--
	PCB-205 (2,3,3',4,4',5,5',6-OcCB)	µg/kg	11	7	64	1.1E-02	1.2E-01	7.6E-03	ND	2.5E-02	1.0E-01	3.4E-02	1.3E+00	ND	--	0	--
	PCBs 107 + 124	µg/kg	9	6	67	9.1E-02	1.2E-01	9.4E-03	ND	5.7E-02	2.6E-01	1.0E-01	1.8E+00	ND	--	0	--
	PCBs 110 + 115	µg/kg	9	5	56	9.0E-02	1.2E-01	2.0E-01	ND	2.1E+00	8.7E+00	3.7E+00	1.7E+00	ND	--	0	--
	PCB-12/13	µg/kg	9	3	33	9.1E-03	1.2E-02	2.0E-02	ND	1.7E-01	2.8E-01	1.4E-01	7.9E-01	ND	--	0	--
	PCBs 128 + 166	µg/kg	9	6	67	4.5E-02	5.9E-02	5.4E-02	ND	3.7E-01	1.7E+00	6.3E-01	1.7E+00	ND	--	0	--
	PCBs 129 + 138 + 163	µg/kg	9	5	56	4.5E-02	5.9E-02	3.1E-01	ND	2.6E+00	9.7E+00	4.0E+00	1.6E+00	ND	--	0	--
	PCBs 135 + 151	µg/kg	9	3	33	4.5E-02	5.9E-02	2.4E-01	ND	9.4E-01	2.2E+00	1.1E+00	1.2E+00	ND	--	0	--
	PCBs 139 + 140	µg/kg	9	5	56	4.5E-02	5.9E-02	5.9E-03	ND	4.6E-02	1.8E-01	7.6E-02	1.6E+00	ND	--	0	--
	PCBs 147 + 149	µg/kg	9	3	33	4.5E-02	5.9E-02	6.4E-01	ND	2.3E+00	5.5E+00	2.8E+00	1.2E+00	ND	--	0	--
	PCBs 153 + 168	µg/kg	9	3	33	4.5E-02	5.9E-02	7.3E-01	ND	2.6E+00	5.9E+00	2.9E+00	1.1E+00	ND	--	0	--
	PCBs 156 + 157	µg/kg	9	8	89	4.5E-02	4.5E-02	2.5E-03	ND	2.6E-01	1.7E+00	5.8E-01	2.2E+00	ND	--	0	--
	PCBs 171 + 173	µg/kg	9	7	78	9.1E-02	9.5E-02	5.2E-03	ND	1.2E-01	5.7E-01	2.0E-01	1.7E+00	ND	--	0	--
	PCBs 18 + 30	µg/kg	9	2	22	2.5E-02	5.9E-02	4.6E-02	ND	8.0E-02	1.1E-01	4.7E-02	5.9E-01	ND	--	0	--
	PCBs 180 + 193	µg/kg	9	6	67	4.5E-02	5.9E-02	2.3E-01	ND	8.2E-01	3.3E+00	1.2E+00	1.5E+00	ND	--	0	--
	PCBs 198 + 199	µg/kg	9	5	56	4.5E-02	5.9E-02	5.9E-02	ND	3.0E-01	1.0E+00	4.1E-01	1.4E+00	ND	--	0	--
	PCBs 20 + 28	µg/kg	9	2	22	2.5E-02	5.9E-02	5.0E-02	ND	1.8E-01	3.0E-01	1.8E-01	1.0E+00	ND	--	0	--
	PCBs 21 + 33	µg/kg	9	2	22	9.9E-03	2.3E-02	3.2E-02	ND	5.8E-02	8.5E-02	3.7E-02	6.4E-01	ND	--	0	--
	PCBs 26 + 29	µg/kg	9	7	78	1.8E-02	2.0E-02	2.3E-03	ND	1.1E-02	3.9E-02	1.3E-02	1.1E+00	ND	--	0	--
	PCBs 40 + 41 + 71	µg/kg	9	8	89	4.5E-02	4.5E-02	1.1E-02	ND	5.1E-02	2.7E-01	8.9E-02	1.7E+00	ND	--	0	--
	PCBs 43 + 73	µg/kg	9	3	33	4.5E-02	5.9E-02	1.2E-03	ND	7.0E-03	1.3E-02	5.9E-03	8.4E-01	ND	--	0	--
	PCBs 44 + 47 + 65	µg/kg	9	3	33	4.5E-02	5.9E-02	6.3E-02	ND	5.1E-01	1.4E+00	7.5E-01	1.5E+00	ND	--	0	--
	PCBs 45 + 51	µg/kg	9	2	22	1.8E-02	2.3E-02	4.5E-03	ND	5.8E-03	7.1E-03	1.9E-03	3.2E-01	ND	--	0	--
	PCBs 49 + 69	µg/kg	9	7	78	2.5E-02	4.5E-02	1.2E-02	ND	1.2E-01	6.7E-01	2.4E-01	2.1E+00	ND	--	0	--
	PCBs 50 + 53	µg/kg	9	6	67	1.8E-02	2.0E-02	4.1E-03	ND	1.9E-02	9.1E-02	3.5E-02	1.8E+00	ND	--	0	--

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Polychlorinated Biphenyls	PCBs 59 + 62 + 75	µg/kg	9	5	56	1.8E-02	2.3E-02	3.8E-03	ND	1.5E-02	4.0E-02	1.5E-02	9.9E-01	ND	--	0	--
	PCBs 61 + 70 + 74 + 76	µg/kg	9	5	56	4.5E-02	5.9E-02	1.1E-01	ND	6.5E-01	2.4E+00	1.0E+00	1.5E+00	ND	--	0	--
	PCBs 83 + 99	µg/kg	9	6	67	4.5E-02	5.9E-02	2.1E-02	ND	6.1E-01	3.0E+00	1.2E+00	2.0E+00	ND	--	0	--
	PCB-85/116	µg/kg	9	6	67	1.8E-02	2.3E-02	5.0E-02	ND	2.4E-01	1.1E+00	4.1E-01	1.7E+00	ND	--	0	--
	PCBs 86 + 87 + 97 + 109 + 119 + 125	µg/kg	9	6	67	4.5E-02	5.9E-02	1.2E-01	ND	1.1E+00	5.2E+00	2.0E+00	1.9E+00	ND	--	0	--
	PCB-88/91	µg/kg	9	7	78	4.5E-02	4.7E-02	3.7E-03	ND	1.7E-01	9.8E-01	3.6E-01	2.1E+00	ND	--	0	--
	PCBs 90 + 101 + 113	µg/kg	9	3	33	9.0E-02	1.2E-01	4.3E-01	ND	2.9E+00	7.5E+00	4.0E+00	1.4E+00	ND	--	0	--
	PCBs 93 + 100	µg/kg	9	4	44	4.5E-02	5.9E-02	3.3E-03	ND	1.2E-02	3.7E-02	1.6E-02	1.4E+00	ND	--	0	--
	PCBs 98 + 102	µg/kg	9	4	44	4.5E-02	5.9E-02	9.6E-03	ND	5.6E-02	1.9E-01	8.8E-02	1.6E+00	ND	--	0	--
	Pentachlorobiphenyl	µg/kg	9	6	67	9.1E-02	1.2E-01	1.0E+00	ND	1.0E+01	4.8E+01	1.9E+01	1.9E+00	ND	--	0	--
	PCB-082 (2,2',3,3',4-PeCB)	µg/kg	11	8	73	4.5E-02	5.9E-02	6.6E-03	ND	1.3E-01	8.3E-01	2.8E-01	2.2E+00	ND	--	0	--
	PCB-083 (2,2',3,3',5-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	5.0E-03	ND	5.0E-03	5.0E-03	NA	NA	ND	--	0	--
	PCB-084 (2,2',3,3',6-PeCB)	µg/kg	11	6	55	4.5E-02	5.9E-02	9.8E-03	ND	4.4E-01	2.3E+00	9.0E-01	2.1E+00	ND	--	0	--
	PCB-085 (2,2',3,4,4'-PeCB)	µg/kg	2	2	100	--	--	5.5E-03	ND	1.0E-02	1.5E-02	6.7E-03	6.6E-01	ND	--	0	--
	PCB-086 (2,2',3,4,5-PeCB)	µg/kg	2	2	100	--	--	9.2E-03	ND	4.8E-02	8.7E-02	5.5E-02	1.1E+00	ND	--	0	--
	PCB-087 (2,2',3,4,5'-PeCB)	µg/kg	2	2	100	--	--	9.2E-03	ND	4.8E-02	8.7E-02	5.5E-02	1.1E+00	ND	--	0	--
	PCB-088 (2,2',3,4,6-PeCB)	µg/kg	2	0	0	1.1E-02	1.1E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-089 (2,2',3,4,6'-PeCB)	µg/kg	11	5	45	4.5E-02	5.9E-02	3.0E-03	ND	3.9E-02	9.0E-02	3.7E-02	9.5E-01	ND	--	0	--
	PCB-090 (2,2',3,4',5-PeCB)	µg/kg	2	2	100	--	--	3.9E-02	ND	6.5E-02	9.0E-02	3.6E-02	5.6E-01	ND	--	0	--
	PCB-097 (2,2',3,4',5'-PeCB)	µg/kg	2	2	100	--	--	9.2E-03	ND	4.8E-02	8.7E-02	5.5E-02	1.1E+00	ND	--	0	--
	PCB-091 (2,2',3,4',6-PeCB)	µg/kg	2	2	100	--	--	5.2E-03	ND	6.5E-03	7.8E-03	1.8E-03	2.8E-01	ND	--	0	--
	PCB-098 (2,2',3,4',6'-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.4E-03	ND	1.4E-03	1.4E-03	NA	NA	ND	--	0	--
	PCB-092 (2,2',3,5,5'-PeCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	6.1E-03	ND	2.5E-01	1.4E+00	5.2E-01	2.1E+00	ND	--	0	--
	PCB-093 (2,2',3,5,6-PeCB)	µg/kg	2	2	100	--	--	4.5E-02	ND	5.2E-02	5.9E-02	9.9E-03	1.9E-01	ND	--	0	--
	PCB-094 (2,2',3,5,6'-PeCB)	µg/kg	11	3	27	1.1E-02	5.9E-02	2.0E-03	ND	1.0E-02	2.7E-02	1.4E-02	1.4E+00	ND	--	0	--
	PCB-095 (2,2',3,5',6-PeCB)	µg/kg	11	5	45	4.5E-02	5.9E-02	4.5E-02	ND	1.6E+00	7.0E+00	3.0E+00	1.9E+00	ND	--	0	--
	PCB-096 (2,2',3,6,6'-PeCB)	µg/kg	11	4	36	1.1E-02	5.9E-02	1.6E-03	ND	1.3E-02	4.5E-02	2.1E-02	1.6E+00	ND	--	0	--
	PCB-099 (2,2',4,4',5-PeCB)	µg/kg	2	2	100	--	--	1.2E-02	ND	2.3E-02	3.4E-02	1.6E-02	6.8E-01	ND	--	0	--
	PCB-100 (2,2',4,4',6-PeCB)	µg/kg	2	0	0	1.1E-02	1.1E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-101 (2,2',4,5,5'-PeCB)	µg/kg	2	2	100	--	--	3.9E-02	ND	6.5E-02	9.0E-02	3.6E-02	5.6E-01	ND	--	0	--
	PCB-102 (2,2',4,5,6'-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.4E-03	ND	1.4E-03	1.4E-03	NA	NA	ND	--	0	--
	PCB-103 (2,2',4,5',6-PeCB)	µg/kg	11	4	36	1.1E-02	5.9E-02	3.4E-03	ND	1.2E-02	3.6E-02	1.6E-02	1.4E+00	ND	--	0	--
	PCB-104 (2,2',4,6,6'-PeCB)	µg/kg	11	2	18	1.1E-02	5.9E-02	9.7E-05	ND	2.2E-04	3.5E-04	1.8E-04	8.0E-01	ND	--	0	--
	PCB-105 (2,3,3',4,4'-PeCB)	µg/kg	11	8	73	1.8E-02	2.3E-02	9.4E-03	ND	4.2E-01	2.5E+00	8.4E-01	2.0E+00	ND	--	0	--
	PCB-106 (2,3,3',4,5-PeCB)	µg/kg	11	3	27	2.5E-02	5.9E-02	8.7E-03	ND	3.6E-02	8.3E-02	4.1E-02	1.1E+00	ND	--	0	--
	PCB-108 (2,3,3',4,5'-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	9.7E-03	ND	9.7E-03	9.7E-03	NA	NA	ND	--	0	--
	PCB-109 (2,3,3',4,6-PeCB)	µg/kg	11	7	64	1.1E-02	2.3E-02	5.0E-03	ND	7.0E-02	3.7E-01	1.3E-01	1.9E+00	ND	--	0	--
	PCB-107 (2,3,3',4',5-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	9.7E-03	ND	9.7E-03	9.7E-03	NA	NA	ND	--	0	--
	PCB-122 (2,3,3',4',5'-PeCB)	µg/kg	11	5	45	1.1E-02	5.9E-02	1.4E-03	ND	1.7E-02	6.9E-02	2.9E-02	1.8E+00	ND	--	0	--
	PCB-110 (2,3,3',4',6-PeCB)	µg/kg	2	2	100	--	--	3.9E-02	ND	9.5E-02	1.5E-01	7.8E-02	8.3E-01	ND	--	0	--
	PCB-111 (2,3,3',5,5'-PeCB)	µg/kg	11	5	45	9.1E-02	1.2E-01	1.9E-03	ND	2.2E-02	8.7E-02	3.6E-02	1.6E+00	ND	--	0	--
	PCB-112 (2,3,3',5,6-PeCB)	µg/kg	11	2	18	1.1E-02	1.2E-01	2.6E-03	ND	6.0E-02	1.2E-01	8.1E-02	1.4E+00	ND	--	0	--
	PCB-113 (2,3,3',5',6-PeCB)	µg/kg	2	0	0	1.1E-02	1.1E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-114 (2,3,4,4',5-PeCB)	µg/kg	11	6	55	1.1E-03	5.9E-02	2.6E-03	ND	6.6E-02	2.9E-01	1.1E-01	1.7E+00	ND	--	0	--
	PCB-115 (2,3,4,4',6-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.1E-02	ND	1.1E-02	1.1E-02	NA	NA	ND	--	0	--
	PCB-116 (2,3,4,5,6-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.1E-02	ND	1.1E-02	1.1E-02	NA	NA	ND	--	0	--
	PCB-117 (2,3,4',5,6-PeCB)	µg/kg	11	6	55	1.8E-02	2.3E-02	9.2E-03	ND	6.0E-02	1.8E-01	6.6E-02	1.1E+00	ND	--	0	--
	PCB-118 (2,3',4,4',5-PeCB)	µg/kg	11	8	73	4.5E-02	5.9E-02	1.6E-02	ND	8.7E-01	5.3E+00	1.8E+00	2.1E+00	ND	--	0	--
	PCB-119 (2,3',4,4',6-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.4E-03	ND	1.4E-03	1.4E-03	NA	NA	ND	--	0	--
	PCB-120 (2,3',4,5,5'-PeCB)	µg/kg	11	5	45	4.5E-02	5.9E-02	3.6E-03	ND	8.8E-03	1.5E-02	5.8E-03	6.7E-01	ND	--	0	--
	PCB-121 (2,3',4,5',6-PeCB)	µg/kg	11	1	9	1.1E-02	5.9E-02	9.6E-04	ND	9.6E-04	9.6E-04	NA	NA	ND	--	0	--
	PCB-123 (2,3',4,4',5'-PeCB)	µg/kg	11	3	27	1.1E-03	5.9E-02	5.8E-03	ND	9.1E-02	2.6E-01	1.4E-01	1.6E+00	ND	--	0	--
	PCB-124 (2,3',4',5,5'-PeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	6.6E-03	ND	6.6E-03	6.6E-03	NA	NA	ND	--	0	--
	PCB-125 (2,3',4',5',6-PeCB)	µg/kg	2	2	100	--	--	9.2E-03	ND	4.8E-02	8.7E-02	5.5E-02	1.1E+00	ND	--	0	--
	PCB-126 (3,3',4,4',5-PeCB)	µg/kg	11	4	36	1.1E-03	5.9E-02	4.7E-03	ND	4.8E-02	1.7E-01	7.9E-02	1.6E+00	ND	--	0	--
	PCB-127 (3,3',4,5,5'-PeCB)	µg/kg	11	4	36	9.0E-02	1.2E-01	1.3E-03	ND	2.1E-02	5.2E-02	2.2E-02	1.1E+00	ND	--	0	--
	Tetrachlorobiphenyl	µg/kg	9	6	67	4.5E-02	5.9E-02	4.0E-01	ND	2.6E+00	1.2E+01	4.4E+00	1.7E+00	ND	--	0	--
	PCB-040 (2,2',3,3'-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.2E-02	ND	1.2E-02	1.2E-02	NA	NA	ND	--	0	--
	PCB-041 (2,2',3,4-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	4.2E-02	ND	4.2E-02	4.2E-02	NA	NA	ND	--	0	--
	PCB-042 (2,2',3,4'-TeCB)	µg/kg	11	7	64	1.1E-02	2.0E-02	7.1E-03	ND	3.4E-02	1.2E-01	4.1E-02	1.2E+00	ND	--	0	--
	PCB-043 (2,2',3,5-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	5.1E-02	ND	5.1E-02	5.1E-02	NA	NA	ND	--	0	--
	PCB-044 (2,2',3,5'-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	5.1E-02	ND	5.1E-02	5.1E-02	NA	NA	ND	--	0	--
	PCB-045 (2,2',3,6-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.1E-02	ND	1.1E-02	1.1E-02	NA	NA	ND	--	0	--
	PCB-046 (2,2',3,6'-TeCB)	µg/kg	11	5	45	1.1E-02	2.3E-02	1.5E-03	ND	7.3E-03	1.9E-02	7.1E-03	9.8E-01	ND	--	0	--
	PCB-047 (2,2',4,4'-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.5E-02	ND	2.5E-02	2.5E-02	NA	NA	ND	--	0	--
	PCB-048 (2,2',4,5-TeCB)	µg/kg	11	8	73	1.1E-02	1.9E-02	4.6E-03	ND	1.6E-02	6.0E-02	1.9E-02	1.2E+00	ND	--	0	--
	PCB-049 (2,2',4,5'-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	5.1E-02	ND	5.1E-02	5.1E-02	NA	NA	ND	--	0	--
	PCB-050 (2,2',4,6-TeCB)	µg/kg	2	0	0	1.1E-02	1.1E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-051 (2,2',4,6'-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	3.4E-03	ND	3.4E-03	3.4E-03	NA	NA	ND	--	0	--

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Polychlorinated Biphenyls	PCB-052 (2,2',5,5'-TeCB)	µg/kg	11	5	45	4.5E-02	5.9E-02	1.9E-02	ND	8.5E-01	3.9E+00	1.7E+00	2.0E+00	ND	--	0	--
	PCB-053 (2,2',5,6'-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.2E-02	ND	1.2E-02	1.2E-02	NA	NA	ND	--	0	--
	PCB-054 (2,2',6,6'-TeCB)	µg/kg	11	2	18	1.1E-02	5.9E-02	4.9E-05	ND	1.2E-03	2.3E-03	1.6E-03	1.4E+00	ND	--	0	--
	PCB-055 (2,3,3',4-TeCB)	µg/kg	11	3	27	1.1E-02	5.9E-02	6.5E-04	ND	2.2E-03	5.2E-03	2.6E-03	1.2E+00	ND	--	0	--
	PCB-056 (2,3,3',4'-TeCB)	µg/kg	11	9	82	1.9E-02	2.3E-02	5.3E-03	ND	5.5E-02	2.5E-01	7.4E-02	1.4E+00	ND	--	0	--
	PCB-057 (2,3,3',5-TeCB)	µg/kg	11	3	27	1.1E-02	5.9E-02	1.6E-03	ND	3.8E-03	5.8E-03	2.1E-03	5.5E-01	ND	--	0	--
	PCB-058 (2,3,3',5'-TeCB)	µg/kg	11	2	18	1.1E-02	5.9E-02	6.7E-04	ND	9.7E-02	1.9E-01	1.4E-01	1.4E+00	ND	--	0	--
	PCB-059 (2,3,3',6-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.0E-02	ND	2.0E-02	2.0E-02	NA	NA	ND	--	0	--
	PCB-060 (2,3,4,4'-TeCB)	µg/kg	11	8	73	4.5E-02	5.9E-02	8.2E-03	ND	5.7E-02	1.8E-01	6.3E-02	1.1E+00	ND	--	0	--
	PCB-061 (2,3,4,5-TeCB)	µg/kg	2	2	100	--	--	1.1E-02	ND	2.1E-02	3.0E-02	1.3E-02	6.6E-01	ND	--	0	--
	PCB-062 (2,3,4,6-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	4.4E-04	ND	4.4E-04	4.4E-04	NA	NA	ND	--	0	--
	PCB-063 (2,3,4',5-TeCB)	µg/kg	11	5	45	1.1E-02	5.9E-02	9.6E-04	ND	3.1E-02	1.0E-01	4.4E-02	1.4E+00	ND	--	0	--
	PCB-064 (2,3,4',6-TeCB)	µg/kg	11	10	91	1.1E-02	1.1E-02	9.2E-03	ND	7.8E-02	4.6E-01	1.4E-01	1.7E+00	ND	--	0	--
	PCB-065 (2,3,5,6-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.4E-04	ND	2.4E-04	2.4E-04	NA	NA	ND	--	0	--
	PCB-066 (2,3',4,4'-TeCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	1.6E-02	ND	1.4E-01	5.7E-01	1.9E-01	1.4E+00	ND	--	0	--
	PCB-067 (2,3',4,5-TeCB)	µg/kg	11	4	36	1.1E-02	5.9E-02	1.4E-03	ND	3.8E-03	6.6E-03	2.8E-03	7.4E-01	ND	--	0	--
	PCB-068 (2,3',4,5'-TeCB)	µg/kg	11	4	36	1.1E-02	5.9E-02	1.8E-03	ND	1.4E-02	4.2E-02	1.9E-02	1.4E+00	ND	--	0	--
	PCB-069 (2,3',4,6-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	6.3E-02	ND	6.3E-02	6.3E-02	NA	NA	ND	--	0	--
	PCB-070 (2,3',4',5-TeCB)	µg/kg	2	2	100	--	--	4.2E-02	ND	5.6E-02	6.9E-02	1.9E-02	3.4E-01	ND	--	0	--
	PCB-076 (2,3',4',5'-TeCB)	µg/kg	2	2	100	--	--	1.6E-02	ND	2.8E-02	4.0E-02	1.7E-02	6.1E-01	ND	--	0	--
	PCB-071 (2,3',4',6-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	1.7E-02	ND	1.7E-02	1.7E-02	NA	NA	ND	--	0	--
	PCB-072 (2,3',5,5'-TeCB)	µg/kg	11	5	45	1.1E-02	5.9E-02	3.7E-04	ND	4.9E-03	1.2E-02	4.8E-03	9.9E-01	ND	--	0	--
	PCB-073 (2,3',5',6-TeCB)	µg/kg	2	2	100	--	--	1.9E-02	ND	4.2E-02	6.4E-02	3.2E-02	7.7E-01	ND	--	0	--
	PCB-074 (2,4,4',5-TeCB)	µg/kg	2	2	100	--	--	1.1E-02	ND	2.1E-02	3.0E-02	1.3E-02	6.6E-01	ND	--	0	--
	PCB-075 (2,4,4',6-TeCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.5E-02	ND	2.5E-02	2.5E-02	NA	NA	ND	--	0	--
	PCB-077 (3,3',4,4'-TeCB)	µg/kg	11	5	45	2.1E-03	5.9E-02	9.2E-03	ND	1.2E-01	5.0E-01	2.1E-01	1.8E+00	ND	--	0	--
	PCB-078 (3,3',4,5-TeCB)	µg/kg	11	1	9	1.1E-02	5.9E-02	3.1E-03	ND	3.1E-03	3.1E-03	NA	NA	ND	--	0	--
	PCB-079 (3,3',4,5'-TeCB)	µg/kg	11	6	55	1.1E-02	5.9E-02	4.2E-03	ND	1.6E-02	6.1E-02	2.2E-02	1.4E+00	ND	--	0	--
	PCB-080 (3,3',5,5'-TeCB)	µg/kg	11	4	36	4.5E-02	5.9E-02	6.3E-04	ND	1.5E-02	4.0E-02	1.8E-02	1.2E+00	ND	--	0	--
	PCB-081 (3,4,4',5-TeCB)	µg/kg	11	3	27	1.1E-03	5.9E-02	4.1E-03	ND	1.3E-01	3.3E-01	1.7E-01	1.3E+00	ND	--	0	--
	Trichlorobiphenyl (total)	µg/kg	9	2	22	2.5E-02	5.9E-02	3.0E-01	ND	8.3E-01	1.4E+00	7.5E-01	9.0E-01	ND	--	0	--
	PCB-016 (2,2',3-TrCB)	µg/kg	11	8	73	9.0E-03	1.1E-02	7.8E-03	ND	2.4E-02	7.5E-02	2.1E-02	8.8E-01	ND	--	0	--
	PCB-017 (2,2',4-TrCB)	µg/kg	11	2	18	9.9E-03	2.3E-02	1.3E-02	ND	1.6E-02	2.0E-02	4.7E-03	2.9E-01	ND	--	0	--
	PCB-018 (2,2',5-TrCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	3.7E-02	ND	3.7E-02	3.7E-02	NA	NA	ND	--	0	--
	PCB-019 (2,2',6-TrCB)	µg/kg	11	5	45	9.0E-03	1.1E-02	1.6E-03	ND	4.3E-03	7.3E-03	2.1E-03	4.9E-01	ND	--	0	--
	PCB-020 (2,3,3'-TrCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.2E-02	ND	2.2E-02	2.2E-02	NA	NA	ND	--	0	--
	PCB-021 (2,3,4-TrCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.2E-02	ND	2.2E-02	2.2E-02	NA	NA	ND	--	0	--
	PCB-022 (2,3,4'-TrCB)	µg/kg	11	5	45	1.1E-02	2.3E-02	9.6E-03	ND	5.2E-02	1.1E-01	5.1E-02	9.7E-01	ND	--	0	--
	PCB-023 (2,3,5-TrCB)	µg/kg	11	2	18	9.9E-03	2.3E-02	5.6E-03	ND	6.6E-03	7.6E-03	1.4E-03	2.2E-01	ND	--	0	--
	PCB-024 (2,3,6-TrCB)	µg/kg	11	3	27	9.9E-03	2.3E-02	5.3E-03	ND	8.0E-03	9.8E-03	2.4E-03	3.0E-01	ND	--	0	--
	PCB-025 (2,3',4-TrCB)	µg/kg	11	6	55	9.9E-03	2.0E-02	2.5E-03	ND	5.8E-03	1.2E-02	3.7E-03	6.3E-01	ND	--	0	--
	PCB-033 (2,3',4'-TrCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	2.2E-02	ND	2.2E-02	2.2E-02	NA	NA	ND	--	0	--
	PCB-026 (2,3',5-TrCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	4.5E-03	ND	4.5E-03	4.5E-03	NA	NA	ND	--	0	--
	PCB-034 (2,3',5'-TrCB)	µg/kg	11	2	18	9.9E-03	2.3E-02	3.0E-04	ND	2.4E-03	4.6E-03	3.0E-03	1.2E+00	ND	--	0	--
	PCB-027 (2,3',6-TrCB)	µg/kg	11	3	27	9.9E-03	2.3E-02	2.2E-03	ND	3.7E-03	5.3E-03	1.6E-03	4.2E-01	ND	--	0	--
	PCB-028 (2,4,4'-TrCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	4.1E-02	ND	4.1E-02	4.1E-02	NA	NA	ND	--	0	--
	PCB-029 (2,4,5-TrCB)	µg/kg	2	1	50	1.1E-02	1.1E-02	3.1E-04	ND	3.1E-04	3.1E-04	NA	NA	ND	--	0	--
	PCB-030 (2,4,6-TrCB)	µg/kg	2	0	0	1.1E-02	1.1E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-031 (2,4',5-TrCB)	µg/kg	11	4	36	1.1E-02	5.9E-02	4.5E-02	ND	1.7E-01	3.1E-01	1.4E-01	8.3E-01	ND	--	0	--
	PCB-032 (2,4',6-TrCB)	µg/kg	11	3	27	1.1E-02	2.3E-02	5.0E-03	ND	1.4E-02	2.4E-02	9.5E-03	6.7E-01	ND	--	0	--
	PCB-035 (3,3',4-TrCB)	µg/kg	11	6	55	1.1E-02	2.3E-02	1.3E-03	ND	1.4E-02	3.0E-02	1.2E-02	9.0E-01	ND	--	0	--
	PCB-036 (3,3',5-TrCB)	µg/kg	11	2	18	9.9E-03	2.3E-02	1.6E-03	ND	3.4E-03	5.1E-03	2.5E-03	7.4E-01	ND	--	0	--
	PCB-037 (3,4,4'-TrCB)	µg/kg	11	7	64	4.5E-02	5.9E-02	8.3E-03	ND	7.5E-02	2.6E-01	9.5E-02	1.3E+00	ND	--	0	--
	PCB-038 (3,4,5-TrCB)	µg/kg	11	1	9	9.9E-03	2.3E-02	3.1E-03	ND	3.1E-03	3.1E-03	NA	NA	ND	--	0	--
	PCB-039 (3,4',5-TrCB)	µg/kg	11	6	55	1.1E-02	2.3E-02	4.9E-04	ND	7.4E-03	1.9E-02	8.2E-03	1.1E+00	ND	--	0	--
Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	454	310	68	4.3E-02	4.3E+01	2.8E-02	3.4E+00	1.4E+01	7.6E+02	5.6E+01	4.0E+00	RSAI7	1.0E+03	0	7.6E-01
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	454	318	70	8.0E-02	2.2E+02	3.9E-02	5.6E+00	4.5E+01	2.2E+03	1.7E+02	3.8E+00	RSAI7	--	0	--
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	454	334	74	4.9E-02	1.9E+02	5.7E-02	4.7E+00	3.2E+01	1.8E+03	1.4E+02	4.3E+00	RSAI7	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	454	398	88	7.0E-02	3.4E+01	6.2E-02	4.6E+00	5.9E+01	3.9E+03	2.9E+02	5.0E+00	RSAI7	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	**pg/g**	**454**	**396**	**87**	**4.5E-02**	**8.5E+01**	**6.1E-02**	**4.1E+00**	**5.6E+01**	**4.9E+03**	**3.3E+02**	**5.9E+00**	**RSAI7**	**3.1E+02**	**7**	**1.6E+01**
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	454	411	91	6.0E-01	2.2E+01	8.6E-02	1.3E+01	2.2E+02	1.7E+04	1.2E+03	5.4E+00	RSAI7	--	0	--
	Octachlorodibenzo-p-dioxin	pg/g	454	413	91	1.5E+00	3.8E+01	2.5E-01	2.9E+01	3.7E+02	2.3E+04	2.0E+03	5.3E+00	SSAK5-01	--	0	--
	TCDD (total)	pg/g	74	68	92	4.9E-01	9.5E-01	3.3E-02	5.1E+01	1.0E+03	2.5E+04	4.2E+03	4.1E+00	RSAI7	--	0	--
	PeCDD (total)	pg/g	74	63	85	1.2E+00	2.4E+00	5.1E-01	7.6E+01	1.1E+03	2.4E+04	4.2E+03	3.9E+00	RSAI7	--	0	--
	HxCDD (total)	pg/g	74	68	92	1.2E+00	1.3E+00	1.4E-01	6.3E+01	1.2E+03	3.0E+04	5.0E+03	4.2E+00	RSAI7	--	0	--
	HpCDD (total)	pg/g	74	65	88	1.2E+00	1.4E+00	4.9E-01	9.1E+01	1.0E+03	2.6E+04	4.6E+03	4.3E+00	RSAI7	--	0	--
	2,3,7,8-Tetrachlorodibenzofuran	pg/g	454	417	92	2.0E-01	1.3E+01	6.3E-02	2.3E+01	3.3E+02	4.8E+04	2.4E+03	7.3E+00	RSAI7	--	0	--
	1,2,3,7,8-Pentachlorodibenzofuran	pg/g	454	411	91	2.8E-01	2.2E+01	6.8E-02	3.0E+01	4.2E+02	2.2E+04	1.6E+03	3.8E+00	RSAI7	--	0	--
	2,3,4,7,8-Pentachlorodibenzofuran	pg/g	454	389	86	1.5E-01	2.2E+01	4.3E-02	2.8E+01	2.4E+02	1.5E+04	1.0E+03	4.2E+00	RSAI7	--	0	--

TABLE D-1. Soil Data Summary Statistics (Excluding Soil in ECAs) from 0 to 10 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	454	433	95	2.1E-01	4.3E+01	4.5E-02	5.1E+01	9.7E+02	1.0E+05	5.6E+03	5.8E+00	RSAI7	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	454	427	94	1.7E-01	1.3E+03	2.8E-02	3.0E+01	6.6E+02	6.6E+04	3.9E+03	5.8E+00	RSAI7	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	454	388	85	6.0E-02	2.2E+03	4.2E-02	9.9E+00	1.4E+02	1.5E+04	9.7E+02	6.7E+00	RSAI7	--	0	--
	2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	454	401	88	8.5E-02	1.4E+03	4.0E-02	1.6E+01	2.5E+02	3.6E+04	2.0E+03	7.9E+00	RSAI7	--	0	--
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	454	446	98	1.3E+00	2.0E+01	9.0E-02	8.9E+01	2.2E+03	2.2E+05	1.2E+04	5.6E+00	RSAI7	--	0	--
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	454	423	93	3.7E-01	2.8E+01	1.0E-01	6.1E+01	1.3E+03	1.4E+05	8.8E+03	6.8E+00	RSAI7	--	0	--
	Octachlorodibenzofuran	pg/g	453	439	97	1.7E+00	3.5E+01	2.5E-01	2.7E+02	6.3E+03	7.3E+05	3.8E+04	6.1E+00	RSAI7	--	0	--
	TCDF (total)	pg/g	74	72	97	4.9E-01	4.9E-01	2.6E-01	4.2E+02	3.9E+03	4.8E+04	8.7E+03	2.2E+00	RSAI7	--	0	--
	PeCDF (total)	pg/g	74	73	99	1.3E+00	1.3E+00	9.1E-01	4.6E+02	3.2E+03	2.3E+04	5.2E+03	1.6E+00	RSAI7	--	0	--
	HpCDF (total)	pg/g	74	74	100	--	--	5.5E-01	5.2E+02	8.2E+03	2.0E+05	3.2E+04	3.9E+00	RSAI7	--	0	--
	HxCDF (total)	pg/g	74	73	99	1.3E+00	1.3E+00	9.5E-01	5.4E+02	9.2E+03	2.3E+05	3.8E+04	4.1E+00	RSAI7	--	0	--
	Dibenzofuran	pg/g	1	0	0	1.7E+04	1.7E+04	ND	ND	ND	ND	ND	NA	ND	2.3E+09	0	7.3E-06
	Dioxin TEQ (total)	pg/g	572	539	94	--	--	4.8E-05	1.4E+01	3.5E+02	3.1E+04	1.9E+03	5.6E+00	RSAI7	2700	4	1.2E+01
TPH and Fuel Alcohols	HEM Oil/Grease	µg/kg	1	0	0	8.7E+04	8.7E+04	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Oil Range Organics	µg/kg	169	4	2	1.3E+04	2.7E+05	4.2E+04	ND	8.9E+04	1.3E+05	3.7E+04	4.1E-01	ND	--	0	--
	Total petroleum hydrocarbon-diesel	µg/kg	170	4	2	1.7E+02	2.5E+04	7.2E+04	ND	2.5E+06	4.1E+06	1.8E+06	7.2E-01	ND	--	0	--
	Total petroleum hydrocarbon-gasoline	µg/kg	58	1	2	1.4E+01	6.0E+03	1.3E+02	ND	1.3E+02	1.3E+02	NA	NA	ND	--	0	--
Other	1,1'-Sulfonylbis (4-chlorobenzene)	mg/kg	1	0	0	1.7E-01	1.7E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Phthalic acid	mg/kg	26	1	4	2.5E-01	2.5E-01	4.0E-01	4.0E-01	4.0E-01	4.0E-01	NA	NA	TSB-CJ-09	1.0E+05	0	4.0E-06
	2-Butenoic acid, 3-((dimethoxyphosphinyl)oxy)-, methyl ester (Mevinphos)	mg/kg	40	0	0	7.5E-03	9.5E-03	ND	ND	ND	ND	ND	NA	ND	--	0	--
	3-Methylhexane	mg/kg	1	0	0	7.0E-05	7.0E-05	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,1'-Sulfonylbis-benzene	mg/kg	1	0	0	3.3E-03	3.3E-03	ND	ND	ND	ND	ND	NA	ND	2.1E+03	0	1.6E-06
	Benzenethiol	mg/kg	1	0	0	6.2E-02	6.2E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Chloric acid	mg/kg	189	139	74	8.2E-02	2.9E+00	1.9E-03	1.3E+00	2.7E+02	2.1E+04	1.9E+03	7.1E+00	SA106	--	0	--
	4-Chlorobenzenesulfonic acid	mg/kg	25	0	0	2.5E-01	2.5E-01	ND	ND	ND	ND	ND	NA	ND	1.2E+02	0	2.1E-03
	bis[p-Chlorophenyl]disulfide	mg/kg	1	0	0	1.0E-01	1.0E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	4-Chlorothioanisole	mg/kg	1	0	0	3.8E-03	3.8E-03	ND	ND	ND	ND	ND	NA	ND	--	0	--
	4-Chlorothiophenol	mg/kg	1	0	0	9.3E-02	9.3E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	2,2'-/4,4'-Dichlorobenzil	mg/kg	1	0	0	6.0E-02	6.0E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	O,O-Dimethyl Phosphorodithoate	mg/kg	25	0	0	1.3E+00	1.3E+00	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	1.3E-05
	Dimethyl Disulfide	mg/kg	1	0	0	8.8E-05	8.8E-05	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Diphenyl disulfide	mg/kg	1	0	0	1.4E-02	1.4E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	3-Ethylpentane	mg/kg	1	0	0	1.1E-04	1.1E-04	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Hydroxymethyl phthalimide	mg/kg	1	0	0	2.2E-02	2.2E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	O-Ethyl O-2,4,5-trichlorophenyl ethyl-phosphonothioate	mg/kg	40	0	0	1.0E-02	1.3E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Phosphorodithioic acid, o- o-diethyl ester	mg/kg	25	0	0	2.5E-01	2.5E-01	ND	ND	ND	ND	ND	NA	ND	9.1E+04	0	2.8E-06
	Ethoprop	mg/kg	40	0	0	7.5E-03	9.5E-03	ND	ND	ND	ND	ND	NA	ND	--	0	--

Notes:

-- = No value
bgs = below ground surface
ft = feet
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram
pg/g = picogram per gram
ECA = Excavation control area
NA = Not applicable
ND = Nondetects
PAH = Polycyclic aromatic hydrocarbon
TPH = Total petroleum hydrocarbon
VOC = Volatile organic compound
SVOC = Semivolatile organic compound

[a] Summary statistics presented for all locations across the Site, excluding soil in ECAs.
[b] Chemicals that have maximum detections that exceed their respective BCLs are bolded and highlighted gray.
[c] Chemicals that have detection limits that exceed their respective BCLs are highlighted gray.
[d] The dioxin TEQ results have been calculated by various parties and nondetects may have been treated differently and sample quantitation limits were not reported. For the BHRA, the dioxin TEQs will be calculated using 1/2 the sample quantitation limit
[e] The minimum and maximum non-detected values are represented by one half of the sample quantitation limit.

TABLE D-2. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
VOCs	Acetone	µg/kg	38	19	50	7.5E-01	1.1E+01	5.1E+00	ND	2.0E+01	5.4E+01	1.3E+01	6.5E-01	ND	1.0E+05	0	5.4E-04
	Benzene	µg/kg	38	1	3	1.4E-01	3.5E+00	8.2E-01	ND	8.2E-01	8.2E-01	NA	NA	ND	4.2E+00	0	8.2E-01
	Bromobenzene	µg/kg	38	0	0	2.7E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	7.0E+02	0	5.0E-03
	Bromochloromethane	µg/kg	38	0	0	4.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Bromodichloromethane	µg/kg	38	0	0	2.8E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	3.4E+00	0	1.0E+00
	Bromoform	µg/kg	38	0	0	2.1E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.4E+02	0	1.4E-02
	Bromomethane	µg/kg	38	0	0	4.5E-01	6.0E+00	ND	ND	ND	ND	ND	NA	ND	3.9E+01	0	1.5E-01
	2-Butanone	µg/kg	38	10	26	7.5E-01	7.0E+00	9.5E-01	ND	1.3E+00	2.6E+00	4.8E-01	3.6E-01	ND	3.4E+04	0	2.1E-04
	n-Butylbenzene	µg/kg	38	0	0	3.5E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.4E+02	0	1.5E-02
	sec-Butylbenzene	µg/kg	38	0	0	3.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.2E+02	0	1.5E-02
	tert-Butylbenzene	µg/kg	38	0	0	2.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	3.9E+02	0	8.8E-03
	Carbon Tetrachloride	µg/kg	38	0	0	2.8E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	3.8E+00	0	9.0E-01
	Chlorobenzene	µg/kg	38	1	3	1.5E-01	3.5E+00	5.5E+00	ND	5.5E+00	5.5E+00	NA	NA	ND	7.0E+02	0	7.9E-03
	Chloroethane	µg/kg	38	0	0	2.4E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.1E+03	0	3.1E-03
	Chloroform	**µg/kg**	**38**	**5**	**13**	**1.4E-01**	**3.5E+00**	**4.1E-01**	**ND**	**6.3E+00**	**2.2E+01**	**9.1E+00**	**1.4E+00**	**ND**	**1.6E+00**	**0**	**1.4E+01**
	Chloromethane	µg/kg	38	0	0	2.6E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	8.1E+00	0	4.3E-01
	2-Chlorotoluene	µg/kg	38	0	0	3.3E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	5.1E+02	0	6.8E-03
	4-Chlorotoluene	µg/kg	38	0	0	4.5E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Cumene	µg/kg	38	0	0	2.7E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	6.5E+02	0	5.3E-03
	p-Cymene	µg/kg	38	0	0	3.3E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	6.5E+02	0	5.3E-03
	1,2-Dibromo-3-chloropropane	µg/kg	38	0	0	4.6E-01	6.0E+00	ND	ND	ND	ND	ND	NA	ND	5.3E-02	0	1.1E+02
	Dibromochloromethane	µg/kg	38	0	0	1.1E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	6.0E+00	0	5.7E-01
	1,2-Dibromoethane	µg/kg	38	0	0	1.4E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.8E-01	0	1.9E+01
	Dibromomethane	µg/kg	38	0	0	3.1E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.9E+02	0	1.8E-02
	1,2-Dichlorobenzene	µg/kg	38	1	3	3.4E-01	3.5E+00	5.6E-01	ND	5.6E-01	5.6E-01	NA	NA	ND	3.7E+02	0	9.2E-03
	1,3-Dichlorobenzene	µg/kg	38	0	0	1.6E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	3.7E+02	0	9.2E-03
	1,4-Dichlorobenzene	**µg/kg**	**38**	**4**	**11**	**4.1E-01**	**3.5E+00**	**1.9E+00**	**ND**	**1.0E+01**	**1.7E+01**	**6.3E+00**	**6.3E-01**	**ND**	**1.4E+01**	**0**	**1.3E+00**
	Dichlorodifluoromethane	µg/kg	38	0	0	4.7E-01	6.0E+00	ND	ND	ND	ND	ND	NA	ND	3.4E+02	0	1.8E-02
	1,1-Dichloroethane	µg/kg	38	0	0	1.5E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.1E+01	0	1.6E-01
	1,2-Dichloroethane	µg/kg	38	0	0	3.8E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.2E+00	0	1.5E+00
	1,1-Dichloroethene	µg/kg	38	0	0	1.4E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.3E+03	0	2.7E-03
	cis-1,2-Dichloroethene	µg/kg	38	0	0	4.7E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	7.4E+02	0	4.7E-03
	trans-1,2-Dichloroethene	µg/kg	38	0	0	2.0E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	5.5E+02	0	6.3E-03
	1,2-Dichloropropane	µg/kg	38	0	0	3.2E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	4.3E+00	0	8.0E-01
	1,3-Dichloropropane	µg/kg	38	0	0	3.0E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	6.5E+01	0	5.3E-02
	2,2-Dichloropropane	µg/kg	38	0	0	2.0E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,1-Dichloropropene	µg/kg	38	0	0	2.0E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	cis-1,3-Dichloropropene	µg/kg	38	0	0	3.4E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	trans-1,3-Dichloropropene	µg/kg	38	0	0	3.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,4-Dioxane	µg/kg	69	0	0	2.1E+01	7.5E+02	ND	ND	ND	ND	ND	NA	ND	1.9E+01	0	3.9E+01
	Ethyl tert-butyl ether	µg/kg	38	0	0	1.6E+00	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Ethyl Benzene	µg/kg	37	0	0	1.6E+00	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.0E+01	0	1.8E-01
	2-Hexanone	µg/kg	38	0	0	3.9E-01	7.0E+00	ND	ND	ND	ND	ND	NA	ND	1.9E+03	0	3.6E-03
	Methyl tert-butyl ether	µg/kg	38	0	0	3.2E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.1E+02	0	1.7E-02
	4-Methyl-2-pentanone	µg/kg	38	1	3	4.8E-01	7.0E+00	1.6E+00	ND	1.6E+00	1.6E+00	NA	NA	ND	1.7E+04	0	4.1E-04
	Methylene Chloride	µg/kg	38	7	18	4.4E-01	3.5E+00	4.8E-01	ND	1.1E+00	1.7E+00	4.4E-01	4.2E-01	ND	5.9E+01	0	5.9E-02
	Diisopropyl ether	µg/kg	38	0	0	1.6E+00	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	n-Propylbenzene	µg/kg	38	0	0	1.5E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.4E+02	0	1.5E-02
	Styrene	µg/kg	38	0	0	1.6E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.7E+03	0	2.0E-03
	tert Butyl alcohol	µg/kg	38	0	0	2.8E+00	7.0E+01	ND	ND	ND	ND	ND	NA	ND	2.1E+04	0	3.3E-03
	1,1,1,2-Tetrachloroethane	µg/kg	38	0	0	2.2E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.0E+01	0	1.7E-01
	1,1,2,2-Tetrachloroethane	µg/kg	38	0	0	3.6E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.5E+00	1	1.4E+00
	Tetrachloroethene	µg/kg	38	0	0	3.2E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	3.3E+00	0	1.1E+00
	Toluene	µg/kg	38	7	18	3.2E-01	3.5E+00	2.8E-01	ND	9.8E-01	3.2E+00	1.0E+00	1.0E+00	ND	5.2E+02	0	6.6E-03
	1,2,3-Trichlorobenzene	µg/kg	38	0	0	3.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	1,2,4-Trichlorobenzene	µg/kg	38	2	5	1.6E+00	3.5E+00	1.1E+00	ND	1.3E+00	1.5E+00	2.8E-01	2.2E-01	ND	1.1E+02	0	3.1E-02
	1,1,1-Trichloroethane	µg/kg	38	0	0	1.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.4E+03	0	2.5E-03
	1,1,2-Trichloroethane	µg/kg	38	0	0	2.3E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	5.5E+00	0	6.3E-01
	Trichloroethene	µg/kg	38	0	0	3.2E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	5.5E+00	0	6.3E-01
	Trichlorofluoromethane	µg/kg	38	0	0	1.8E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.0E+03	0	1.7E-03
	1,2,3-Trichloropropane	µg/kg	38	0	0	4.0E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.1E-01	0	3.3E+01
	1,2,4-Trimethylbenzene	µg/kg	38	1	3	2.7E-01	3.5E+00	5.9E-01	ND	5.9E-01	5.9E-01	NA	NA	ND	6.0E+02	0	5.7E-03
	1,3,5-Trimethylbenzene	µg/kg	38	0	0	1.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.5E+02	0	1.4E-02
	Vinyl Chloride	µg/kg	38	0	0	1.9E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	1.9E+00	0	1.9E+00
	m,p-xylene	µg/kg	32	1	3	4.3E-01	3.5E+00	2.6E+00	ND	2.6E+00	2.6E+00	NA	NA	ND	--	0	--
	ortho-xylene	µg/kg	32	0	0	1.8E-01	3.5E+00	ND	ND	ND	ND	ND	NA	ND	2.8E+02	0	1.2E-02
	Xylenes (total)	µg/kg	6	0	0	5.5E+00	6.0E+00	ND	ND	ND	ND	ND	NA	ND	2.1E+02	0	2.8E-02
SVOCs	t-Amyl methyl ether	µg/kg	38	0	0	1.6E+00	3.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	bis(2-Ethylhexyl)phthalate	**µg/kg**	**70**	**11**	**16**	**2.3E+01**	**1.9E+03**	**6.8E+01**	**ND**	**1.6E+02**	**6.5E+02**	**1.7E+02**	**1.1E+00**	**ND**	**1.4E+02**	**0**	**1.4E+01**
	Butylbenzylphthalate	**µg/kg**	**70**	**5**	**7**	**2.0E+01**	**1.9E+03**	**2.8E+00**	**ND**	**3.0E+03**	**1.5E+04**	**6.7E+03**	**2.2E+00**	**ND**	**2.4E+02**	**0**	**6.3E+01**

TABLE D-2. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
SVOCs	Diethylphthalate	µg/kg	70	0	0	1.2E+01	1.9E+03	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	1.9E-02
	Dimethoate	µg/kg	10	0	0	1.1E+01	1.4E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Dimethylphthalate	µg/kg	70	2	3	1.2E+01	1.9E+03	3.9E+00	ND	1.3E+01	2.2E+01	1.3E+01	9.9E-01	ND	1.0E+05	0	1.9E-02
	Di-n-butylphthalate	µg/kg	70	6	9	1.4E+01	1.9E+03	4.1E+01	ND	6.3E+01	8.0E+01	1.8E+01	2.8E-01	ND	6.8E+04	0	2.8E-02
	Di-n-octylphthalate	µg/kg	70	0	0	7.0E+00	1.9E+03	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Disulfoton	µg/kg	10	0	0	2.4E+01	3.0E+01	ND	ND	ND	ND	ND	NA	ND	2.7E+01	0	1.1E+00
	Famphur	µg/kg	10	0	0	6.5E+00	8.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Hexachlorobutadiene	µg/kg	38	2	5	1.6E+00	3.5E+00	1.1E+00	ND	1.7E+00	2.2E+00	7.8E-01	4.7E-01	ND	2.5E+01	0	1.4E-01
	Methyl parathion	µg/kg	10	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	1.7E+02	0	7.3E-02
	1-Methylnaphthalene	µg/kg	7	5	71	2.9E-01	9.0E+00	1.1E+00	ND	1.7E+01	2.7E+01	1.1E+01	6.4E-01	ND	--	0	--
	2-Methylnaphthalene	µg/kg	80	6	8	2.8E-01	2.2E+02	1.3E+00	ND	2.3E+01	5.6E+01	2.1E+01	9.2E-01	ND	--	0	--
	Nitrobenzene	µg/kg	70	0	0	3.4E+00	2.1E+02	ND	ND	ND	ND	ND	NA	ND	1.4E+01	0	1.5E+01
	Parathion	µg/kg	10	0	0	9.0E+00	1.1E+01	ND	ND	ND	ND	ND	NA	ND	4.1E+03	0	2.7E-03
	Phorate	µg/kg	10	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Sulfotepp	µg/kg	10	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Thionazin	µg/kg	10	0	0	9.0E+00	1.1E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
PAHs	Acenaphthene	µg/kg	80	1	1	2.8E-01	2.2E+02	5.4E+00	ND	5.4E+00	5.4E+00	NA	NA	ND	2.4E+03	0	9.1E-02
	Acenaphthylene	µg/kg	80	7	9	2.0E-01	2.2E+02	8.8E+00	ND	2.8E+01	5.2E+01	1.6E+01	5.6E-01	ND	1.5E+02	0	1.5E+00
	Anthracene	µg/kg	80	7	9	2.4E-01	2.2E+02	1.2E+01	ND	3.7E+01	8.0E+01	2.5E+01	6.9E-01	ND	9.1E+03	0	2.4E-02
	Benzo(a)anthracene	**µg/kg**	**80**	**29**	**36**	**3.5E+00**	**2.1E+02**	**7.9E-01**	**ND**	**1.6E+02**	**9.0E+02**	**2.6E+02**	**1.6E+00**	**ND**	**2.3E+00**	**0**	**3.8E+02**
	Benzo(a)pyrene	**µg/kg**	**80**	**18**	**23**	**2.4E-01**	**2.1E+02**	**1.5E+00**	**ND**	**2.5E+02**	**9.3E+02**	**3.1E+02**	**1.2E+00**	**ND**	**2.3E-01**	**7**	**4.0E+03**
	Benzo(a)pyrene TEQ	µg/kg	22	22	100	--	--	8.9E-01	ND	3.1E+02	1.4E+03	4.0E+02	1.3E+00	ND	--	0	--
	Benzo(b)fluoranthene	**µg/kg**	**80**	**29**	**36**	**3.5E+00**	**2.1E+02**	**1.3E+00**	**ND**	**3.2E+02**	**1.6E+03**	**5.1E+02**	**1.6E+00**	**ND**	**2.3E+00**	**0**	**6.8E+02**
	Benzo(g,h,i)perylene	µg/kg	80	23	29	6.0E-01	2.1E+02	4.2E+00	ND	2.0E+02	7.9E+02	2.7E+02	1.3E+00	ND	3.4E+04	0	2.3E-02
	Benzo(k)fluoranthene	**µg/kg**	**80**	**19**	**24**	**4.6E-01**	**2.1E+02**	**1.6E+00**	**ND**	**2.4E+02**	**1.4E+03**	**4.3E+02**	**1.8E+00**	**ND**	**2.3E+01**	**0**	**6.0E+01**
	Chrysene	**µg/kg**	**80**	**31**	**39**	**3.5E+00**	**2.1E+02**	**1.2E+00**	**ND**	**2.4E+02**	**1.4E+03**	**4.0E+02**	**1.7E+00**	**ND**	**2.3E+02**	**0**	**6.0E+00**
	Dibenz(a,h)anthracene	**µg/kg**	**79**	**8**	**10**	**7.0E-01**	**2.1E+02**	**4.6E+00**	**ND**	**8.1E+01**	**2.0E+02**	**7.0E+01**	**8.6E-01**	**ND**	**2.3E-01**	**0**	**8.8E+02**
	Fluoranthene	µg/kg	80	31	39	3.5E+00	2.1E+02	1.8E+00	ND	2.8E+02	1.7E+03	4.8E+02	1.7E+00	ND	2.4E+04	0	7.0E-02
	Fluorene	µg/kg	80	0	0	2.9E-01	2.4E+02	ND	ND	ND	ND	ND	NA	ND	3.4E+03	0	6.8E-02
	Hexachlorobenzene	**µg/kg**	**115**	**68**	**59**	**9.0E-01**	**2.3E+02**	**6.3E-01**	**ND**	**1.5E+04**	**3.0E+05**	**4.8E+04**	**3.3E+00**	**ND**	**1.2E+00**	**23**	**2.5E+05**
	Indeno(1,2,3-cd)pyrene	**µg/kg**	**80**	**21**	**26**	**2.9E-01**	**2.1E+02**	**1.2E+00**	**ND**	**2.0E+02**	**8.7E+02**	**2.8E+02**	**1.4E+00**	**ND**	**2.3E+00**	**0**	**3.7E+02**
	Naphthalene	**µg/kg**	**118**	**7**	**6**	**2.0E-01**	**2.1E+02**	**1.4E+00**	**ND**	**1.5E+01**	**4.9E+01**	**1.6E+01**	**1.1E+00**	**ND**	**1.6E+01**	**0**	**1.3E+01**
	Phenanthrene	**µg/kg**	**80**	**23**	**29**	**3.5E+00**	**2.4E+02**	**1.8E+00**	**ND**	**1.1E+02**	**6.0E+02**	**1.7E+02**	**1.6E+00**	**ND**	**2.5E+01**	**0**	**2.4E+01**
	Pyrene	µg/kg	80	37	46	3.5E+00	2.1E+02	1.7E+00	ND	2.3E+02	1.7E+03	4.3E+02	1.9E+00	ND	1.9E+04	0	8.8E-02
	Pyridine	µg/kg	70	0	0	3.4E+01	1.0E+03	ND	ND	ND	ND	ND	NA	ND	6.7E+02	0	1.5E+00
Organochlorine Pesticides	Aldrin	µg/kg	25	0	0	1.3E-01	9.0E+03	ND	ND	ND	ND	ND	NA	ND	1.1E-01	2	8.0E+04
	alpha-BHC	µg/kg	25	1	4	1.3E-01	9.0E+03	2.2E+00	ND	2.2E+00	2.2E+00	NA	NA	ND	2.7E+02	0	3.3E+01
	beta-BHC	**µg/kg**	**25**	**11**	**44**	**3.8E-01**	**9.0E+03**	**1.0E+00**	**ND**	**2.8E+02**	**1.3E+03**	**4.9E+02**	**1.7E+00**	**ND**	**5.4E+01**	**0**	**1.7E+02**
	delta-BHC	µg/kg	25	0	0	2.1E-01	9.0E+03	ND	ND	ND	ND	ND	NA	ND	2.7E+02	0	3.3E+01
	gamma-BHC	µg/kg	25	0	0	2.4E-01	9.0E+03	ND	ND	ND	ND	ND	NA	ND	9.0E+00	1	1.0E+03
	Chlordane (total)	µg/kg	24	0	0	1.1E-01	4.4E+04	ND	ND	ND	ND	ND	NA	ND	7.2E+00	1	6.1E+03
	alpha-Chlordane	µg/kg	25	0	0	1.7E-01	9.0E+03	ND	ND	ND	ND	ND	NA	ND	--	0	--
	gamma-Chlordane	µg/kg	25	2	8	1.4E-01	9.0E+03	7.5E+00	ND	1.9E+01	3.1E+01	1.7E+01	8.6E-01	ND	--	0	--
	4,4'-DDD	µg/kg	25	0	0	2.9E-01	1.8E+04	ND	ND	ND	ND	ND	NA	ND	1.1E+01	1	1.6E+03
	4,4'-DDE	**µg/kg**	**25**	**3**	**12**	**1.4E-01**	**1.8E+04**	**2.2E+01**	**ND**	**7.9E+02**	**2.2E+03**	**1.2E+03**	**1.6E+00**	**ND**	**7.8E+00**	**1**	**2.2E+03**
	4,4'-DDT	**µg/kg**	**25**	**4**	**16**	**3.4E-01**	**1.8E+04**	**4.0E+00**	**ND**	**2.8E+02**	**9.9E+02**	**4.8E+02**	**1.7E+00**	**ND**	**7.8E+00**	**1**	**2.2E+03**
	Dieldrin	µg/kg	25	0	0	1.1E-01	1.8E+04	ND	ND	ND	ND	ND	NA	ND	1.2E-01	1	1.5E+05
	Endosulfan I	µg/kg	25	0	0	9.0E-02	9.0E+03	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Endosulfan II	µg/kg	25	0	0	1.5E-01	1.8E+04	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Endosulfan sulfate	µg/kg	25	0	0	1.5E-01	1.8E+04	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Endrin	µg/kg	25	0	0	1.6E-01	1.8E+04	ND	ND	ND	ND	ND	NA	ND	2.1E+02	0	8.5E+01
	Endrin aldehyde	µg/kg	25	0	0	9.0E-02	1.8E+04	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Endrin ketone	µg/kg	25	1	4	2.8E-01	1.8E+04	3.2E+01	ND	3.2E+01	3.2E+01	NA	NA	ND	--	0	--
	Heptachlor	**µg/kg**	**25**	**1**	**4**	**1.1E-01**	**9.0E+03**	**9.3E+02**	**ND**	**9.3E+02**	**9.3E+02**	**NA**	**NA**	**ND**	**4.3E-01**	**2**	**2.1E+04**
	Heptachlor epoxide	µg/kg	25	0	0	2.2E-01	9.0E+03	ND	ND	ND	ND	ND	NA	ND	2.1E-01	1	4.3E+04
	Methoxychlor	µg/kg	25	1	4	2.4E-01	9.0E+04	7.6E+00	ND	7.6E+00	7.6E+00	NA	NA	ND	3.4E+03	0	2.6E+01
	Octachlorostyrene	µg/kg	68	24	35	3.4E+00	2.1E+02	1.1E+01	ND	6.4E+02	9.3E+03	1.9E+03	2.9E+00	ND	--	0	--
	Toxaphene	µg/kg	25	0	0	8.0E+00	1.8E+05	ND	ND	ND	ND	ND	NA	ND	1.7E+00	2	1.0E+05
Organophosphorus Pesticides	Azinphos-methyl	µg/kg	10	0	0	6.5E+00	8.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Chlorpyrifos	µg/kg	10	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	2.1E+03	0	6.1E-03
	Coumaphos	µg/kg	10	0	0	6.5E+00	8.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Dichlorovos	µg/kg	10	0	0	1.2E+01	1.5E+01	ND	ND	ND	ND	ND	NA	ND	6.6E+00	0	2.2E+00
	Demeton-O	µg/kg	10	0	0	2.0E+01	2.4E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Demeton-S	µg/kg	10	0	0	7.5E+00	9.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Diazinon	µg/kg	10	0	0	1.1E+01	1.4E+01	ND	ND	ND	ND	ND	NA	ND	6.2E+02	0	2.2E-02
	Ethyl p-nitrophenyl phenylphosphorothioate (EPN)	µg/kg	10	0	0	6.5E+00	8.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Fensulfothion	µg/kg	10	0	0	7.0E+00	1.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Fenthion	µg/kg	10	0	0	1.7E+01	2.1E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Malathion	µg/kg	10	0	0	7.5E+00	9.5E+00	ND	ND	ND	ND	ND	NA	ND	1.4E+04	0	6.9E-04
	Merphos	µg/kg	10	0	0	1.5E+01	1.9E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--

TABLE D-2. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Organophosphorus Pesticides	Naled	µg/kg	10	0	0	1.8E+01	3.5E+01	ND	ND	ND	ND	ND	NA	ND	1.4E+03	0	2.6E-02
	Prothiophos	µg/kg	10	0	0	1.0E+01	1.3E+01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Ronnel	µg/kg	10	0	0	1.0E+01	2.3E+01	ND	ND	ND	ND	ND	NA	ND	3.4E+04	0	6.7E-04
	Stirphos	µg/kg	10	0	0	7.5E+00	9.5E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Sulprofos	µg/kg	10	0	0	6.5E+00	8.0E+00	ND	ND	ND	ND	ND	NA	ND	--	0	--
Organic Acids	Benzenesulfonic Acid	µg/kg	4	0	0	2.5E+02	2.5E+02	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	2.5E-03
Polychlorinated Biphenyls	**PCBs (total)**	**µg/kg**	**3**	**3**	**100**	**--**	**--**	**2.4E+01**	**ND**	**1.3E+02**	**2.5E+02**	**1.1E+02**	**8.3E-01**	**ND**	**8.3E-01**	**0**	**3.0E+02**
	PCB TEQ (total)	µg/kg	4	4	100	--	--	4.1E-05	ND	6.8E-03	2.5E-02	1.2E-02	1.8E+00	ND	--	0	--
	Aroclor-1016	µg/kg	14	0	0	1.7E+01	2.1E+01	ND	ND	ND	ND	ND	NA	ND	2.4E+01	0	8.7E-01
	Aroclor-1221	µg/kg	14	0	0	1.8E+01	3.7E+01	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	4.4E+01
	Aroclor-1232	µg/kg	14	0	0	1.7E+01	2.1E+01	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	2.5E+01
	Aroclor-1242	µg/kg	14	0	0	1.7E+01	2.1E+01	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	2.5E+01
	Aroclor-1248	µg/kg	14	0	0	1.7E+01	2.1E+01	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	2.5E+01
	Aroclor-1254	µg/kg	14	0	0	1.7E+01	2.1E+01	ND	ND	ND	ND	ND	NA	ND	8.3E-01	0	2.5E+01
	Aroclor-1260	**µg/kg**	**14**	**2**	**14**	**1.7E+01**	**2.1E+01**	**5.1E+01**	**ND**	**1.6E+02**	**2.7E+02**	**1.5E+02**	**9.6E-01**	**ND**	**8.3E-01**	**0**	**3.3E+02**
	Monochlorobiphenyl	µg/kg	3	3	100	--	--	1.9E-01	ND	3.3E-01	4.7E-01	1.4E-01	4.4E-01	ND	--	0	--
	PCB-001 (2-CB)	µg/kg	7	6	86	9.5E-03	9.5E-03	1.0E-03	ND	5.8E-02	1.5E-01	5.6E-02	9.6E-01	ND	--	0	--
	PCB-002 (3-CB)	µg/kg	7	7	100	--	--	1.3E-03	ND	6.3E-02	1.9E-01	6.3E-02	1.0E+00	ND	--	0	--
	PCB-003 (4-CB)	µg/kg	7	7	100	--	--	1.1E-03	ND	8.5E-02	1.5E-01	6.1E-02	7.2E-01	ND	--	0	--
	PCB-209 (DeCB)	µg/kg	7	7	100	--	--	1.6E-01	ND	3.0E+01	1.3E+02	4.7E+01	1.6E+00	ND	--	0	--
	Dichlorobiphenyl (total)	µg/kg	3	3	100	--	--	2.1E+00	ND	4.7E+00	8.7E+00	3.5E+00	7.5E-01	ND	--	0	--
	PCB-004 (2,2'-DiCB)	µg/kg	7	4	57	1.0E-02	1.0E-01	1.5E-03	ND	2.4E-01	6.8E-01	3.1E-01	1.3E+00	ND	--	0	--
	PCB-005 (2,3-DiCB)	µg/kg	7	5	71	4.5E-03	4.8E-03	3.7E-03	ND	7.3E-02	1.6E-01	7.2E-02	9.9E-01	ND	--	0	--
	PCB-006 (2,3'-DiCB)	µg/kg	7	7	100	--	--	1.7E-03	ND	1.1E-01	4.0E-01	1.4E-01	1.2E+00	ND	--	0	--
	PCB-007 (2,4-DiCB)	µg/kg	7	3	43	4.8E-03	1.0E-01	4.1E-02	ND	4.3E-02	4.6E-02	2.4E-03	5.4E-02	ND	--	0	--
	PCB-008 (2,4'-DiCB)	µg/kg	7	6	86	1.0E-02	1.0E-02	1.4E-02	ND	3.0E-01	7.2E-01	2.6E-01	8.7E-01	ND	--	0	--
	PCB-009 (2,5-DiCB)	µg/kg	7	3	43	4.8E-03	1.0E-01	4.1E-02	ND	8.3E-02	1.6E-01	6.6E-02	8.0E-01	ND	--	0	--
	PCB-010 (2,6-DiCB)	µg/kg	7	3	43	4.5E-03	1.0E-01	1.5E-03	ND	1.6E-02	4.0E-02	2.1E-02	1.4E+00	ND	--	0	--
	PCB-011 (3,3'-DiCB)	µg/kg	7	2	29	9.5E-03	3.8E-01	5.3E-03	ND	3.6E+00	7.3E+00	5.1E+00	1.4E+00	ND	--	0	--
	PCB-012 (3,4-DiCB)	µg/kg	4	4	100	--	--	2.0E-03	ND	6.4E-02	1.5E-01	7.0E-02	1.1E+00	ND	--	0	--
	PCB-013 (3,4'-DiCB)	µg/kg	4	4	100	--	--	2.0E-03	ND	6.4E-02	1.5E-01	7.0E-02	1.1E+00	ND	--	0	--
	PCB-014 (3,5-DiCB)	µg/kg	7	2	29	9.0E-03	1.0E-01	3.5E-03	ND	1.9E-02	3.5E-02	2.2E-02	1.2E+00	ND	--	0	--
	PCB-015 (4,4'-DiCB)	µg/kg	7	6	86	4.8E-02	4.8E-02	4.4E-03	ND	2.2E-01	6.0E-01	2.4E-01	1.1E+00	ND	--	0	--
	Heptachlorobiphenyl	µg/kg	3	3	100	--	--	1.7E+00	ND	1.3E+01	1.9E+01	9.9E+00	7.5E-01	ND	--	0	--
	PCB-170 (2,2',3,3',4,4',5-HpCB)	µg/kg	7	6	86	1.0E-03	1.0E-03	1.4E-01	ND	2.6E+00	1.1E+01	4.2E+00	1.6E+00	ND	--	0	--
	PCB-171 (2,2',3,3',4,4',6-HpCB)	µg/kg	4	4	100	--	--	7.5E-03	ND	1.0E+00	3.6E+00	1.7E+00	1.6E+00	ND	--	0	--
	PCB-172 (2,2',3,3',4,5,5'-HpCB)	µg/kg	7	7	100	--	--	5.4E-03	ND	8.1E-01	3.5E+00	1.3E+00	1.6E+00	ND	--	0	--
	PCB-173 (2,2',3,3',4,5,6-HpCB)	µg/kg	4	4	100	--	--	6.7E-04	ND	1.1E-01	4.1E-01	2.0E-01	1.7E+00	ND	--	0	--
	PCB-174 (2,2',3,3',4,5,6'-HpCB)	µg/kg	7	7	100	--	--	3.2E-02	ND	2.8E+00	1.5E+01	5.4E+00	1.9E+00	ND	--	0	--
	PCB-175 (2,2',3,3',4,5',6-HpCB)	µg/kg	7	7	100	--	--	2.4E-03	ND	3.7E-01	1.3E+00	5.2E-01	1.4E+00	ND	--	0	--
	PCB-177 (2,2',3,3',4,5',6'-HpCB)	µg/kg	7	7	100	--	--	1.6E-02	ND	1.6E+00	8.1E+00	2.9E+00	1.8E+00	ND	--	0	--
	PCB-176 (2,2',3,3',4,6,6'-HpCB)	µg/kg	7	7	100	--	--	4.8E-03	ND	4.4E-01	1.8E+00	6.3E-01	1.4E+00	ND	--	0	--
	PCB-178 (2,2',3,3',5,5',6-HpCB)	µg/kg	7	7	100	--	--	9.3E-03	ND	6.7E-01	3.0E+00	1.1E+00	1.6E+00	ND	--	0	--
	PCB-179 (2,2',3,3',5,6,6'-HpCB)	µg/kg	7	6	86	1.0E-02	1.0E-02	1.7E-01	ND	1.2E+00	4.9E+00	1.8E+00	1.5E+00	ND	--	0	--
	PCB-180 (2,2',3,4,4',5,5'-HpCB)	µg/kg	4	3	75	1.0E-03	1.0E-03	1.7E+00	ND	9.8E+00	2.6E+01	1.4E+01	1.4E+00	ND	--	0	--
	PCB-181 (2,2',3,4,4',5,6-HpCB)	µg/kg	7	2	29	9.5E-03	1.0E-01	7.4E-02	ND	2.6E-01	4.4E-01	2.6E-01	1.0E+00	ND	--	0	--
	PCB-182 (2,2',3,4,4',5,6'-HpCB)	µg/kg	7	7	100	--	--	5.9E-03	ND	1.9E+00	1.1E+01	4.0E+00	2.1E+00	ND	--	0	--
	PCB-183 (2,2',3,4,4',5',6-HpCB)	µg/kg	7	7	100	--	--	2.0E-02	ND	1.7E+00	8.1E+00	2.9E+00	1.6E+00	ND	--	0	--
	PCB-184 (2,2',3,4,4',6,6'-HpCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	8.3E-03	ND	3.8E-01	9.1E-01	4.3E-01	1.1E+00	ND	--	0	--
	PCB-185 (2,2',3,4,5,5',6-HpCB)	µg/kg	7	6	86	9.0E-02	9.0E-02	4.4E-03	ND	5.2E-01	2.2E+00	8.3E-01	1.6E+00	ND	--	0	--
	PCB-186 (2,2',3,4,5,6,6'-HpCB)	µg/kg	7	5	71	9.5E-03	9.0E-02	3.7E-04	ND	5.6E-02	1.5E-01	7.1E-02	1.3E+00	ND	--	0	--
	PCB-187 (2,2',3,4',5,5',6-HpCB)	µg/kg	7	7	100	--	--	4.0E-02	ND	2.4E+00	1.1E+01	3.9E+00	1.6E+00	ND	--	0	--
	PCB-188 (2,2',3,4',5,6,6'-HpCB)	µg/kg	7	6	86	9.5E-03	9.5E-03	7.9E-04	ND	1.7E-01	5.3E-01	2.2E-01	1.3E+00	ND	--	0	--
	PCB-189 (2,3,3',4,4',5,5'-HpCB)	µg/kg	7	4	57	1.0E-03	4.5E-02	2.9E-02	ND	4.9E-01	9.5E-01	4.4E-01	9.0E-01	ND	--	0	--
	PCB-190 (2,3,3',4,4',5,6-HpCB)	µg/kg	7	7	100	--	--	2.6E-02	ND	1.9E+00	1.1E+01	4.0E+00	2.1E+00	ND	--	0	--
	PCB-191 (2,3,3',4,4',5',6-HpCB)	µg/kg	7	6	86	9.0E-02	9.0E-02	1.7E-03	ND	2.9E-01	9.2E-01	3.8E-01	1.3E+00	ND	--	0	--
	PCB-192 (2,3,3',4,5,5',6-HpCB)	µg/kg	7	4	57	9.5E-03	9.0E-02	6.4E-02	ND	1.0E+00	3.5E+00	1.6E+00	1.6E+00	ND	--	0	--
	PCB-193 (2,3,3',4',5,5',6-HpCB)	µg/kg	4	4	100	--	--	3.4E-03	ND	6.2E-01	2.2E+00	1.1E+00	1.7E+00	ND	--	0	--
	Hexachlorobiphenyl	µg/kg	3	2	67	9.0E-02	9.0E-02	1.6E+01	ND	2.4E+01	3.1E+01	1.1E+01	4.6E-01	ND	--	0	--
	PCB-128 (2,2',3,3',4,4'-HxCB)	µg/kg	4	4	100	--	--	6.3E-03	ND	5.6E-01	1.9E+00	9.0E-01	1.6E+00	ND	--	0	--
	PCB-129 (2,2',3,3',4,5-HxCB)	µg/kg	4	4	100	--	--	3.0E-03	ND	2.8E-01	1.0E+00	4.8E-01	1.7E+00	ND	--	0	--
	PCB-130 (2,2',3,3',4,5'-HxCB)	µg/kg	7	6	86	2.4E-02	2.4E-02	3.5E-03	ND	3.3E-01	1.2E+00	4.8E-01	1.4E+00	ND	--	0	--
	PCB-131 (2,2',3,3',4,6-HxCB)	µg/kg	7	4	57	9.5E-03	1.0E-02	3.9E-03	ND	1.9E-01	4.3E-01	1.8E-01	9.5E-01	ND	--	0	--
	PCB-132 (2,2',3,3',4,6'-HxCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	2.2E-02	ND	1.2E+00	5.5E+00	2.1E+00	1.8E+00	ND	--	0	--
	PCB-133 (2,2',3,3',5,5'-HxCB)	µg/kg	7	7	100	--	--	1.1E-03	ND	1.1E-01	3.7E-01	1.4E-01	1.3E+00	ND	--	0	--
	PCB-134 (2,2',3,3',5,6-HxCB)	µg/kg	7	7	100	--	--	3.7E-03	ND	2.5E-01	9.9E-01	3.6E-01	1.4E+00	ND	--	0	--
	PCB-135 (2,2',3,3',5,6'-HxCB)	µg/kg	4	4	100	--	--	1.5E-02	ND	1.2E+00	4.3E+00	2.0E+00	1.6E+00	ND	--	0	--
	PCB-136 (2,2',3,3',6,6'-HxCB)	µg/kg	7	7	100	--	--	8.4E-03	ND	5.7E-01	2.5E+00	9.0E-01	1.6E+00	ND	--	0	--
	PCB-137 (2,2',3,4,4',5-HxCB)	µg/kg	7	7	100	--	--	1.4E-03	ND	1.7E-01	4.3E-01	2.0E-01	1.1E+00	ND	--	0	--
	PCB-138 (2,2',3,4,4',5'-HxCB)	µg/kg	4	3	75	9.5E-03	9.5E-03	7.6E-02	ND	6.8E+00	1.9E+01	1.1E+01	1.5E+00	ND	--	0	--

TABLE D-2. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Polychlorinated Biphenyls	PCB-139 (2,2',3,4,4',6-HxCB)	µg/kg	4	4	100	--	--	8.6E-02	ND	5.6E+00	1.9E+01	9.0E+00	1.6E+00	ND	--	0	--
	PCB-140 (2,2',3,4,4',6'-HxCB)	µg/kg	4	4	100	--	--	5.0E-04	ND	4.9E-02	1.8E-01	8.8E-02	1.8E+00	ND	--	0	--
	PCB-141 (2,2',3,4,5,5'-HxCB)	µg/kg	7	5	71	9.7E-03	1.8E-02	2.3E-02	ND	1.8E+00	7.2E+00	3.0E+00	1.7E+00	ND	--	0	--
	PCB-142 (2,2',3,4,5,6-HxCB)	µg/kg	7	3	43	9.5E-03	9.0E-02	1.2E-01	ND	2.9E-01	4.3E-01	1.6E-01	5.5E-01	ND	--	0	--
	PCB-143 (2,2',3,4,5,6'-HxCB)	µg/kg	7	1	14	9.5E-03	1.0E-01	1.2E-01	ND	1.2E-01	1.2E-01	NA	NA	ND	--	0	--
	PCB-144 (2,2',3,4,5',6-HxCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	2.1E-02	ND	1.0E+00	4.3E+00	1.8E+00	1.8E+00	ND	--	0	--
	PCB-145 (2,2',3,4,6,6'-HxCB)	µg/kg	7	5	71	9.5E-03	9.0E-02	1.7E-04	ND	3.3E-02	7.2E-02	3.6E-02	1.1E+00	ND	--	0	--
	PCB-146 (2,2',3,4',5,5'-HxCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	1.2E-02	ND	1.1E+00	3.8E+00	1.4E+00	1.3E+00	ND	--	0	--
	PCB-147 (2,2',3,4',5,6-HxCB)	µg/kg	4	3	75	9.5E-03	9.5E-03	9.0E-04	ND	9.8E-02	2.8E-01	1.6E-01	1.6E+00	ND	--	0	--
	PCB-148 (2,2',3,4',5,6'-HxCB)	µg/kg	7	4	57	9.5E-03	9.0E-02	6.6E-03	ND	1.3E-01	2.7E-01	1.4E-01	1.1E+00	ND	--	0	--
	PCB-149 (2,2',3,4',5',6-HxCB)	µg/kg	4	4	100	--	--	8.6E-02	ND	5.6E+00	1.9E+01	9.0E+00	1.6E+00	ND	--	0	--
	PCB-150 (2,2',3,4',6,6'-HxCB)	µg/kg	7	5	71	9.5E-03	9.0E-02	4.4E-04	ND	7.5E-02	1.8E-01	8.2E-02	1.1E+00	ND	--	0	--
	PCB-151 (2,2',3,5,5',6-HxCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	4.1E-01	ND	2.4E+00	6.3E+00	3.4E+00	1.4E+00	ND	--	0	--
	PCB-152 (2,2',3,5,6,6'-HxCB)	µg/kg	7	4	57	9.5E-03	9.0E-02	1.5E-03	ND	3.1E-02	5.5E-02	2.4E-02	7.9E-01	ND	--	0	--
	PCB-153 (2,2',4,4',5,5'-HxCB)	µg/kg	4	4	100	--	--	7.2E-02	ND	5.5E+00	1.9E+01	9.0E+00	1.6E+00	ND	--	0	--
	PCB-154 (2,2',4,4',5,6'-HxCB)	µg/kg	7	7	100	--	--	9.9E-04	ND	1.2E-01	4.0E-01	1.7E-01	1.3E+00	ND	--	0	--
	PCB-155 (2,2',4,4',6,6'-HxCB)	µg/kg	7	5	71	9.5E-03	9.0E-02	2.6E-04	ND	5.5E-02	1.4E-01	6.3E-02	1.2E+00	ND	--	0	--
	PCB-156 (2,3,3',4,4',5-HxCB)	µg/kg	4	4	100	--	--	4.2E-03	ND	4.2E-01	1.5E+00	7.2E-01	1.7E+00	ND	--	0	--
	PCB-157 (2,3,3',4,4',5'-HxCB)	µg/kg	4	4	100	--	--	7.1E-04	ND	8.3E-02	3.0E-01	1.4E-01	1.7E+00	ND	--	0	--
	PCB-158 (2,3,3',4,4',6-HxCB)	µg/kg	7	7	100	--	--	9.1E-03	ND	6.6E-01	2.8E+00	9.9E-01	1.5E+00	ND	--	0	--
	PCB-159 (2,3,3',4,5,5'-HxCB)	µg/kg	7	4	57	9.5E-03	9.0E-02	3.1E-02	ND	3.0E-01	6.9E-01	3.0E-01	1.0E+00	ND	--	0	--
	PCB-160 (2,3,3',4,5,6-HxCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	9.1E-03	ND	6.0E-01	2.8E+00	1.1E+00	1.8E+00	ND	--	0	--
	PCB-161 (2,3,3',4,5',6-HxCB)	µg/kg	7	3	43	9.5E-03	9.0E-02	4.0E-02	ND	1.6E-01	2.7E-01	1.2E-01	7.3E-01	ND	--	0	--
	PCB-162 (2,3,3',4',5,5'-HxCB)	µg/kg	7	6	86	9.0E-02	9.0E-02	9.3E-04	ND	1.9E-01	5.1E-01	2.4E-01	1.3E+00	ND	--	0	--
	PCB-163 (2,3,3',4',5,6-HxCB)	µg/kg	4	4	100	--	--	7.6E-02	ND	5.6E+00	1.9E+01	9.0E+00	1.6E+00	ND	--	0	--
	PCB-164 (2,3,3',4',5',6-HxCB)	µg/kg	7	6	86	9.5E-03	9.5E-03	2.1E-02	ND	3.6E+00	1.9E+01	7.6E+00	2.1E+00	ND	--	0	--
	PCB-165 (2,3,3',5,5',6-HxCB)	µg/kg	7	2	29	9.5E-03	9.0E-02	1.7E-01	ND	3.0E-01	4.3E-01	1.9E-01	6.2E-01	ND	--	0	--
	PCB-166 (2,3,4,4',5,6-HxCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	3.5E-03	ND	6.1E-02	1.7E-01	9.4E-02	1.5E+00	ND	--	0	--
	PCB-167 (2,3',4,4',5,5'-HxCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	2.3E-03	ND	3.3E-01	8.7E-01	3.7E-01	1.1E+00	ND	--	0	--
	PCB-168 (2,3',4,4',5',6-HxCB)	µg/kg	4	4	100	--	--	2.2E-02	ND	1.6E+00	5.5E+00	2.6E+00	1.6E+00	ND	--	0	--
	PCB-169 (3,3',4,4',5,5'-HxCB)	µg/kg	7	4	57	1.0E-03	4.5E-02	2.6E-03	ND	7.0E-02	1.5E-01	6.5E-02	9.3E-01	ND	--	0	--
	Nonachlorobiphenyl	µg/kg	3	2	67	9.0E-02	9.0E-02	7.9E+00	ND	2.4E+01	4.1E+01	2.3E+01	9.5E-01	ND	--	0	--
	PCB-206 (2,2',3,3',4,4',5,5',6-NoCB)	µg/kg	7	6	86	9.0E-02	9.0E-02	5.0E-03	ND	4.2E+00	1.3E+01	5.5E+00	1.3E+00	ND	--	0	--
	PCB-207 (2,2',3,3',4,4',5,6,6'-NoCB)	µg/kg	7	7	100	--	--	2.2E-02	ND	5.4E+00	1.8E+01	7.9E+00	1.5E+00	ND	--	0	--
	PCB-208 (2,2',3,3',4,5,5',6,6'-NoCB)	µg/kg	7	6	86	9.0E-02	9.0E-02	1.5E-02	ND	3.1E+00	9.9E+00	4.2E+00	1.3E+00	ND	--	0	--
	Octachlorobiphenyl	µg/kg	3	2	67	9.0E-02	9.0E-02	8.4E+00	ND	1.5E+01	2.2E+01	9.8E+00	6.4E-01	ND	--	0	--
	PCB-194 (2,2',3,3',4,4',5,5'-OcCB)	µg/kg	7	7	100	--	--	2.6E-02	ND	1.8E+00	8.6E+00	3.0E+00	1.7E+00	ND	--	0	--
	PCB-195 (2,2',3,3',4,4',5,6-OcCB)	µg/kg	7	7	100	--	--	5.8E-03	ND	1.1E+00	3.7E+00	1.5E+00	1.3E+00	ND	--	0	--
	PCB-196 (2,2',3,3',4,4',5,6'-OcCB)	µg/kg	7	7	100	--	--	5.1E-02	ND	5.5E+00	1.9E+01	7.7E+00	1.4E+00	ND	--	0	--
	PCB-197 (2,2',3,3',4,4',6,6'-OcCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	2.3E-02	ND	1.5E+00	2.8E+00	1.2E+00	8.1E-01	ND	--	0	--
	PCB-198 (2,2',3,3',4,5,5',6-OcCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	2.6E-03	ND	6.1E-01	1.8E+00	1.0E+00	1.7E+00	ND	--	0	--
	PCB-199 (2,2',3,3',4,5,5',6'-OcCB)	µg/kg	4	4	100	--	--	4.2E-02	ND	6.1E+00	1.4E+01	6.8E+00	1.1E+00	ND	--	0	--
	PCB-200 (2,2',3,3',4,5,6,6'-OcCB)	µg/kg	7	7	100	--	--	4.5E-03	ND	7.9E-01	2.3E+00	9.3E-01	1.2E+00	ND	--	0	--
	PCB-201 (2,2',3,3',4,5',6,6'-OcCB)	µg/kg	7	7	100	--	--	7.4E-03	ND	1.4E+00	3.1E+00	1.4E+00	1.0E+00	ND	--	0	--
	PCB-202 (2,2',3,3',5,5',6,6'-OcCB)	µg/kg	7	7	100	--	--	7.2E-03	ND	8.4E-01	2.5E+00	8.9E-01	1.1E+00	ND	--	0	--
	PCB-203 (2,2',3,4,4',5,5',6-OcCB)	µg/kg	7	6	86	9.0E-02	9.0E-02	5.1E-02	ND	6.1E+00	1.9E+01	8.2E+00	1.3E+00	ND	--	0	--
	PCB-204 (2,2',3,4,4',5,6,6'-OcCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	1.4E-02	ND	8.4E-01	1.8E+00	7.3E-01	8.7E-01	ND	--	0	--
	PCB-205 (2,3,3',4,4',5,5',6-OcCB)	µg/kg	7	6	86	1.5E-02	1.5E-02	2.9E-03	ND	6.7E-01	1.9E+00	9.2E-01	1.4E+00	ND	--	0	--
	PCBs 107 + 124	µg/kg	2	1	50	4.8E-02	4.8E-02	5.1E-03	ND	5.1E-03	5.1E-03	NA	NA	ND	--	0	--
	PCBs 108 + 124	µg/kg	1	1	100	--	--	3.8E-01	ND	3.8E-01	3.8E-01	NA	NA	ND	--	0	--
	PCBs 110 + 115	µg/kg	3	3	100	--	--	2.3E-01	ND	2.9E+00	6.4E+00	3.2E+00	1.1E+00	ND	--	0	--
	PCB-12/13	µg/kg	3	3	100	--	--	6.2E-02	ND	7.1E-01	1.4E+00	6.6E-01	9.3E-01	ND	--	0	--
	PCBs 128 + 166	µg/kg	3	3	100	--	--	6.5E-02	ND	5.5E-01	1.1E+00	5.1E-01	9.3E-01	ND	--	0	--
	PCBs 129 + 138 + 163	µg/kg	3	2	67	4.5E-02	4.5E-02	2.0E+00	ND	5.2E+00	8.5E+00	4.5E+00	8.6E-01	ND	--	0	--
	PCBs 135 + 151	µg/kg	3	3	100	--	--	1.6E-01	ND	1.1E+00	2.5E+00	1.2E+00	1.1E+00	ND	--	0	--
	PCBs 139 + 140	µg/kg	3	2	67	2.4E-02	2.4E-02	3.2E-03	ND	2.0E-01	4.0E-01	2.8E-01	1.4E+00	ND	--	0	--
	PCBs 147 + 149	µg/kg	3	2	67	4.5E-02	4.5E-02	1.1E+00	ND	3.1E+00	5.2E+00	2.9E+00	9.2E-01	ND	--	0	--
	PCBs 153 + 168	µg/kg	3	2	67	4.5E-02	4.5E-02	1.4E+00	ND	4.5E+00	7.5E+00	4.3E+00	9.7E-01	ND	--	0	--
	PCBs 156 + 157	µg/kg	3	3	100	--	--	1.8E-02	ND	5.9E-01	9.6E-01	5.0E-01	8.5E-01	ND	--	0	--
	PCBs 171 + 173	µg/kg	3	3	100	--	--	5.0E-02	ND	9.5E-01	1.9E+00	9.5E-01	9.9E-01	ND	--	0	--
	PCBs 18 + 30	µg/kg	3	3	100	--	--	8.1E-02	ND	2.5E-01	5.1E-01	2.3E-01	9.4E-01	ND	--	0	--
	PCBs 180 + 193	µg/kg	3	3	100	--	--	3.6E-01	ND	2.7E+00	4.8E+00	2.2E+00	8.4E-01	ND	--	0	--
	PCBs 198 + 199	µg/kg	3	2	67	4.5E-02	4.5E-02	1.8E+00	ND	2.8E+00	3.9E+00	1.5E+00	5.3E-01	ND	--	0	--
	PCBs 20 + 28	µg/kg	3	3	100	--	--	2.1E-01	ND	3.9E-01	6.1E-01	2.0E-01	5.2E-01	ND	--	0	--
	PCBs 21 + 33	µg/kg	3	3	100	--	--	2.0E-01	ND	2.6E-01	3.7E-01	9.9E-02	3.8E-01	ND	--	0	--
	PCBs 26 + 29	µg/kg	3	3	100	--	--	8.4E-02	ND	1.1E-01	1.5E-01	3.3E-02	2.9E-01	ND	--	0	--
	PCBs 40 + 41 + 71	µg/kg	3	3	100	--	--	1.7E-01	ND	4.6E-01	6.8E-01	2.6E-01	5.8E-01	ND	--	0	--
	PCBs 43 + 73	µg/kg	3	3	100	--	--	1.1E-02	ND	2.5E-02	5.3E-02	2.4E-02	9.6E-01	ND	--	0	--
	PCBs 44 + 47 + 65	µg/kg	3	3	100	--	--	3.9E-01	ND	7.9E-01	1.6E+00	6.6E-01	8.4E-01	ND	--	0	--
	PCBs 45 + 51	µg/kg	3	3	100	--	--	6.4E-02	ND	9.5E-02	1.4E-01	4.2E-02	4.4E-01	ND	--	0	--

TABLE D-2. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Polychlorinated Biphenyls	PCBs 49 + 69	µg/kg	3	3	100	--	--	2.2E-01	ND	2.6E-01	3.0E-01	4.1E-02	1.6E-01	ND	--	0	--
	PCBs 50 + 53	µg/kg	3	3	100	--	--	4.8E-02	ND	8.8E-02	1.5E-01	5.8E-02	6.6E-01	ND	--	0	--
	PCBs 59 + 62 + 75	µg/kg	3	3	100	--	--	2.8E-02	ND	1.6E-01	2.6E-01	1.2E-01	7.4E-01	ND	--	0	--
	PCBs 61 + 70 + 74 + 76	µg/kg	3	3	100	--	--	4.1E-01	ND	1.0E+00	1.6E+00	5.7E-01	5.7E-01	ND	--	0	--
	PCBs 83 + 99	µg/kg	3	3	100	--	--	1.2E-01	ND	8.4E-01	1.8E+00	8.6E-01	1.0E+00	ND	--	0	--
	PCB-85/116	µg/kg	3	3	100	--	--	3.7E-02	ND	6.0E-01	9.4E-01	4.9E-01	8.2E-01	ND	--	0	--
	PCBs 86 + 87 + 97 + 109 + 119 + 125	µg/kg	3	3	100	--	--	1.5E-01	ND	1.3E+00	2.0E+00	9.8E-01	7.8E-01	ND	--	0	--
	PCB-88/91	µg/kg	3	3	100	--	--	4.6E-02	ND	3.1E-01	6.2E-01	2.9E-01	9.5E-01	ND	--	0	--
	PCBs 90 + 101 + 113	µg/kg	3	3	100	--	--	3.1E-01	ND	1.8E+00	3.8E+00	1.8E+00	1.0E+00	ND	--	0	--
	PCBs 93 + 100	µg/kg	3	3	100	--	--	2.4E-03	ND	5.9E-02	1.6E-01	8.4E-02	1.4E+00	ND	--	0	--
	PCBs 98 + 102	µg/kg	3	3	100	--	--	1.2E-02	ND	8.3E-02	1.4E-01	6.4E-02	7.7E-01	ND	--	0	--
	Pentachlorobiphenyl	µg/kg	3	3	100	--	--	1.6E+00	ND	1.4E+01	2.8E+01	1.3E+01	9.6E-01	ND	--	0	--
	PCB-082 (2,2',3,3',4-PeCB)	µg/kg	7	7	100	--	--	2.5E-03	ND	2.7E-01	7.7E-01	3.3E-01	1.2E+00	ND	--	0	--
	PCB-083 (2,2',3,3',5-PeCB)	µg/kg	4	4	100	--	--	1.6E-03	ND	1.7E-01	6.2E-01	3.0E-01	1.8E+00	ND	--	0	--
	PCB-084 (2,2',3,3',6-PeCB)	µg/kg	7	7	100	--	--	5.3E-03	ND	3.3E-01	9.4E-01	3.6E-01	1.1E+00	ND	--	0	--
	PCB-085 (2,2',3,4,4'-PeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	7.2E-02	ND	6.9E-01	1.3E+00	8.7E-01	1.3E+00	ND	--	0	--
	PCB-086 (2,2',3,4,5-PeCB)	µg/kg	4	4	100	--	--	1.3E-02	ND	1.2E+00	4.1E+00	1.9E+00	1.5E+00	ND	--	0	--
	PCB-087 (2,2',3,4,5',-PeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	3.7E-01	ND	1.7E+00	4.1E+00	2.1E+00	1.3E+00	ND	--	0	--
	PCB-088 (2,2',3,4,6-PeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	3.5E-03	ND	1.4E-01	2.8E-01	2.0E-01	1.4E+00	ND	--	0	--
	PCB-089 (2,2',3,4,6'-PeCB)	µg/kg	7	5	71	1.0E-02	2.4E-02	4.1E-03	ND	1.1E+00	4.4E+00	1.8E+00	1.6E+00	ND	--	0	--
	PCB-090 (2,2',3,4',5-PeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	4.3E-01	ND	2.4E+00	4.4E+00	2.8E+00	1.2E+00	ND	--	0	--
	PCB-097 (2,2',3,4',5'-PeCB)	µg/kg	4	4	100	--	--	1.3E-02	ND	1.2E+00	4.1E+00	1.9E+00	1.5E+00	ND	--	0	--
	PCB-091 (2,2',3,4',6-PeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	5.8E-02	ND	2.4E-01	4.3E-01	2.6E-01	1.1E+00	ND	--	0	--
	PCB-098 (2,2',3,4',6'-PeCB)	µg/kg	4	4	100	--	--	4.0E-04	ND	4.1E-02	1.4E-01	6.6E-02	1.6E+00	ND	--	0	--
	PCB-092 (2,2',3,5,5'-PeCB)	µg/kg	7	7	100	--	--	4.6E-03	ND	3.5E-01	9.8E-01	4.2E-01	1.2E+00	ND	--	0	--
	PCB-093 (2,2',3,5,6-PeCB)	µg/kg	4	4	100	--	--	2.5E-02	ND	1.4E+00	4.4E+00	2.0E+00	1.5E+00	ND	--	0	--
	PCB-094 (2,2',3,5,6'-PeCB)	µg/kg	7	3	43	9.5E-03	1.0E-01	2.7E-03	ND	2.2E-02	3.5E-02	1.7E-02	7.7E-01	ND	--	0	--
	PCB-095 (2,2',3,5',6-PeCB)	µg/kg	7	6	86	1.0E-02	1.0E-02	3.6E-01	ND	1.7E+00	4.4E+00	1.9E+00	1.1E+00	ND	--	0	--
	PCB-096 (2,2',3,6,6'-PeCB)	µg/kg	7	5	71	1.0E-02	1.0E-01	2.3E-03	ND	1.5E-02	3.5E-02	1.6E-02	1.1E+00	ND	--	0	--
	PCB-099 (2,2',4,4',5-PeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	1.6E-01	ND	5.8E-01	1.4E+00	7.1E-01	1.2E+00	ND	--	0	--
	PCB-100 (2,2',4,4',6-PeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	3.0E-03	ND	5.2E-02	1.0E-01	6.9E-02	1.3E+00	ND	--	0	--
	PCB-101 (2,2',4,5,5'-PeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	4.3E-01	ND	1.8E+00	4.4E+00	2.3E+00	1.3E+00	ND	--	0	--
	PCB-102 (2,2',4,5,6'-PeCB)	µg/kg	4	3	75	9.5E-03	9.5E-03	4.0E-04	ND	5.1E-02	1.4E-01	7.7E-02	1.5E+00	ND	--	0	--
	PCB-103 (2,2',4,5',6-PeCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	3.1E-03	ND	4.7E-02	1.0E-01	4.3E-02	9.2E-01	ND	--	0	--
	PCB-104 (2,2',4,6,6'-PeCB)	µg/kg	7	5	71	1.0E-02	4.5E-02	1.2E-04	ND	1.2E-02	3.1E-02	1.3E-02	1.1E+00	ND	--	0	--
	PCB-105 (2,3,3',4,4'-PeCB)	µg/kg	7	7	100	--	--	6.2E-03	ND	6.2E-01	1.7E+00	7.3E-01	1.2E+00	ND	--	0	--
	PCB-106 (2,3,3',4,5-PeCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	1.3E-02	ND	6.3E-01	2.5E+00	9.5E-01	1.5E+00	ND	--	0	--
	PCB-108 (2,3,3',4,5'-PeCB)	µg/kg	4	4	100	--	--	1.5E-03	ND	2.0E-01	7.1E-01	3.4E-01	1.8E+00	ND	--	0	--
	PCB-109 (2,3,3',4,6-PeCB)	µg/kg	6	6	100	--	--	1.6E-03	ND	1.7E-01	6.2E-01	2.6E-01	1.5E+00	ND	--	0	--
	PCB-107 (2,3,3',4',5-PeCB)	µg/kg	5	3	60	9.5E-03	1.0E-02	3.0E-02	ND	4.2E-01	7.1E-01	3.5E-01	8.3E-01	ND	--	0	--
	PCB-122 (2,3,3',4',5'-PeCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	3.0E-04	ND	5.5E-02	1.6E-01	6.4E-02	1.2E+00	ND	--	0	--
	PCB-110 (2,3,3',4',6-PeCB)	µg/kg	4	4	100	--	--	2.7E-02	ND	1.8E+00	5.9E+00	2.7E+00	1.5E+00	ND	--	0	--
	PCB-111 (2,3,3',5,5'-PeCB)	µg/kg	7	5	71	1.0E-02	9.0E-02	5.3E-02	ND	1.1E+00	4.1E+00	1.7E+00	1.6E+00	ND	--	0	--
	PCB-112 (2,3,3',5,6-PeCB)	µg/kg	7	3	43	1.0E-02	1.0E-01	8.9E-04	ND	2.9E-02	8.5E-02	4.8E-02	1.7E+00	ND	--	0	--
	PCB-113 (2,3,3',5',6-PeCB)	µg/kg	4	1	25	9.5E-03	1.0E-02	8.7E-02	ND	8.7E-02	8.7E-02	NA	NA	ND	--	0	--
	PCB-114 (2,3,4,4',5-PeCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	5.1E-04	ND	1.2E-01	2.6E-01	1.3E-01	1.1E+00	ND	--	0	--
	PCB-115 (2,3,4,4',6-PeCB)	µg/kg	4	0	0	9.5E-03	1.0E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-116 (2,3,4,5,6-PeCB)	µg/kg	4	0	0	9.5E-03	1.0E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-117 (2,3,4',5,6-PeCB)	µg/kg	7	6	86	9.7E-03	9.7E-03	8.1E-03	ND	8.4E-01	4.1E+00	1.6E+00	1.9E+00	ND	--	0	--
	PCB-118 (2,3',4,4',5-PeCB)	µg/kg	7	7	100	--	--	1.3E-02	ND	9.7E-01	2.5E+00	1.1E+00	1.2E+00	ND	--	0	--
	PCB-119 (2,3',4,4',6-PeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	6.6E-03	ND	4.1E-02	1.1E-01	6.0E-02	1.4E+00	ND	--	0	--
	PCB-120 (2,3',4,5,5'-PeCB)	µg/kg	7	6	86	4.5E-02	4.5E-02	3.8E-03	ND	3.0E-01	1.3E+00	5.0E-01	1.7E+00	ND	--	0	--
	PCB-121 (2,3',4,5',6-PeCB)	µg/kg	7	3	43	9.5E-03	4.5E-02	3.5E-03	ND	1.4E-01	2.8E-01	1.4E-01	1.0E+00	ND	--	0	--
	PCB-123 (2,3',4,4',5'-PeCB)	µg/kg	7	2	29	1.0E-03	2.4E-01	5.1E-02	ND	9.4E-02	1.4E-01	6.2E-02	6.6E-01	ND	--	0	--
	PCB-124 (2,3',4',5,5'-PeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	2.3E-02	ND	1.3E-01	3.4E-01	1.8E-01	1.4E+00	ND	--	0	--
	PCB-125 (2,3',4',5',6-PeCB)	µg/kg	4	4	100	--	--	1.3E-02	ND	1.2E+00	4.1E+00	1.9E+00	1.5E+00	ND	--	0	--
	PCB-126 (3,3',4,4',5-PeCB)	µg/kg	7	5	71	1.0E-03	4.5E-02	8.7E-03	ND	1.2E-01	2.7E-01	1.2E-01	1.0E+00	ND	--	0	--
	PCB-127 (3,3',4,5,5'-PeCB)	µg/kg	7	6	86	9.0E-02	9.0E-02	6.2E-03	ND	3.5E-01	1.5E+00	5.7E-01	1.6E+00	ND	--	0	--
	Tetrachlorobiphenyl	µg/kg	3	3	100	--	--	2.6E+00	ND	6.6E+00	1.1E+01	4.3E+00	6.5E-01	ND	--	0	--
	PCB-040 (2,2',3,3'-TeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	1.9E-02	ND	9.2E-02	2.2E-01	1.1E-01	1.2E+00	ND	--	0	--
	PCB-041 (2,2',3,4-TeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	1.4E-01	ND	5.3E-01	9.1E-01	5.4E-01	1.0E+00	ND	--	0	--
	PCB-042 (2,2',3,4'-TeCB)	µg/kg	7	7	100	--	--	1.8E-03	ND	1.2E-01	3.4E-01	1.3E-01	1.1E+00	ND	--	0	--
	PCB-043 (2,2',3,5-TeCB)	µg/kg	4	4	100	--	--	5.4E-03	ND	2.0E-01	6.7E-01	3.1E-01	1.5E+00	ND	--	0	--
	PCB-044 (2,2',3,5'-TeCB)	µg/kg	4	4	100	--	--	9.4E-03	ND	2.8E-01	8.8E-01	4.0E-01	1.4E+00	ND	--	0	--
	PCB-045 (2,2',3,6-TeCB)	µg/kg	4	4	100	--	--	9.0E-04	ND	3.9E-02	9.5E-02	4.5E-02	1.1E+00	ND	--	0	--
	PCB-046 (2,2',3,6'-TeCB)	µg/kg	7	6	86	1.0E-02	1.0E-02	2.0E-03	ND	2.5E-02	5.9E-02	2.2E-02	8.9E-01	ND	--	0	--
	PCB-047 (2,2',4,4'-TeCB)	µg/kg	4	4	100	--	--	1.9E-02	ND	1.1E-01	3.6E-01	1.7E-01	1.5E+00	ND	--	0	--
	PCB-048 (2,2',4,5-TeCB)	µg/kg	7	7	100	--	--	1.9E-02	ND	9.6E-02	3.6E-01	1.2E-01	1.3E+00	ND	--	0	--
	PCB-049 (2,2',4,5'-TeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	9.3E-02	ND	3.8E-01	6.7E-01	4.1E-01	1.1E+00	ND	--	0	--
	PCB-050 (2,2',4,6-TeCB)	µg/kg	4	3	75	9.5E-03	9.5E-03	9.3E-05	ND	5.2E-03	1.5E-02	8.5E-03	1.6E+00	ND	--	0	--

TABLE D-2. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Polychlorinated Biphenyls	PCB-051 (2,2',4,6'-TeCB)	µg/kg	4	4	100	--	--	1.7E-03	ND	1.7E-02	4.6E-02	2.1E-02	1.2E+00	ND	--	0	--
	PCB-052 (2,2',5,5'-TeCB)	µg/kg	7	7	100	--	--	1.4E-02	ND	7.9E-01	2.8E+00	9.8E-01	1.2E+00	ND	--	0	--
	PCB-053 (2,2',5,6'-TeCB)	µg/kg	4	4	100	--	--	1.1E-03	ND	4.5E-02	1.1E-01	5.1E-02	1.1E+00	ND	--	0	--
	PCB-054 (2,2',6,6'-TeCB)	µg/kg	7	2	29	9.5E-03	1.0E-01	4.4E-04	ND	1.6E-03	2.7E-03	1.6E-03	1.0E+00	ND	--	0	--
	PCB-055 (2,3,3',4-TeCB)	µg/kg	7	4	57	1.0E-02	4.5E-02	1.3E-03	ND	9.8E-02	3.5E-01	1.7E-01	1.7E+00	ND	--	0	--
	PCB-056 (2,3,3',4'-TeCB)	µg/kg	7	7	100	--	--	1.8E-02	ND	3.0E-01	1.2E+00	4.1E-01	1.4E+00	ND	--	0	--
	PCB-057 (2,3,3',5-TeCB)	µg/kg	7	3	43	9.5E-03	4.5E-02	3.8E-02	ND	4.8E-02	6.3E-02	1.3E-02	2.7E-01	ND	--	0	--
	PCB-058 (2,3,3',5'-TeCB)	µg/kg	7	4	57	9.5E-03	4.5E-02	8.9E-04	ND	4.6E-02	1.1E-01	4.7E-02	1.0E+00	ND	--	0	--
	PCB-059 (2,3,3',6-TeCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	4.7E-02	ND	1.9E-01	3.4E-01	2.1E-01	1.1E+00	ND	--	0	--
	PCB-060 (2,3,4,4'-TeCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	4.7E-02	ND	4.4E-01	1.2E+00	4.8E-01	1.1E+00	ND	--	0	--
	PCB-061 (2,3,4,5-TeCB)	µg/kg	4	4	100	--	--	4.0E-03	ND	2.1E-01	7.1E-01	3.4E-01	1.6E+00	ND	--	0	--
	PCB-062 (2,3,4,6-TeCB)	µg/kg	4	4	100	--	--	5.5E-04	ND	3.9E-02	1.5E-01	7.4E-02	1.9E+00	ND	--	0	--
	PCB-063 (2,3,4',5-TeCB)	µg/kg	7	7	100	--	--	5.1E-04	ND	4.5E-02	1.1E-01	5.0E-02	1.1E+00	ND	--	0	--
	PCB-064 (2,3,4',6-TeCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	1.3E-01	ND	5.9E-01	1.6E+00	6.7E-01	1.1E+00	ND	--	0	--
	PCB-065 (2,3,5,6-TeCB)	µg/kg	4	4	100	--	--	2.6E-04	ND	1.0E-02	3.9E-02	1.9E-02	1.9E+00	ND	--	0	--
	PCB-066 (2,3',4,4'-TeCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	4.6E-02	ND	3.6E-01	9.5E-01	3.8E-01	1.0E+00	ND	--	0	--
	PCB-067 (2,3',4,5-TeCB)	µg/kg	7	4	57	9.5E-03	4.5E-02	2.5E-03	ND	5.4E-02	1.1E-01	5.9E-02	1.1E+00	ND	--	0	--
	PCB-068 (2,3',4,5'-TeCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	1.7E-02	ND	2.5E-01	9.1E-01	3.8E-01	1.5E+00	ND	--	0	--
	PCB-069 (2,3',4,6-TeCB)	µg/kg	4	0	0	9.5E-03	1.0E-01	ND	ND	ND	ND	ND	NA	ND	--	0	--
	PCB-070 (2,3',4',5-TeCB)	µg/kg	4	4	100	--	--	1.8E-02	ND	5.4E-01	1.8E+00	8.4E-01	1.6E+00	ND	--	0	--
	PCB-076 (2,3',4',5'-TeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	7.9E-02	ND	3.8E-01	9.5E-01	5.0E-01	1.3E+00	ND	--	0	--
	PCB-071 (2,3',4',6-TeCB)	µg/kg	4	4	100	--	--	2.4E-03	ND	9.4E-02	3.0E-01	1.4E-01	1.5E+00	ND	--	0	--
	PCB-072 (2,3',5,5'-TeCB)	µg/kg	7	5	71	1.0E-02	4.5E-02	1.4E-03	ND	7.1E-02	1.6E-01	7.7E-02	1.1E+00	ND	--	0	--
	PCB-073 (2,3',5',6-TeCB)	µg/kg	4	3	75	1.0E-02	1.0E-02	1.5E-01	ND	5.7E-01	1.3E+00	6.3E-01	1.1E+00	ND	--	0	--
	PCB-074 (2,4,4',5-TeCB)	µg/kg	4	4	100	--	--	4.0E-03	ND	2.1E-01	7.1E-01	3.4E-01	1.6E+00	ND	--	0	--
	PCB-075 (2,4,4',6-TeCB)	µg/kg	4	4	100	--	--	1.9E-02	ND	1.1E-01	3.6E-01	1.7E-01	1.5E+00	ND	--	0	--
	PCB-077 (3,3',4,4'-TeCB)	µg/kg	7	3	43	2.8E-03	1.8E-01	1.2E-02	ND	2.1E-01	3.4E-01	1.8E-01	8.2E-01	ND	--	0	--
	PCB-078 (3,3',4,5-TeCB)	µg/kg	7	4	57	1.0E-02	4.5E-02	1.3E-03	ND	6.6E-02	1.5E-01	7.7E-02	1.2E+00	ND	--	0	--
	PCB-079 (3,3',4,5'-TeCB)	µg/kg	7	4	57	9.5E-03	4.5E-02	2.4E-03	ND	1.4E-01	2.5E-01	1.1E-01	8.4E-01	ND	--	0	--
	PCB-080 (3,3',5,5'-TeCB)	µg/kg	7	4	57	1.0E-02	4.5E-02	7.9E-02	ND	3.2E-01	9.5E-01	4.2E-01	1.3E+00	ND	--	0	--
	PCB-081 (3,4,4',5-TeCB)	µg/kg	7	2	29	1.0E-03	7.0E-02	3.3E-02	ND	9.8E-02	1.6E-01	9.3E-02	9.4E-01	ND	--	0	--
	Trichlorobiphenyl (total)	µg/kg	3	3	100	--	--	2.4E+00	ND	2.8E+00	3.4E+00	5.4E-01	1.9E-01	ND	--	0	--
	PCB-016 (2,2',3-TrCB)	µg/kg	7	7	100	--	--	2.7E-03	ND	1.0E-01	2.8E-01	1.0E-01	9.7E-01	ND	--	0	--
	PCB-017 (2,2',4-TrCB)	µg/kg	7	6	86	1.0E-01	1.0E-01	1.6E-03	ND	6.1E-02	2.6E-01	1.0E-01	1.7E+00	ND	--	0	--
	PCB-018 (2,2',5-TrCB)	µg/kg	4	3	75	1.0E-01	1.0E-01	3.0E-03	ND	1.7E-02	2.7E-02	1.2E-02	7.3E-01	ND	--	0	--
	PCB-019 (2,2',6-TrCB)	µg/kg	7	5	71	9.5E-03	1.0E-01	4.7E-04	ND	2.0E-02	6.5E-02	2.7E-02	1.4E+00	ND	--	0	--
	PCB-020 (2,3,3'-TrCB)	µg/kg	4	1	25	9.5E-03	1.0E-01	2.6E-02	ND	2.6E-02	2.6E-02	NA	NA	ND	--	0	--
	PCB-021 (2,3,4-TrCB)	µg/kg	4	3	75	1.0E-01	1.0E-01	4.0E-03	ND	2.1E-02	3.3E-02	1.5E-02	7.2E-01	ND	--	0	--
	PCB-022 (2,3,4'-TrCB)	µg/kg	7	6	86	1.0E-02	1.0E-02	2.9E-02	ND	1.5E-01	2.6E-01	1.0E-01	6.8E-01	ND	--	0	--
	PCB-023 (2,3,5-TrCB)	µg/kg	7	4	57	1.0E-02	1.8E-02	9.6E-04	ND	1.7E-02	3.9E-02	1.6E-02	9.1E-01	ND	--	0	--
	PCB-024 (2,3,6-TrCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	8.4E-03	ND	4.2E-02	1.3E-01	5.2E-02	1.2E+00	ND	--	0	--
	PCB-025 (2,3',4-TrCB)	µg/kg	7	5	71	9.5E-03	1.0E-02	2.1E-03	ND	4.1E-02	9.0E-02	3.3E-02	7.9E-01	ND	--	0	--
	PCB-033 (2,3',4'-TrCB)	µg/kg	4	2	50	1.0E-02	1.0E-01	2.6E-02	ND	3.0E-02	3.3E-02	4.9E-03	1.7E-01	ND	--	0	--
	PCB-026 (2,3',5-TrCB)	µg/kg	4	4	100	--	--	1.3E-03	ND	1.8E-02	5.6E-02	2.6E-02	1.5E+00	ND	--	0	--
	PCB-034 (2,3',5'-TrCB)	µg/kg	7	5	71	1.0E-02	1.8E-02	7.6E-04	ND	1.9E-02	5.3E-02	2.1E-02	1.1E+00	ND	--	0	--
	PCB-027 (2,3',6-TrCB)	µg/kg	7	7	100	--	--	5.7E-04	ND	1.9E-02	3.9E-02	1.6E-02	8.4E-01	ND	--	0	--
	PCB-028 (2,4,4'-TrCB)	µg/kg	4	2	50	9.5E-03	1.0E-02	4.6E-02	ND	2.6E-01	4.8E-01	3.1E-01	1.2E+00	ND	--	0	--
	PCB-029 (2,4,5-TrCB)	µg/kg	4	2	50	1.0E-02	1.0E-02	1.4E-03	ND	7.7E-03	1.4E-02	8.9E-03	1.2E+00	ND	--	0	--
	PCB-030 (2,4,6-TrCB)	µg/kg	4	4	100	--	--	1.5E-04	ND	1.6E-03	5.9E-03	2.8E-03	1.7E+00	ND	--	0	--
	PCB-031 (2,4',5-TrCB)	µg/kg	7	6	86	1.0E-02	1.0E-02	3.0E-02	ND	2.5E-01	6.0E-01	2.1E-01	8.5E-01	ND	--	0	--
	PCB-032 (2,4',6-TrCB)	µg/kg	7	7	100	--	--	2.7E-03	ND	6.8E-02	1.5E-01	6.1E-02	8.9E-01	ND	--	0	--
	PCB-035 (3,3',4-TrCB)	µg/kg	7	7	100	--	--	5.1E-04	ND	8.9E-02	2.8E-01	1.1E-01	1.2E+00	ND	--	0	--
	PCB-036 (3,3',5-TrCB)	µg/kg	7	5	71	1.0E-02	1.8E-02	1.1E-03	ND	3.6E-02	8.2E-02	4.0E-02	1.1E+00	ND	--	0	--
	PCB-037 (3,4,4'-TrCB)	µg/kg	7	6	86	1.0E-02	1.0E-02	4.7E-02	ND	2.6E-01	6.0E-01	2.3E-01	8.7E-01	ND	--	0	--
	PCB-038 (3,4,5-TrCB)	µg/kg	7	5	71	9.5E-03	1.8E-02	4.1E-04	ND	1.5E-02	2.7E-02	1.3E-02	8.8E-01	ND	--	0	--
	PCB-039 (3,4',5-TrCB)	µg/kg	7	5	71	1.0E-02	1.8E-02	1.6E-03	ND	8.4E-02	2.5E-01	1.0E-01	1.2E+00	ND	--	0	--
Dioxins/Furans	**2,3,7,8-Tetrachlorodibenzo-p-dioxin**	**pg/g**	**98**	**74**	**76**	**0.0E+00**	**2.8E+02**	**8.3E-02**	**8.8E+00**	**1.4E+02**	**2.1E+03**	**3.7E+02**	**2.7E+00**	**SA127**	**1.0E+03**	**5**	**2.1E+00**
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	98	76	78	1.3E+00	6.5E+02	5.4E-02	3.7E+01	4.2E+02	6.4E+03	1.2E+03	2.8E+00	SA127	--	0	--
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	98	80	82	0.0E+00	1.4E+00	5.4E-02	2.2E+01	3.3E+02	5.3E+03	8.9E+02	2.7E+00	SA127	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	98	88	90	1.3E+00	1.4E+00	7.8E-02	3.1E+01	6.0E+02	1.0E+04	1.8E+03	3.0E+00	SA127	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	**pg/g**	**98**	**89**	**91**	**1.3E+00**	**1.4E+00**	**8.6E-02**	**1.9E+01**	**5.4E+02**	**9.6E+03**	**1.6E+03**	**3.0E+00**	**SA127**	**3.1E+02**	**17**	**3.1E+01**
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	98	92	94	1.3E+00	1.4E+00	9.9E-02	8.0E+01	2.0E+03	3.6E+04	6.1E+03	3.0E+00	SA127	--	0	--
	Octachlorodibenzo-p-dioxin	pg/g	98	89	91	2.5E+00	2.8E+00	3.6E-01	1.4E+02	2.3E+03	3.8E+04	6.4E+03	2.8E+00	SA127	--	0	--
	TCDD (total)	pg/g	18	17	94	5.2E-01	5.2E-01	5.5E-01	6.2E+01	3.7E+03	4.7E+04	1.1E+04	3.0E+00	RSAJ7	--	0	--
	PeCDD (total)	pg/g	18	17	94	1.3E+00	1.3E+00	2.0E-01	9.1E+01	3.4E+03	4.2E+04	1.0E+04	3.0E+00	RSAJ7	--	0	--
	HxCDD (total)	pg/g	18	16	89	1.3E+00	1.4E+00	1.9E+00	1.8E+02	3.2E+03	3.5E+04	8.8E+03	2.7E+00	RSAJ7	--	0	--
	HpCDD (total)	pg/g	18	16	89	1.3E+00	1.4E+00	4.9E+00	2.6E+02	2.3E+03	2.5E+04	6.2E+03	2.8E+00	RSAJ7	--	0	--
	2,3,7,8-Tetrachlorodibenzofuran	pg/g	98	92	94	2.7E-01	5.5E-01	8.0E-02	2.5E+02	3.3E+03	4.7E+04	8.9E+03	2.7E+00	SA127	--	0	--
	1,2,3,7,8-Pentachlorodibenzofuran	pg/g	98	91	93	1.3E+00	1.4E+00	8.9E-02	2.9E+02	5.8E+03	9.2E+04	1.7E+04	3.0E+00	SA127	--	0	--
	2,3,4,7,8-Pentachlorodibenzofuran	pg/g	98	90	92	1.3E+00	1.4E+00	3.9E-02	1.3E+02	3.0E+03	4.9E+04	9.1E+03	3.0E+00	SA127	--	0	--

TABLE D-2. Soil Data Summary Statistics (for Soil in ECAs) from 0 to 2 ft bgs – Organic Compounds[a,b,c]
Nevada Environmental Response Trust Site, Henderson, Nevada

Chemical Group	Analyte[d]	Unit	No. of Samples	No. of Detects	% Detects	Nondetects[e]		Detects							BCLs		
						Minimum	Maximum	Minimum	Median	Mean	Maximum	Standard Deviation	Coefficient of Variation	Location of Maximum Detect	BCL or Site-Specific Value	Number of Exceedances	Ratio of Max Detect or Max ND to BCL
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	98	95	97	1.4E+00	1.4E+00	1.4E-01	3.0E+02	1.0E+04	1.5E+05	3.0E+04	2.9E+00	SA127	--	0	--
	1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	98	94	96	1.4E+00	1.4E+00	8.1E-02	1.7E+02	7.5E+03	1.2E+05	2.3E+04	3.0E+00	RSAJ7	--	0	--
	1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	98	90	92	1.3E+00	1.4E+00	6.6E-02	5.3E+01	1.4E+03	2.8E+04	4.7E+03	3.3E+00	SA127	--	0	--
	2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	98	90	92	1.3E+00	1.4E+00	9.0E-02	1.1E+02	1.9E+03	2.9E+04	5.5E+03	2.9E+00	SA127	--	0	--
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	98	96	98	1.4E+00	1.4E+00	2.7E-01	6.2E+02	2.7E+04	5.0E+05	8.9E+04	3.2E+00	SA127	--	0	--
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	98	93	95	1.3E+00	1.4E+00	1.3E-01	4.0E+02	1.2E+04	2.1E+05	3.8E+04	3.1E+00	SA127	--	0	--
	Octachlorodibenzofuran	pg/g	98	97	99	--	--	6.7E-01	1.9E+03	8.2E+04	1.4E+06	2.6E+05	3.2E+00	RSAJ7 and SA127	--	0	--
	TCDF (total)	pg/g	18	18	100	--	--	7.4E-01	1.6E+03	3.7E+04	4.8E+05	1.1E+05	3.0E+00	RSAJ7	--	0	--
	PeCDF (total)	pg/g	18	18	100	--	--	1.0E+00	1.4E+03	3.8E+04	5.4E+05	1.3E+05	3.4E+00	RSAJ7	--	0	--
	HpCDF (total)	pg/g	18	18	100	--	--	1.9E+00	1.3E+03	3.3E+04	4.7E+05	1.1E+05	3.3E+00	RSAJ7	--	0	--
	HxCDF (total)	pg/g	18	18	100	--	--	2.9E+00	1.4E+03	4.4E+04	6.2E+05	1.5E+05	3.3E+00	RSAJ7	--	0	--
	Dioxin TEQ (total)	**pg/g**	**117**	**115**	**98**	**--**	**--**	**6.7E-05**	**9.3E+01**	**3.7E+03**	**7.3E+04**	**1.2E+04**	**3.3E+00**	**SA127**	**2.7E+03**	**17**	**2.7E+01**
TPH and Fuel Alcohols	Oil Range Organics	µg/kg	23	7	30	1.4E+04	2.2E+04	3.5E+04	ND	8.1E+04	1.7E+05	5.1E+04	6.2E-01	ND	--	0	--
	Total petroleum hydrocarbon-diesel	µg/kg	23	4	17	1.4E+04	2.2E+04	5.3E+04	ND	1.1E+05	1.5E+05	4.5E+04	4.2E-01	ND	--	0	--
	Total petroleum hydrocarbon-gasoline	µg/kg	4	0	0	5.5E+01	2.5E+03	ND	ND	ND	ND	ND	NA	ND	--	0	--
Other	Phthalic acid	mg/kg	4	0	0	2.5E-01	2.5E-01	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	2.5E-06
	2-Butenoic acid, 3-((dimethoxyphosphinyl)oxy)-, methyl ester (Mevinphos)	mg/kg	10	0	0	7.5E-03	9.5E-03	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Chloric acid	mg/kg	37	23	62	1.1E-01	6.0E-01	1.8E-02	1.7E+00	2.8E+00	9.7E+00	2.9E+00	1.0E+00	RSAJ5	--	0	--
	4-Chlorobenzenesulfonic acid	mg/kg	4	0	0	2.5E-01	2.5E-01	ND	ND	ND	ND	ND	NA	ND	1.2E+02	0	2.1E-03
	O,O-Dimethyl Phosphorodithoate	mg/kg	4	0	0	1.3E+00	1.3E+00	ND	ND	ND	ND	ND	NA	ND	1.0E+05	0	1.3E-05
	O-Ethyl O-2,4,5-trichlorophenyl ethyl-phosphonothioate	mg/kg	10	0	0	1.0E-02	1.3E-02	ND	ND	ND	ND	ND	NA	ND	--	0	--
	Phosphorodithioic acid, o- o-diethyl ester	mg/kg	4	0	0	2.5E-01	2.5E-01	ND	ND	ND	ND	ND	NA	ND	9.1E+04	0	2.8E-06
	Ethoprop	mg/kg	10	0	0	7.5E-03	9.5E-03	ND	ND	ND	ND	ND	NA	ND	--	0	--

Notes:
-- = No value
bgs = below ground surface
ft = feet
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram
pg/g = picogram per gram
ECA = Excavation control area
NA = Not applicable
ND = Nondetects
PAH = Polycyclic aromatic hydrocarbon
TPH = Total petroleum hydrocarbon
VOC = Volatile organic compound
SVOC = Semivolatile organic compound

[a] Summary statistics presented for soil samples collected from 0 to 2 ft bgs in ECAs.
[b] Chemicals that have maximum detections that exceed their respective BCLs are bolded and highlighted gray.
[c] Chemicals that have detection limits that exceed their respective BCLs are highlighted gray.
[d] The dioxin TEQ results have been calculated by various parties and nondetects may have been treated differently and sample quantitation limits were not reported. For the BHRA, the dioxin TEQs will be calculated using 1/2 the sample quantitation limit.
[e] The minimum and maximum non-detected values are represented by one half of the sample quantitation limit.

Appendix E

Exposure Point Concentrations Methodology

Contents

E Exposure Point Concentrations Methodology

This appendix describes the methodology used to calculate exposure point concentrations (EPCs) represented by the 95% upper confidence limit (95% UCL) on the arithmetic mean in soils and soil gas for the Facility Area[1] within the Nevada Environmental Response Trust Site (the Site) for evaluation in the baseline health risk assessment (BHRA). As described in Section 4.2.2 of the BHRA Work Plan, the EPCs will be represented by the maximum detected concentrations or by the 95% UCL on the arithmetic mean, depending on sample size and number of detected concentrations.

E.1 Exposure Point Concentrations

For the BHRA, 95% UCLs will be calculated from available sampling data using the ProUCL software (Version 5.0.00) (US Environmental Protection Agency [USEPA] 2013c) recommended by USEPA (2013b) (or using equivalent methods, programmed in R, a language and environment for statistical computing [R Core Team 2012]). In a comprehensive review of EPC calculation methods, USEPA (2006) identified two types of methods that can be used on data sets with multiple detection limits: methods based on the Kaplan-Meier (KM) estimator and methods based on regression on order statistics (ROS). The ROS methods do not perform as well as the KM estimator methods on data sets with skewed distributions (commonly associated with site investigation data). Therefore, only KM estimator methods will be considered for use in the BHRA. The use of the KM estimator for censored data sets (i.e., data sets with nondetected results) is well established in the statistical field of survival analysis and commonly used in medical research and engineering reliability analysis.

The KM estimator can be used in many different 95% UCL calculation methods, all of which are non-parametric methods, i.e., methods that are not based on an assumption that the data follow a particular statistical distribution. In practice, it is not easy to accurately identify the distribution of data sets containing nondetects such that non-parametric methods are generally preferred (USEPA 2013b). To determine the most appropriate method for the data sets that will be used in the BHRA, each of the following KM estimator methods was considered based on the Monte Carlo test results and USEPA (2006 and 2013a) recommendations:

- Bootstrap methods
  - Standard bootstrap method
  - Bootstrap t method
  - Percentile bootstrap method
  - Bias-corrected accelerated (BCA) method
- Other Non-Parametric Methods
  - Normal approximation based on standard normal critical values
  - Normal approximation based on Student t critical values
  - Chebyshev inequality

[1] The Facility Area comprises the 265-acre portion of the Site excluding Parcels C, D, F, G, and H.

A common aspect of contaminant data from site investigations is that the data often follow a skewed probability distribution (USEPA 1997). Because normal approximation approaches do not perform well for skewed data sets (USEPA 2013b), these approaches were removed from further consideration. The Chebyshev inequality can yield overly conservative 95% UCLs when compared to the other methods (USEPA 2013a). The remaining candidate methods are the four bootstrap methods. In practice, these methods tend to give similar results. However, the bootstrap t method can give unreliable results in some circumstances (USEPA 2013a), and the BCA method has been shown to perform slightly better than the standard bootstrap and percentile bootstrap for skewed data sets (USEPA 2013a).

Based on the above considerations, the BCA bootstrap method using the KM estimator was selected as the most appropriate method and was used to calculate all the 95% UCLs used in the exposure assessment. Specifically, in cases where a data set consists of only detected results, the BCA bootstrap is used, and in cases where the data set consists of both detects and nondetects, the KM (BCA) is used.

E.2 References

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