
**BASELINE HUMAN HEALTH RISK ASSESSMENT
FORMER LOS ANGELES COUNTY
AGRICULTURAL COMMISSIONER FACILITY
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

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ACRONYMS AND ABBREVIATIONS

bgs	Below Ground Surface
BAP	Benzo(a)pyrene
CalEPA	California Environmental Protection Agency
CDI	Chronic Daily Intake
COPC	Chemicals of Potential Concern
CSF	Cancer Slope Factor
DEP	Diethylphthalate
DL	Detection Limit
dL	Deciliter
DTSC	California Environmental Protection Agency Department of Toxic Substances Control
EPC	Exposure Point Concentration
g	Gram
HEAST	Health Effects Assessment Summary Tables
HI	Hazard Index
HQ	Hazard Quotient
HRA	Health Risk Assessment
IRIS	Integrated Risk Information System
JE	Johnson-Ettinger
LACDAC	Los Angeles County Department of Agricultural Commissioner/Weights and Measures
MDL	Method Detection Limit
mol	Moles
ND	Not Detected
OEHHA	Office of Environmental Health Hazard Assessment
PCE	Tetrachloroethylene or Perchloroethylene

ACRONYMS AND ABBREVIATIONS (continued)

PEF	Particulate Emission Factor
ppb	Parts per billion
ppm	Parts per million
PQL	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RfD	Reference Dose
REL	Reference Exposure Limit
RFI	RCRA Facility Investigation
RME	Reasonable Maximum Exposure
SCS	SCS Engineers
SQL	Sample Quantification Limit
SVOC	Semi Volatile Organic Compound
UCL	Upper Confidence Limit
USEPA	U. S. Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

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EXECUTIVE SUMMARY

A health risk assessment (HRA) was prepared on behalf of the Los Angeles County Department of Agricultural Commissioner / Weights and Measures (LACDAC) for the evaluation of the potential human health risks attributable to contaminants present in soil beneath the former Pico Rivera Facility site located at 8841 East Slauson Avenue. The site was used by LACDAC from the 1930's to the early 1990's for the following purposes: offices, raising of beneficial insects, mixing of rodent and bird baits for pest control, disposal of pesticides acquired from a pesticide collection program, and incineration of plants held under quarantine for pests or disease. Soil and groundwater at the site have been extensively investigated by the County since closure of the facility in 1990. Site facilities, including a 4,000-gallon underground storage tank (UST) and associated wash rack/concrete pad, cesspool, incinerator, above ground weed oil tanks, irrigation well, garage, storage bins, and building materials have been removed. Soils and other media have been investigated.

The HRA evaluated exposures occurring to construction workers and potential adult and child residents. The following exposure pathways were evaluated depending on the receptor population: soil ingestion, dermal contact with soil, inhalation of soil particulates and volatiles released from soil. In addition, the vapor intrusion exposure pathway was evaluated for the adult and child residents. This pathway is not a concern for construction workers since this is an indoor pathway and construction workers are assumed to be working outdoors. Both cancer and non-cancer health risks were evaluated.

The risk assessment methods used in this HRA were selected first to be consistent with recommendations of the California regulatory agencies primarily responsible for reviewing site risk assessments in California. These agencies include the California Department of Toxic Substances Control (DTSC) and the California Office of Environmental Health Hazard Assessment (OEHHA). If risk guidance was not available from the California agencies for some aspect of the risk assessment, recommendations of the United States Environmental Protection Agency (USEPA) were selected.

The results of the HRA show that cumulative cancer risks for the construction worker and adult and child residents are above the DTSC and OEHHA negligible cancer risk threshold of 1×10^{-6} , but within the USEPA target risk range of 1×10^{-6} to 1×10^{-4} which is considered to be safe and protective of human health. The increased potential for cumulative cancer risks to the construction worker and residents is due to potential soil ingestion and dermal contact with dieldrin in soil. Cumulative non-cancer risks for the construction worker, adult and child residents are all below the Hazard Index threshold of 1, indicating that potential exposures are not expected to result in adverse health effects.

Using the California Department of Toxic Substances Control Leadsread model to evaluate lead risks for on-site resident lead exposure; lead risks are considered insignificant. The USEPA Adult Lead Methodology (ALM) model was used to assess risk from on-site exposure to lead for the construction worker. Lead risks are also considered insignificant for the construction worker.

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1.0 INTRODUCTION

This Human Health Risk Assessment (HRA) Report has been prepared by SCS Engineers (SCS) on behalf of the Los Angeles County Department of Agricultural Commissioner / Weights and Measures (LACDAC) for evaluation of the potential human health risks attributable to potential contaminants present in soil beneath the Pico Rivera Facility Site located at 8841 East Slason Avenue, Pico Rivera, California (Project Site).

The risk assessment methods described in this report were selected first to be consistent with recommendations of the California regulatory agencies primarily responsible for reviewing site risk assessments in California. These agencies include the California Department of Toxic Substances Control (DTSC) and the California Office of Environmental Health Hazard Assessment (OEHHA). If risk assessment guidance was not available from these California agencies for some aspect of the risk assessment, risk guidance of the United States Environmental Protection Agency (USEPA) was used.

This HRA report consists of five parts:

- Site Background
- Data Evaluation
- Exposure Assessment
- Risk Characterization
- Uncertainty Analysis

2.0 SITE BACKGROUND

2.1 Site Description and History

The Project Site is an approximately 1.9 acre relatively flat parcel located on the north side of East Slauson Avenue approximately 500 feet west of Rosemead Boulevard in Pico Rivera, California. The site is located in the Downey Plain area of the Los Angeles basin. Site elevation is approximately 152 feet above mean sea level (MSL).

The site is located in a mixed residential, commercial/industrial area. The site is bounded on the north, west and east by residential properties. Industrial facilities are located to the south, immediately across East Slauson Avenue. Except for an approximately 50 by 200 foot grassy area at its southern end, the entire site is surrounded by an 8-foot high block wall or chain-link fence with a locked gate. A site location map is provided as Figure 1. Locations of current and former facilities at the site are shown on Figure 2.

The site was used by LACDAC from the 1930's to the early 1990's for the following purposes: offices, raising of beneficial insects, mixing of rodent and bird baits for pest control, disposal of pesticides acquired from a pesticide collection program, and incineration of plants held under quarantine for pests or disease.

2.2 Summary of Site Investigations to Date

Soil and groundwater at the Project Site have been extensively investigated by the County of Los Angeles since closure of the facility in 1990. Site facilities, including a 4,000-gallon underground storage tank (UST) and associated wash rack/concrete pad, cesspool and associated sludge and soils, incinerator, aboveground weed oil tanks, irrigation well, garage, storage bins, and building materials have been removed. Soils and other media have been investigated. Three clusters of two groundwater monitoring wells are located at the Project Site. Results of site investigations and removal actions, to date, are described in the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report (SCS, July 2001). Information on RCRA unit closure and potential corrective measures are included in the Closure Plan (SCS, November 2003). Additional soil sampling and analysis took place for arsenic in the vicinity of the former cesspool. Details are available in the RFI Additional Soil Sampling, Cesspool and Background Areas Report (SCS, 2004). Supplemental background soil sampling is summarized in the RFI Supplemental Soil Sampling Background Area Report (SCS, 2005a)

The following narrative summarizes investigations conducted since 1995 under the Resource Conservation and Recovery Act (RCRA) facility investigation program (SCS 2001).

2.2.1 Soil Vapor Survey

Results of a soil vapor survey conducted on March 21 and April 6, 1995, indicated no detectable VOCs with the exception of 1.8 µg/L (micrograms per liter) of tetrachloroethene (PCE) detected

at location SV-5 (15-foot depth), with a detection limit of 1.0 µg/L. When two (2) duplicate samples were collected and analyzed at SV-5, all VOCs were non detect. Soil vapor survey sampling locations are shown on Figure 3.

While PCE was detected during a soil vapor survey conducted on April 6, 1995, analytical results indicated no detectable VOCs with the exception of 1.8 µg/L (micrograms per liter) of PCE detected at sample location SV-5 (15-foot depth), with a detection limit of 1.0 µg/L. Two duplicate samples were subsequently collected and analyzed at SV-5. Duplicate samples indicated no detectable VOCs. Based on the confirmatory results, soil vapor data were not evaluated in the HRA. This has been agreed upon by the DTSC in a telephone conversation on June 14, 2005 (DTSC, 2005).

2.2.2 Trenches, Septic Tank, and Cesspool Sampling

Soil samples were collected from five (5) exploratory trenches (T1 through T5) in the southern portion of the site on May 4 and December 19, 1995.

Near-Surface Soil Sampling

Soil samples were collected at 25 locations at depths between the surface and 3 feet bgs on June 15 and December 19, 1995.

During the initial phases of the RCRA Facility Investigation (RFI), approximately 10 percent of samples were analyzed in duplicate (co-located for soil samples).

2.2.3 Soil Borings

Initial Phases of RFI

Soil samples were collected from borings on June 13 and December 19, 1995. Samples were collected to a depth of 21 feet bgs in borings BH-1, BH-2, and BH-3, and to a depth of 41 feet in borings BH-4, BH-5, and BH-6. Locations of soil borings are shown on Figure 4.

Pesticides and herbicides detected in soil borings include relatively low concentrations (ppb range) of 4,4-DDT and dalapon. Diethylphthalate (DEP) and benzo(a)pyrene (BAP) were detected in two borings at concentrations of up to 4.2 and 0.05 mg/kg, respectively. Other SVOCs, TRPH, VOCs, and strychnine were not detected in samples from soil borings. Elevated concentrations of metals were not detected in these soil borings. Dioxins and furans were not detected in samples from soil borings.

2.2.4 Additional Soil Borings at Locations Previously Sampled

Six shallow soil borings were drilled at the site on January 30, 1997 to obtain additional subsurface soil samples for laboratory analysis to assess elevated concentrations of various constituents detected during the initial site investigation. These additional soil borings were sampled at depths of 3 and 5 feet bgs.

Pesticides, herbicides, volatile organics, and strychnine were not detected in soil samples collected from the additional soil borings. Elevated concentrations of metals were not detected.

Additional Soil Borings in UST Area

Additional soil samples were collected from two borings to a depth of approximately 48 feet and in two borings to 5 feet on May 20, 1999. Organochlorine pesticides and herbicides were detected in only one of the soil samples analyzed (BH9-6-15).

Trace metals were detected in some samples. Concentrations of the various metals are within the ranges previously detected at the site and within ranges, which have been detected in un-impacted, natural soils.

Three additional soil borings (BH-12, BH-13, BH-14) were drilled to a depth of 25 feet bgs on February 13, 2001. Samples were analyzed for organochlorine pesticides. Results indicate detectable concentrations of chlordane, dieldrin, DDT and its breakdown product DDE, heptachlor and heptachlor epoxide, endrin, and beta, delta, and gamma isomers of hexachlorocyclohexane (also known as BHC; gamma-BHC is marketed under the trade name Lindane).

Supplemental Soil Sampling – Background Area

Supplemental soil sampling was conducted in July 2004 to address detections of arsenic in soil samples collected in one on-site background sample locations (SCS, September 2004). Concentrations of arsenic were detected above the normal range of concentrations expected in natural soils in the Los Angeles area in two samples from this location. Sampling was also conducted in order to develop a more robust background metals data set, soil sampling and analysis was conducted in an on-site area near the northern property boundary that was not historically used for operations. Analytical data indicated that soil containing arsenic concentrations above typical background concentrations do not appear to extend any significant distance laterally. Details are provided in the report titled *RFI Supplemental Soil Sampling, Background Area* (SCS, 2005a). This report was subsequently approved by the DTSC in March 2005.

Soil samples were collected from monitoring wells MW-1 and MW-2 at approximately five foot intervals to the total depth of each boring on January 28 and 29, 1997. Due to access limitations, soil samples were collected from monitoring well MW-3 at depths of 15 and 20 feet bgs only. Pesticides, herbicides, and strychnine were not detected in these soil samples. Elevated concentrations of metals were not detected in these soil samples.

2.2.5 Groundwater Monitoring Events

Groundwater samples were collected initially on February 14, 1997 and analyzed for pesticides and herbicides, strychnine, VOCs, selected metals, and general water quality parameters (general minerals).

Groundwater samples have been collected quarterly since the initial monitoring round with the exception of times when the water level was too low to allow purging and sampling. In addition to the initial groundwater sampling event, sampling episodes took place on the following dates:

- May 14, 1997
- October 29, 1997
- January 1, 1998
- April 29, 1999
- March 24, 2000
- May 26, 2000
- August 16, 2000
- May 21, 2001
- April 28, 2003
- March 25, 2004
- May 4, 2004

The most recent sampling effort took place in January 2005. Pesticides and herbicides were not detected in groundwater samples from any of the well samples and no other constituents of concern were detected at elevated concentrations. None of the target metals were measured at concentrations above detection limits in any of the samples. Analytical results of groundwater samples taken previously, including data from previous sampling events are summarized in Appendix A. Based on the lack of detections of pesticides and herbicides since 1997, it has been recommended that groundwater monitoring at the site be discontinued (SCS, 2005a). DTSC agreed with this recommendation in their letter of March, 24, 2005.

Figure 4 shows on-site soil borings in the vicinity of the former wash rack and Figure 5 shows on-site soil sampling and groundwater sampling locations.

3.0 DATA COLLECTION AND EVALUATION

Data used in this HRA were obtained primarily from the following reports: *RFI Report* dated July 2001, *RFI, Additional Soil Sampling for Cesspool and Background Areas*, dated September 2004, and *RFI Supplemental Soil Sampling*, dated February 2005.

3.1 Data Evaluation

Data were evaluated to ensure that it was suitable for quantitative risk assessment. Specifically, the following data quality assurance/quality control (QA/QC) issues were examined:

- Were detection limit requirements met?
- Were any sample holding time exceeded?
- Were surrogate recovered within the quality control recovery limits specified for the analytical method?
- Were any chemicals detected in blanks (including method blanks, equipment rinsate blanks and trip blanks)?
- Were recoveries of matrix spikes within control limits?

Only data qualified as “R” or rejected were automatically rejected from the HRA. There were no data qualified as “R” in the data used in the HRA.

Analytical results from chemical analyses of soil samples collected from 0 to 10 feet bgs and used in the HRA are presented in Appendix A. Analytical results from chemicals analyses of soil samples collected from below 10 feet bgs are presented in Appendix B.

4.0 EXPOSURE ASSESSMENT

The most important component of a HRA is estimating the amount of a chemical an individual may come into contact with. This quantitative evaluation of chemical exposure involves the following steps:

- Estimating the representative chemical concentrations or “exposure point concentrations” (EPCs) in the environment (e.g., soil, water, air) to which individuals are assumed to be exposed.
- Identifying chemicals of potential concern (COPC) (i.e., chemicals that are most likely to present a potential health risk).
- Determining which individuals (receptor populations) may contact chemicals in the environment and in what manner they will be exposed (exposure pathways).
- The methods used to conduct each of these steps in the HRA are described below.

4.1 Calculation of Exposure Point Concentrations (EPCs)

EPCs are the representative concentrations of chemicals in soil, water, or air that are used to calculate human health risks. An EPC is defined as “the arithmetic average of the concentration that is contacted over the exposure period” (USEPA, 1989). To ensure that the estimate of the arithmetic average is conservative and will not be underestimated, it is recommended that a statistically-based 95% upper confidence limit (UCL) on the mean concentration be used as an estimate for the EPC (USEPA, 1989; DTSC, 1992). By definition, there is a 95% probability that the true mean is equal or less than the 95% UCL.

The USEPA’s statistical software package *ProUCL* (USEPA, 2003) was used to determine the statistical distribution of each contaminant. Non-detect values were assigned a value of one-half the sample quantitation limit (SQL), or the practical quantitation limit (PQL) if the SQL was equal to the PQL. This is consistent with the DTSC guidance document, *Use of Soil Concentration Data in Exposure Assessments* (DTSC, 1996). In cases where the distribution (i.e., normal; lognormal) could not be determined, the data test was deemed to be non-parametric.

While it is recommended that a 95% UCL be used as an estimate for the EPC, based on correspondence regarding the use of ProUCL, (via email, ProUCL Communication, dated June 23, 2004 [USEPA, 2004], often an UCL (e.g., 95%) does not provide the specified (95%) coverage for the population mean. This is especially true when the data sets are moderately to highly skewed. The use of the 95% UCL will result in an underestimate of the EPC term. In most cases where the data set’s distribution has been determined to be non-parametric, ProUCL recommends the use of a 97.5% or 99% UCL. Depending upon the data set, a 97% or 99% UCL may provide a better coverage (coverage closer to 99%) estimate for the EPC (USEPA, 2004). A summary of the data statistics for soil is provided in Appendix C. Statistical output from ProUCL is provided in Appendix D.

It is important to note, for data sets with greater than 50% non-detections, the maximum detected concentration value was used as the EPC.

EPCs were calculated for all chemicals showing at least one unqualified detection (chemicals with at least one detection that is not qualified by standard laboratory QA/QC qualification codes such as “J” [estimated value], or “R” [unusable]).

Calculation of soil EPCs requires specifying the depth interval from which soil concentrations will be drawn to calculate the EPCs. For the Project Site, two receptor populations are relevant: residents (adults and children) and construction workers. For both of these receptors populations, use of a soil depth interval of 0 to 10 feet below ground surface (bgs) is consistent with DTSC risk guidance (Reynolds, et. al, 1990). Soil data collected from this depth interval were therefore used to calculate the EPCs.

4.2 Identification of Chemicals of Potential Concern

Chemicals of Potential Concern, or COPCs are the subset of chemicals at a site that may potentially present a health risk. Frequently, many chemicals are detected at a site, however, the levels of some of these, particularly naturally occurring inorganic chemicals such as iron, may be comparable to, or below natural background concentrations. Such chemicals are not of health concern, and may be excluded from further evaluation.

Separate approaches were used to identify organic and inorganic COPCs in site soil. These approaches are described below.

Organics

For an organic chemical in soil or soil vapor to be considered a possible COPC there had to be at least one unqualified detection, otherwise the chemical was screened out. If there was at least one unqualified detection, the candidate chemical was next evaluated as a possible blank contaminant. If the chemical was detected in blanks, then the chemical was not considered a possible COPC unless the sample concentration was at least 10 times greater than the blank concentration.

For polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans, a 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxicity equivalent (TEQ) in soil concentration was calculated using all 17 congeners in each sample. This is consistent with CalEPA OEHHA guidance (OEHHA, 2003).

Inorganics

As in the case for organics, there had to be at least one unqualified detection for an inorganic to be considered a possible COPC. It should be noted that only a subset of the CAM 17 metals was analyzed for based on site history. There was no reason to expect other CAM 17 metals to be present on the site based on past site uses. In the next screening step, the site ProUCL recommended UCL was compared to the corresponding value for background. Inorganic chemicals were included

if the COPCs UCL value from the Project Site was greater than the corresponding background value. Background soil samples were collected in July 2004 for this purpose from an on-site area near the northern property boundary that was not historically used for operations (SCS, 2005). If chemicals are not screened out at this step, they were further evaluated and screened out by comparing the sample median concentration to the background mean concentration using the Mann-Whitney (Wilcoxon) W Test. For a given inorganic compound, if there is a statistically significant difference between the medians at a 95% confidence level, the inorganic was considered a COPC and evaluated in the HRA. These steps are consistent with DTSC guidance “*Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities*” (DTSC, 1997). The following inorganic chemicals were eliminated from further evaluation from the HRA: arsenic, copper, mercury, and zinc. The following inorganic chemicals were included in the HRA: cadmium and lead. Appendix E contains information and methods used to determine inorganic COPCs.

Concern regarding arsenic in soil in the former cesspool area was expressed by staff of the DTSC (letter dated November 2, 2005) and the elimination of arsenic as a COPC (letter dated October 5, 2005). During soil removal activities, soil and other materials with obviously elevated concentrations of arsenic were removed to a depth of 15 feet bgs in the area of the former cesspool. Vertical and lateral confirmation samples were collected in the cesspool area. The only confirmation samples with arsenic concentrations above site background were collected at depths of 15 feet bgs or deeper.

DTSC also expressed concern regarding the relatively high detection limit for arsenic. This is likely attributed to differences in laboratory analytical methodologies over a period of time. While the elevated detection limit may have resulted in an artificially high number of non-detections, detected levels of arsenic are within the background range for the site.

A listing of soil COPCs is presented in Table 1.

4.3 Description of Exposure Scenarios, Receptor Populations, and Exposure Pathways

In order to estimate human exposure to contaminants, assumptions must be made regarding what populations will be exposed (receptor populations) and the mechanisms by which they will be exposed (exposure pathways). These assumptions are collectively referred to as an “exposure scenario”. The exposure scenario assumptions used in the HRA depend on the current or future land use of the project site. For example, if a site is currently occupied by residential housing, then exposure assumptions consistent with a residential receptor population would be used to assess risk. Other land uses might include shopping or offices, which is referred to as a “commercial/industrial” land use, or in the case of parks, recreational land use. When evaluating risks for residential or recreational uses, it is standard practice to include evaluation of both adult and child receptors.

Because the Project Site could potentially be redeveloped into a residential housing development, adult and child residential receptors were evaluated. In addition, construction workers may be exposed to chemicals during housing or infrastructure development. All of these individuals may come into contact with contaminants in surface soils through inadvertent ingestion of soils or direct

dermal contact. In addition, individuals may inhale contaminants suspended in air by wind erosion or volatilized from surface soils. Finally, there is also a potential for residents to inhale chemicals which may volatilize and enter homes from underlying soils. This latter exposure pathway is typically referred to as the vapor intrusion pathway and was evaluated based on VOCs in bulk soil data. The groundwater pathway was not deemed complete because groundwater monitoring efforts have determined that chemicals of potential concern were not detected in groundwater samples. Therefore, groundwater was not considered to be a potential exposure medium.

Based on the above rationales, the following receptor populations and exposure pathways were evaluated in the HRA:

Construction Worker

- Soil ingestion
- Dermal contact with soil
- Inhalation of particulate-phase contaminants in outdoor air
- Inhalation of vapor-phase contaminants in outdoor air

Adult and Child Resident

- Soil ingestion
- Dermal contact with soil
- Inhalation of particulate-phase contaminants in outdoor air
- Inhalation of indoor air (vapor intrusion pathway)

Exposure assumptions consistent with a reasonable maximum exposure scenario (RME) were used in the HRA. The RME is considered an upper bound estimate of the chemical exposure that may occur to an individual, thus the use of RME assumptions is expected to conservatively estimate health risks for the general population (USEPA, 1989).

4.4 Conceptual Site Model

The combination of exposure pathways and population receptors described above are graphically summarized in the conceptual site model (CSM) shown in Figure 6.

4.5 Calculation of Chronic Daily Intakes

Quantitative estimates of chemical exposure are referred to as the Chronic Daily Intake (CDI). The CDI can be considered to represent an upper-bound exposure level (maximum or 95 percent UCLM) of chemical expected to be taken into the body from a particular exposure pathway each day over a

long period of time. CDIs for each exposure pathway were calculated using the equations and assumptions shown in detail below. The equations below indicate the general form of the CDI calculation for each pathway. Exposure parameter values differ depending on whether the COPC is a carcinogen or non-carcinogen, and on whether the receptor is an adult or a child. A complete list of the specific exposure parameters used in the following calculations is shown in Table 2.

4.5.1 Soil Ingestion

Contaminants in soil may be inadvertently ingested through hand-to-mouth contact. The CDI for this pathway was calculated as follows:

$$CDI = \frac{CS \times CF_s \times IR \times EF \times ED}{BW \times AT}$$

Where:

CDI	=	Chronic Daily Intake (mg/kg/day)
CS	=	Chemical concentration in soil (mg/kg)
CF _s	=	Conversion factor for soil (1E-06 kg/mg)
IR	=	Soil ingestion rate for adult or child (mg/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration for adult or child (years)
BW	=	Body weight for adult or child (kg)
AT	=	Averaging time (days)

CS is the soil EPC calculated as described above. The soil ingestion rate, IR, is the average amount of soil assumed to be incidentally or inadvertently ingested by an individual (adult or child) on an average day. The exposure frequency, EF, corresponds to the number of days per year an individual would be expected to ingest soil. The exposure duration, ED, is the total number of years an individual would be expected to visit the site. The body weight, BW is the average body weight for an adult or 6-year old child. The averaging time, AT, is the total number of days over which the exposure is averaged in the life of the individual. For carcinogens, this value is always 70 years or 25,550 days. However, for non-carcinogens, the value for AT depends on the respective receptor population (Table 2).

4.5.2 Dermal Contact with Soil

Dermal absorption of chemicals in soil may occur when soil particles make contact with, and adhere to the skin during outdoor activities. The CDI for the dermal absorption pathway was calculated as follows:

$$CDI = \frac{CS \times CF_s \times SA_s \times AF \times ABS \times EF \times ED}{BW \times AT}$$

Where:

CDI	=	Chronic Daily Intake (mg/kg/day)
CS	=	Chemical concentration in soil (mg/kg)

CF _s	=	Conversion factor for soil (1E-06 kg/mg)
SA _s	=	Skin surface available for contact with soil for adult or child (cm ²)
AF	=	Soil-to-Skin adherence factor (mg/cm ² /event)
ABS	=	Fraction of chemical dermally absorbed (unitless)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration for adult or child (years)
BW	=	Body weight for adult or child (kg)
AT	=	Averaging time (days)

The skin surface, SA_s, refers to the expected amount of an individual's skin surface available for contact with soil. The soil-to-skin adherence factor, AF, is the amount of soil adhering to the skin surface after a soil contact event. The fraction of chemical dermally absorbed, ABS, is the fraction of chemical adhering to the skin that is expected to be absorbed across the skin into the body. Chemical-specific ABS values were obtained from DTSC (1994).

4.5.3 Inhalation of Particulate-Phase Chemicals in Outdoor Air

Individuals may be exposed to contaminants in soil via the inhalation of re-suspended soil particulates. Consistent with USEPA guidance (USEPA, 2004), this pathway was evaluated only for non-volatile compounds. The CDI associated with this pathway was calculated as follows:

$$CDI = \frac{CS / PEF \times InhR \times EF \times ED}{BW \times AT}$$

Where:

CDI	=	Chronic Daily Intake (mg/kg/day)
CS	=	Chemical concentration in soil (mg/kg)
PEF	=	Particulate emission factor (m ³ /kg)
InhR	=	Inhalation rate (m ³ /day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

The particulate emission factor, PEF, is a conversion factor used to convert a soil contaminant concentration to an airborne particulate contaminant concentration (USEPA, 2004).

4.5.4 Inhalation of Vapor-Phase Chemicals in Outdoor Air

Inhalation exposure to vapor-phase chemicals in outdoor air was evaluated for volatile chemicals using the volatilization factor approach described in USEPA (2004) and shown below. Volatile chemicals are defined as those chemicals having a Henry's Law constant greater than 1.0E-05 atmospheres-cubic meter per mole (atm-m³/mol) and a molecular weight less than 200 grams/mol (g/mol) (USEPA, 2004). The CDI associated with this pathway was calculated as follows:

$$CDI = \frac{CS / VF \times InhR \times EF \times ED}{BW \times AT}$$

Where:

CDI	=	Chronic Daily Intake (mg/kg/day)
CS	=	Chemical concentration in soil (mg/kg)
VF	=	Volatilization factor (m ³ /kg)
InhR	=	Inhalation rate (m ³ /day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

4.5.5 Inhalation of Indoor Air (Vapor Intrusion Pathway)

When buildings are constructed over soil containing volatile chemicals, there is some risk of vapor intrusion into the overlying structure. Vapors may enter the building through cracks in the foundation slab. When this occurs, individuals within the building may breathe the vapors. The DTSC version of the Johnson and Ettinger vapor intrusion model (Soil Screening Model modified April 18, 2003 [J&E Model]) was used to estimate risks due to air contaminants within the proposed facility. These results are included in the risk characterization section (Section 5) of this report. The J&E Model was used in accordance with DTSC guidance for vapor intrusion (DTSC, 2004). Non-default parameters used in the J&E Model are summarized in Appendix F.

The DTSC J&E model does not allow for estimation of the actual CDI for this pathway, instead model output is provided in terms of the predicted indoor air concentration and risk estimates (cancer risk for carcinogens or the hazard index for non-carcinogens). In addition, for child receptors, the J&E Model does not provide risk estimates for children. Therefore, for children, the indoor air concentration predicted by the J&E Model was used to calculate a CDI.

The CDI associated with inhalation of indoor air for the child receptor using the indoor air concentration predicted by the J&E Model was calculated as follows:

$$CDI = \frac{CA \times InhR \times EF \times ED \times CF}{BW \times AT}$$

Where:

CDI	=	Chronic Daily Intake (mg/kg/day)
CA	=	Chemical concentration in indoor air as predicted by J&E Model (µg/m ³)
InhR	=	Inhalation rate (m ³ /day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
CF	=	Conversion Factor (1E-03 mg/µg)
BW	=	Body weight for child (kg)
AT	=	Averaging time (days)

5.0 RISK CHARACTERIZATION

The health risks of a chemical are quantified in terms of non-cancer risks, and carcinogenic risks if the chemical is considered a carcinogen. Non-cancer health risks refer to all other adverse health effects besides cancer. Carcinogenic chemicals may present non-cancer health risks in addition to cancer risks; therefore the potential for both types of effects must be evaluated for carcinogens.

5.1 Non-Cancer Risks

The risk of non-cancer health effects is evaluated by comparing the CDI for each exposure route (oral, dermal, inhalation) to the corresponding USEPA Reference Dose (RfD). The RfD is defined by USEPA as “an estimate of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime” (USEPA, 1989). The risk of non-cancer health effects is expressed quantitatively as the ratio of the CDI to the RfD. This ratio is termed the Hazard Quotient (HQ). For example, in the case of an oral or ingestion exposure (such as soil ingestion):

$$HQ = \frac{CDI_{oral}}{RfD_{oral}}$$

An HQ value greater than 1 indicates that the chemical exposure for that route of exposure exceeds the level considered safe for long-term exposure by USEPA.

In most cases, exposure from additional routes of exposure must be considered (dermal and inhalation), and the above equation is modified as follows:

$$HQ = \frac{CDI_{oral}}{RfD_{oral}} + \frac{CDI_{inh}}{RfD_{inh}} + \frac{CDI_{dermal}}{RfD_{dermal}}$$

A HQ value greater than 1 indicates that the daily intake of chemical via all routes of exposure exceeds USEPA safe levels for long-term exposure as defined by the RfD. Since USEPA has not developed RfDs for the dermal exposure route, the oral route RfD is used to evaluate exposure via the dermal pathways.

RfDs used to calculate non-cancer risks were obtained from the USEPA Integrated Risk Information System (IRIS) via the USEPA website. However, when an inhalation Chronic Reference Exposure Level (REL) (the California equivalent of an inhalation RfD) was available, the REL was used in lieu of the USEPA inhalation RfD. This usually requires a unit conversion from $\mu\text{g}/\text{m}^3$ for the inhalation REL to $\text{mg}/\text{kg}/\text{day}$ for an inhalation RfD. If an RfD was not available from IRIS, it was obtained from the following sources, in order of preference:

- OEHHA Chronic Reference Exposure Levels (OEHHA, 2005)
- USEPA Region IX Preliminary Remediation Goal Document (USEPA, 2004)

-
- The USEPA Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997)

5.2 Cumulative Non-Cancer Risks

It is possible for the total HQ (for all pathways) for each contaminant to be less than 1, but still present a potential for adverse non-cancer effects. This can happen from the cumulative effects of contaminants that have a similar toxic mechanism and/or target organ. Although each contaminant exposure level may be acceptable when considered separately, the total cumulative effect of similarly acting toxicants can create a potential for an adverse effect. To ensure that the cumulative non-cancer risk from multiple similarly acting contaminants is adequately considered, the total HQs across all contaminants are summed to obtain a Hazard Index (HI) as follows:

$$HI = HQ_1 + HQ_2 + HQ_3 \dots + HQ_n$$

This is a conservative first step in the analysis of cumulative effect potential because it disregards the specific mechanism of toxicity or target organ. In other words, it assumes that all contaminants act by a similar mechanism of action or have a similar toxic effect when in fact they may not. If the resulting cumulative HI using this conservative approach is greater than 1, a more refined analysis can be conducted. In the refined analysis, referred to by USEPA as a “segregation of hazard indices” (USEPA, 1989), the COPCs are divided into subgroups based on similarity of effect. A cumulative HI is then calculated for each subgroup. If an HI of greater than 1 is still obtained for one of the subgroups, then the subgroup may be further classified based on mechanism of toxicity, and the subgroup HI values recalculated. HI values for each receptor population are shown in Tables 5, 7, and 9 for the construction worker, adult resident, and child resident, respectively.

5.3 Lead Risks

Health risks associated with lead exposure are not evaluated using the RfD approach described above. Instead, lead health risks are evaluated based on the expected blood lead concentration that will result from exposure. The DTSC and USEPA have developed special models to predict blood lead concentrations and assess health risks associated with blood lead. The DTSC’s model is called “Leadsread”. Health risks to the adult and child residential receptors due to lead exposure were assessed using the latest version of this model (Leadsread 7). Consistent with DTSC risk guidance, the 99th percentile blood lead concentration was considered to be the cut-off for acceptable risks. That is, acceptable lead levels in soil for any given exposure scenario are defined as those which produce a blood lead no greater than 10 µg/deciliter (dl) in 99 percent of the exposed population (adult and child). The blood lead level of concern is 10 µg/dl for a child and 4.7 µg/dl for adults in a residential setting. The soil lead levels of concern are 150 mg/kg for residential settings and 3,500 mg/kg for commercial settings.

The USEPA’s Adult Lead Methodology (ALM) model was used to assess health risks to the adult construction worker due to lead exposure. The ALM also includes assessment of lead exposure to a pregnant worker, as the fetus is the most sensitive receptor. The ALM is currently recommended by USEPA and DTSC for addressing commercial scenario adult lead exposures. As in the Leadsread model, in the ALM model, acceptable lead levels in soil for any given exposure scenario are defined as those which produce a blood lead no greater than 10 µg/deciliter (dl) in the geometric mean for

the adult worker and 95 percent among fetus of adult workers. The blood lead level of concern is 10 µg/dl.

The Leadsread modeling for the residential receptors indicate that, based on a lead EPC of 76.2 mg/kg in soil, blood lead levels are below the level of concern. The ALM modeling for the construction worker, also based on a lead EPC of 76.2 mg/kg in soil, blood levels are below the level of concern. Therefore, health risks due to lead are not of concern at the site and are not considered significant.

The Leadsread and ALM modeling results are presented in Appendix G.

5.4 Cancer Risks

Cancer risks are calculated by multiplying the total CDI for all exposure pathways for each route of exposure by the route-specific Cancer Slope Factor (CSF) as follows:

$$Cancer\ Risk = CSF \times CDI$$

CSFs used to calculate cancer risks were obtained preferentially from State of California sources. If a CSF for a particular chemical was not available from a State of California source, then it was obtained from the following sources, in order of preference:

- The USEPA Integrated Risk Information System (IRIS) (accessed via the USEPA website)
- USEPA Region IX Preliminary Remediation Goal document (USEPA, 2004)
- The USEPA Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997)

Toxicity factors used in the HRA are presented in Tables 3 and 4

5.5 Final Health Risk Estimates

Non-carcinogenic health risk (hazard index) and cancer risk values for each receptor population are provided below and in Tables 5 through 10

Construction Worker (Hazard Index and Cancer Risk)

The total HI for the Construction Worker is **0.1** (Table 5). The total cancer risk for the Construction Worker is **1.52×10^{-6}** (Table 6).

Adult Residential Receptor (Hazard Index)

The total HI for the Adult Residential Receptor is **0.1** (Table 7).

Child Residential Receptor (Hazard Index)

The total HI for the Child Residential Receptor is **0.4** (Table 8).

Adult and Child Residential Receptor (Cancer Risk)

The total cancer risk for the adult and child Residential Receptor is **1.57×10^{-5}** (Table 9).

6.0 UNCERTAINTIES

Due to limitation of available scientific data and in the amount and type of site investigation data collected, every risk assessment will have uncertainties associated with it. The primary sources of uncertainty for the present risk assessment include:

- Uncertainties in exposure parameter assumptions
- Uncertainties in toxicity criteria
- Uncertainties in the characterization and evaluation of the vapor intrusion pathway

Uncertainties in exposure parameter assumptions are related to the general lack of quantitative studies describing important aspects of human behavior such as incidental soil ingestion rates (particularly adults), length of time spent at one residence, time spent outdoors, etc. In general, this uncertainty has been dealt with by erring on the conservative side and using upper-bound exposure assumptions that will tend to overestimate the exposure occurring to most individuals. This approach to exposure parameter uncertainty is the basis for the RME exposure scenario concept and will tend to result in an overestimation of health risks. In addition, chemicals for which there were more than 50% non-detects, the maximum detected concentration was used as the EPC. This will also tend to result in an overestimation of health risks.

Important uncertainties in toxicity criteria include: 1) the complete absence of RfDs or CSFs for some chemicals (for example, silvex, in the present report), 2) the lack of an adequate toxicological basis for some toxicity criteria, 3) the uncertainty associated with applying oral route toxicity criteria to the inhalation route or dermal route, and 4) the complete lack of toxicity criteria for the dermal route. The general lack of toxicity criteria based on a solid database of underlying toxicological data results in a reduced ability to accurately quantify both non-cancer and cancer risks. This may result in both under- and over-estimation of health risks.

7.0 SUMMARY AND CONCLUSIONS

A health risk assessment (HRA) was prepared on behalf of the Los Angeles County Department of the Agricultural Commissioner (LACDAC) for the evaluation of the potential human health risks attributable to contaminants present in soil beneath the former Pico Rivera Facility site located at 8841 East Slauson Avenue. The site was used by LACDAC from the 1930's to the early 1990's for the following purposes: offices, raising of beneficial insects, mixing of rodent and bird baits for pest control, disposal of pesticides acquired from a pesticide collection program, and incineration of plants held under quarantine for pests or disease. Soil and groundwater at the site have been extensively investigated by the County since closure of the facility in 1990. Site facilities, including a 4,000-gallon underground storage tank (UST) and associated wash rack/concrete pad, cesspool and associated sludge and soil, incinerator, above ground weed oil tanks, irrigation well, garage, storage bins, and building materials have been removed. Soils and other media have been investigated.

The HRA evaluated exposures occurring to construction workers and potential adult and child residents. The following exposure pathways were evaluated depending on the receptor population: soil ingestion, dermal contact with soil, inhalation of soil particulates and volatiles released from soil. In addition, the vapor intrusion exposure pathway was evaluated for the adult and child residents. This pathway is not a concern for construction workers since this is an indoor pathway and construction workers are assumed to be working outdoors. Both cancer and non-cancer health risks were evaluated.

The risk assessment methods used in this HRA were selected first to be consistent with recommendations of the California regulatory agencies primarily responsible for reviewing site risk assessments in California. These agencies include the California Department of Toxic Substances Control (DTSC) and the California Office of Environmental Health Hazard Assessment (OEHHA). If risk guidance was not available from the California agencies for some aspect of the risk assessment, recommendations of the United States Environmental Protection Agency (USEPA) were selected.

The results of the HRA show that cumulative cancer risks for the construction worker and adult and child residents are above the DTSC and OEHHA negligible cancer risk threshold of 1×10^{-6} , but within the USEPA target risk range of 1×10^{-6} to 1×10^{-4} which is considered to be safe and protective of human health. The increased potential for cumulative cancer risks to the construction worker and residents is due to potential soil ingestion and dermal contact with dieldrin in soil. Cumulative non-cancer risks for the construction worker, adult, and child residents are all below the Hazard Index threshold of 1, indicating that potential exposures are not expected to result in adverse health effects.

Using the California Department of Toxic Substances Control Leadsread model to evaluate lead risks for on-site resident lead exposure; lead risks are considered insignificant. The USEPA Adult Lead Methodology (ALM) model was used to assess risk from on-site exposure to lead for the construction worker. Lead risks are also considered insignificant for the construction worker.

8.0 LIMITATIONS AND CERTIFICATIONS

This HRA was prepared in accordance with risk assessment methodologies recommended at the present time by regulatory agencies having jurisdiction in the State of California. It should be recognized that an assessment of the human health risk associated with exposures to chemicals in the environment is a difficult and inexact science. Professional judgments leading to conclusions and recommendations are generally made with a margin of error inherent to the risk assessment process.

Analytical data used in the HRA were developed by others. It is sometimes difficult to verify the adequacy or accuracy of the site investigations through which these data were developed. For this reason, we attempted to use health-conservative assumptions wherever data or information was limited or uncertain. Also, the final recommendations presented in this document are meant to reduce the uncertainties associated with past site investigative work and minimize any potential health risks.

9.0 REFERENCES

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TABLES

TABLE 1.
LIST OF CHEMICALS OF POTENTIAL CONCERN
AND EXPOSURE POINT CONCENTRATIONS (EPCs) - SOILS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Inorganics		Organics	
COPC ¹	EPC ² (mg/kg)	COPC	EPC (mg/kg)
<u>Metals</u> Cadmium Lead	1.60E+00 7.62E+01	<u>VOCs</u> Toluene	1.50E-02
		<u>SVOCs</u> Benzo(a)pyrene Diethylphthalate	5.00E-02 4.20E+00
		<u>Pesticides/Herbicides</u> beta-BHC delta-BHC alpha-chlordane gamma-chlordane 2,4-Dichlorophenoxy Acetate Acid Total DDT Dalapon Dieldrin Endrin (Total) Heptachlor Heptachlor Epoxide Silvex	6.40E-03 5.50E-03 2.34E-01 2.63E-01 5.50E-01 1.11E+00 3.33E+00 1.00E+00 3.40E-03 1.90E-01 3.90E-03 2.10E-01
		<u>Dioxins/Furans</u> Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin	5.60E-06

Notes:

¹ COPC = Chemical of potential concern

² EPC = Exposure Point Concentration

TABLE 2.
EXPOSURE PARAMETERS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Exposure Parameter ¹	Acronym	Receptors			Units	Reference
		Construction Worker	Resident			
			Adult	Child		
General Parameters						
Body Weight	BW	70	70	15	kg	DTSC (1992, 1994, 1996)
Averaging Time (carcinogens)	AT _c	25,550	25,550	25,550	days	DTSC (1992, 1994, 1996)
Averaging Time (noncarcinogens)	AT _n	365	8,760	2,190	days	DTSC (1992, 1994, 1996)
Conversion Factor	CF _s	1.00E-06	1.00E-06	1.00E-06	kg/mg	
Exposure Frequency	EF	250	350	350	days/year	DTSC (1992, 1994, 1996)
Exposure Duration	ED	1	24	6	years	DTSC (1992, 1994, 1996)
Soil Ingestion Pathway						
Soil Ingestion Rate	IR	330	100	200	mg/day	DTSC (1994), USEPA (2001)
Dermal Contact With Soil						
Skin Surface Area	SA _s	5,700	5,700	2,900	cm ² /event	DTSC (2000)
Soil-to-Skin Adherence Factor	AF	0.8	0.07	0.2	mg/cm ²	DTSC (2000)
Fraction of Chemical Dermal Absorbed ¹	ABS	Chemical-Specific	Chemical-Specific	Chemical-Specific	unitless	DTSC (1994)
Soil Contact Exposure Frequency	EF	250	350	350	events/year	DTSC (2000)
Inhalation of Soil Particulates and Volatiles						
Particulate Emission Factor	PEF	1.32E+09	1.32E+09	1.32E+09	m ³ /kg	USEPA (2004)
Inhalation Rate	InhR	20	20	10	m ³ /day	DTSC (1992, 1994, 1996)
Volatilization Factor	VF	Chemical-specific	Chemical-Specific	Chemical-Specific	m ³ /kg	USEPA (2004)

Notes:

¹Dermal absorption values, in general: 1% for organics, 10% for organics, unless otherwise specified by DTSC (1994).

TABLE 3.
TOXICITY CRITERIA FOR CHEMICALS OF POTENTIAL CONCERN - ORGANICS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

COPC	REFERENCE DOSES				CANCER SLOPE FACTORS			
	Oral Reference Dose (RfD _o) ^a		Inhalation Reference Dose (RfD _i)		Oral Slope Factor (CSF _o) ^b		Inhalation Slope Factor (CSF _i)	
	(mg/kg-day)		(mg/kg-day)		(mg/kg-day) ⁻¹		(mg/kg-day) ⁻¹	
VOCs								
Toluene	2.00E-01	IRIS, 2005	8.57E-02	OEHHA, 2005	NC	--	NC	--
SVOCS								
Benzo(a)pyrene	No Data	--	No Data	--	1.20E+01	OEHHA, 2005	3.90E+00	OEHHA, 2005
Diethylphthalate	8.00E-01	IRIS, 2005	8.00E-01	R	NC	--	NC	--
Pesticides/Herbicides								
beta-BHC ¹	3.00E-04	IRIS, 2005	3.00E-04	R	1.50E+00	OEHHA, 2005	1.50E+00	OEHHA, 2005
delta-BHC ¹	3.00E-04	IRIS, 2005	3.00E-04	R	No Data	--	No Data	--
alpha-chlordane ²	5.00E-04	IRIS, 2005	5.00E-04	R	1.30E+00	OEHHA, 2005	1.20E+00	OEHHA, 2005
gamma-chlordane ²	5.00E-04	IRIS, 2005	5.00E-04	R	1.30E+00	OEHHA, 2005	1.20E+00	OEHHA, 2005
2,4-Dichlorophenoxy Acetate Acid	No Data	--	No Data	--	No Data	--	No Data	--
Total DDT ³	5.00E-04	IRIS, 2005	5.00E-04	R	3.40E-01	OEHHA, 2005	3.40E-01	OEHHA, 2005
Dalapon	3.00E-02	IRIS, 2005	3.00E-02	R	NC	--	NC	--
Dieldrin	5.00E-05	IRIS, 2005	5.00E-05	R	1.60E+01	OEHHA, 2005	1.60E+01	OEHHA, 2005
Endrin (Total)	3.00E-04	IRIS, 2005	3.00E-04	R	NC	--	NC	--
Heptachlor	5.00E-04	IRIS, 2005	5.00E-04	R	4.10E+00	OEHHA, 2005	4.10E+00	OEHHA, 2005
Heptachlor Epoxide	1.30E-05	IRIS, 2005	1.30E-05	R	5.50E+00	OEHHA, 2005	5.50E+00	OEHHA, 2005
Silvex	No Data	--	No Data	--	No Data	--	No Data	--
Dioxins/Furans								
Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.00E-08	OEHHA, 2005	1.10E-08	OEHHA, 2005	1.30E+05	OEHHA, 2005	1.30E+05	OEHHA, 2005

Abbreviations:

COPC = chemical of potential concern
CSF_o = oral cancer slope factor
CSF_i = inhalation cancer slope factor
COPC = chemical of potential concern

EPC = exposure point concentration
mg/kg-day = milligrams per kilogram body weight per day
NC = Not a suspected carcinogen
R = Route-to-route extrapolation

RfD_o = oral reference dose
RfD_i = inhalation reference dose
"--" = not available or applicable

Notes:

^a. In the absence of dermal toxicity values, oral reference doses and/or cancer slope factors were used to evaluate exposure dermal exposure.

¹Reference doses not available for beta-BHC, delta-BHC; reference doses for the surrogate compound gamma-BHC used.

²Reference doses and cancer slope factors not available for alpha-chlordane, gamma-chlordane; references doses, cancer slope factors for surrogate compound chlordane used.

³Reference dose and cancer slope factor for 4,4-DDT used.

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TABLE 4.
TOXICITY CRITERIA FOR CHEMICALS OF POTENTIAL CONCERN - INORGANICS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

COPC	REFERENCE DOSES				CANCER SLOPE FACTORS			
	Oral Reference Dose (RfD _o) ^a		Inhalation Reference Dose (RfD _i)		Oral Slope Factor (CSF _o) ^b		Inhalation Slope Factor (CSF _i)	
	(mg/kg-day)		(mg/kg-day)		(mg/kg-day) ⁻¹		(mg/kg-day) ⁻¹	
<u><i>Inorganics</i></u> Cadmium	5.00E-04	IRIS, 2005	5.71E-06	OEHHA, 2005	NC	--	1.20E+01	OEHHA, 2005

Abbreviations:

COPC = chemical of potential concern
 CSF_o = oral cancer slope factor
 CSF_i = inhalation cancer slope factor
 COPC = chemical of potential concern

EPC = exposure point concentration
 mg/kg-day = milligrams per kilogram body weight per day
 NC = Not a suspected carcinogen
 R = Route-to-route extrapolation

RfD_o = oral reference dose
 RfD_i = inhalation reference dose
 "--" = not available or applicable

Notes:

^a. In the absence of dermal toxicity values, oral reference doses and/or cancer slope factors were used to evaluate exposure dermal exposure.

References:

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 OEHHA/ARB, 2003. Office of Environmental Health Hazard Assessment (OEHHA)/Air Resources Board (ARB), OEHHA/ARB Approved Chronic Reference Exposure Levels and Target Organs Table, December 4, 2003.
 OEHHA, 2005. Online Toxicity Criteria Database, Cal/EPA online database. <http://www.oehha.ca.gov/risk/chemicaldb/index.asp>.
 USEPA, 2004. United States Environmental Protection Agency (USEPA) Region XI, Preliminary Remediation Goals Table, October 2004.

TABLE 5.
NON-CANCER RISKS
CHRONIC DAILY INTAKES AND HAZARD QUOTIENTS
CONSTRUCTION WORKER
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

COPC	EPC	CDI mg/kg-day)					Total CDI	Hazard Quotient
		Soil Ingestion	Dermal Contact with Soil	Inhalation of Particulate-Phase Chemicals in Outdoor Air	Inhalation of Vapor-Phase Chemicals in Outdoor Air			
Organics-Soil (mg/kg)								
VOCs								
Toluene	1.50E-02	4.84E-08	6.69E-08	NA	7.34E-07	8.49E-07	9.14E-06	
SVOCs								
Benzo(a)pyrene	5.00E-02	1.61E-07	3.35E-07	7.41E-12		4.96E-07	NA	
Diethylphthalate	4.20E+00	1.36E-05	1.87E-05	6.23E-10	NA	3.23E-05	4.04E-05	
Pesticides/Herbicides								
beta-BHC	6.40E-03	2.07E-08	1.43E-08	9.49E-13	NA	3.49E-08	1.16E-04	
delta-BHC	5.50E-03	1.78E-08	1.23E-08	8.15E-13	NA	3.00E-08	1.00E-04	
alpha-chlordane	2.34E-01	7.56E-07	5.22E-07	3.47E-11	NA	1.28E-06	2.56E-03	
gamma-chlordane	2.63E-01	8.50E-07	5.87E-07	3.90E-11	NA	1.44E-06	2.88E-03	
2,4-Dichlorophenoxy Acetate Acid	5.50E-01	1.78E-06	1.23E-06	8.15E-11	NA	3.00E-06	NA	
Total DDT	1.11E+00	3.58E-06	2.48E-06	1.65E-10	NA	6.06E-06	1.21E-02	
Dalapon	3.33E+00	1.07E-05	7.43E-06	4.94E-10	NA	1.82E-05	6.06E-04	
Dieldrin	1.00E+00	3.23E-06	2.23E-06	1.48E-10	NA	5.46E-06	1.09E-01	
Endrin (Total)	3.40E-03	1.10E-08	7.59E-09	5.04E-13	NA	1.86E-08	6.19E-05	
Heptachlor	1.90E-01	6.14E-07	4.24E-07	2.82E-11	NA	1.04E-06	2.07E-03	
Heptachlor Epoxide	3.90E-03	1.26E-08	8.70E-09	5.78E-13	NA	2.13E-08	1.64E-03	
Silvex	2.10E-01	6.78E-07	4.68E-07	3.11E-11	NA	1.15E-06	NA	
Dioxins/Furans								
Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5.60E-06	1.81E-11	7.50E-12	8.31E-16	NA	2.56E-11	2.56E-03	
Inorganics (mg/kg)								
Cadmium	1.60E+00	5.17E-06	2.14E-06	2.37E-10	NA	7.31E-06	1.47E-02	
Total Hazard Index							0.1	

Notes:

NA = Not applicable or available

TABLE 6.
CANCER RISKS AND CHRONIC DAILY INTAKES
CONSTRUCTION WORKER
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

COPC	EPC	CDI (mg/kg-day)				Total CDI	Cancer Risk
		Soil Ingestion	Dermal Contact with Soil	Inhalation of Particulate-Phase Chemicals in Outdoor Air	Inhalation of Vapor-Phase Chemicals in Outdoor Air		
Organics-Soil (mg/kg)							
VOCs							
Toluene	1.50E-02	6.92E-10	9.56E-10	NA	1.05E-08	1.21E-08	NC
SVOCs							
Benzo(a)pyrene	5.00E-02	2.31E-09	4.78E-09	1.06E-13	NA	7.09E-09	8.50E-08
Diethylphthalate	4.20E+00	1.94E-07	2.68E-07	8.90E-12	NA	4.61E-07	NA
Pesticides/Herbicides							
beta-BHC	6.40E-03	2.95E-10	2.04E-10	1.36E-14	NA	4.99E-10	7.49E-10
delta-BHC	5.50E-03	2.54E-10	1.75E-10	1.16E-14	NA	4.29E-10	NA
alpha-chlordane	2.34E-01	1.08E-08	7.46E-09	4.96E-13	NA	1.83E-08	2.37E-08
gamma-chlordane	2.63E-01	1.21E-08	8.39E-09	5.58E-13	NA	2.05E-08	2.67E-08
2,4-Dichlorophenoxy Acetate Acid	5.50E-01	2.54E-08	1.75E-08	1.16E-12	NA	4.29E-08	NA
Total DDT	1.11E+00	5.12E-08	3.54E-08	2.35E-12	NA	8.66E-08	2.94E-08
Dalapon	3.33E+00	1.54E-07	1.06E-07	7.05E-12	NA	2.60E-07	NC
Dieldrin	1.00E+00	4.61E-08	3.19E-08	2.12E-12	NA	7.80E-08	1.25E-06
Endrin (Total)	3.40E-03	1.57E-10	1.08E-10	7.20E-15	NA	2.65E-10	NC
Heptachlor	1.90E-01	8.76E-09	6.06E-09	4.02E-13	NA	1.48E-08	6.08E-08
Heptachlor Epoxide	3.90E-03	1.80E-10	1.24E-10	8.26E-15	NA	3.04E-10	1.67E-09
Silvex	2.10E-01	9.69E-09	6.69E-09	4.45E-13	NA	1.64E-08	NA
Dioxins/Furans							
Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5.60E-06	2.59E-13	1.07E-13	1.19E-17	NA	3.66E-13	4.75E-08
Inorganics (mg/kg)							
Cadmium	1.60E+00	7.38E-08	3.06E-08	3.39E-12	NA	1.04E-07	4.07E-11
Total Cancer Risk							1.52E-06

Notes:

NA = Not applicable or available

NC = Not a known or suspected carcinogen

TABLE 7.
NON-CANCER RISKS
CHRONIC DAILY INTAKES AND HAZARD QUOTIENTS
ADULT RESIDENTIAL RECEPTOR
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

COPC	EPC	CDI (mg/kg-day)					Hazard Quotient
		Soil Ingestion	Dermal Contact with Soil	Inhalation of Particulate-Phase Chemicals in Outdoor Air	Inhalation of Indoor Air (Vapor Intrusion)	Total CDI	
Organics-Soil (mg/kg)							
VOCs							
Toluene	1.50E-02	2.05E-08	8.20E-09	NA	JE Modeling ¹	2.87E-08	9.77E-03
SVOCs							
Benzo(a)pyrene	5.00E-02	6.85E-08	4.10E-08	1.04E-11	NA	1.09E-07	NA
Diethylphthalate	4.20E+00	5.75E-06	2.30E-06	8.72E-10	NA	8.05E-06	1.01E-05
Pesticides/Herbicides							
beta-BHC	6.40E-03	8.77E-09	1.75E-09	1.33E-12	NA	1.05E-08	3.51E-05
delta-BHC	5.50E-03	7.53E-09	1.50E-09	1.14E-12	NA	9.04E-09	3.01E-05
alpha-chlordane	2.34E-01	3.21E-07	6.40E-08	4.86E-11	NA	3.85E-07	7.69E-04
gamma-chlordane	2.63E-01	3.61E-07	7.20E-08	5.47E-11	NA	4.33E-07	8.65E-04
2,4-Dichlorophenoxy Acetate Acid	5.50E-01	7.53E-07	1.50E-07	1.14E-10	NA	9.04E-07	NA
Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.11E+00	1.52E-06	3.03E-07	2.30E-10	NA	1.82E-06	3.65E-03
Dalapon	3.33E+00	4.56E-06	9.10E-07	6.91E-10	NA	5.47E-06	1.82E-04
Dieldrin	1.00E+00	1.37E-06	2.73E-07	2.08E-10	NA	1.64E-06	3.29E-02
Endrin (Total)	3.40E-03	4.66E-09	9.29E-10	7.06E-13	NA	5.59E-09	1.86E-05
Heptachlor	1.90E-01	2.60E-07	5.19E-08	3.94E-11	NA	3.12E-07	6.24E-04
Heptachlor Epoxide	3.90E-03	5.34E-09	1.07E-09	8.09E-13	NA	6.41E-09	4.93E-04
Silvex	2.10E-01	2.88E-07	5.74E-08	4.36E-11	NA	3.45E-07	NA
Dioxins/Furans							
Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5.60E-06	7.68E-12	9.19E-13	1.16E-15	NA	8.60E-12	8.60E-04
Inorganics (mg/kg)							
Arsenic	1.60E+00	2.19E-06	2.62E-07	3.32E-10	NA	2.45E-06	4.97E-03
Total Hazard Index							0.1

Notes:

NA = Not applicable for off-site receptor populations/Not applicable or available.

¹Hazard Quotient of 1.26E-02 calculated using the Johnson-Ettinger model. HQ added to total HQ for toluene

TABLE 8.
NON-CANCER RISKS
CHRONIC DAILY INTAKES AND HAZARD QUOTIENTS
CHILD RESIDENTIAL RECEPTOR
LOS ANGELES COUNTY DEPARTMENT OF THE AGRICULTURAL COMMISSIONER
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

COPC	EPC	CDI (mg/kg-day)					Hazard Quotient
		Soil Ingestion	Dermal Contact with Soil	Inhalation of Particulate-Phase Chemicals in Outdoor Air	Inhalation of Indoor Air (Volatiles Only) ¹	Total CDI	
Organics-Soil (mg/kg)							
VOCs							
Toluene	1.50E-02	1.92E-07	5.56E-08	NA	1.95E-04	1.96E-04	2.28E-03
SVOCs							
Benzo(a)pyrene	5.00E-02	6.39E-07	2.78E-07	2.42E-11	NA	9.17E-07	NA
Diethylphthalate	4.20E+00	3.22E-04	1.56E-05	2.03E-09	NA	3.38E-04	4.22E-04
Pesticides/Herbicides							
beta-BHC	6.40E-03	8.18E-08	1.19E-08	3.10E-12	NA	9.37E-08	3.12E-04
delta-BHC	5.50E-03	7.03E-08	1.02E-08	2.66E-12	NA	8.05E-08	2.68E-04
alpha-chlordane	2.34E-01	2.99E-06	4.34E-07	1.13E-10	NA	3.43E-06	6.85E-03
gamma-chlordane	2.63E-01	3.37E-06	4.88E-07	1.28E-10	NA	3.85E-06	7.71E-03
2,4-Dichlorophenoxy Acetate Acid	5.50E-01	7.03E-06	1.02E-06	2.66E-10	NA	8.05E-06	NA
Total DDT	1.11E+00	1.42E-05	2.06E-06	5.38E-10	NA	1.63E-05	3.25E-02
Dalapon	3.33E+00	4.26E-05	6.17E-06	1.61E-09	NA	4.87E-05	1.62E-03
Dieldrin	1.00E+00	1.28E-05	1.85E-06	4.84E-10	NA	1.46E-05	2.93E-01
Endrin (Total)	3.40E-03	4.35E-08	6.30E-09	1.65E-12	NA	4.98E-08	1.66E-04
Heptachlor	1.90E-01	2.43E-06	3.52E-07	9.20E-11	NA	2.78E-06	5.56E-03
Heptachlor Epoxide	3.90E-03	4.99E-08	7.23E-09	1.89E-12	NA	5.71E-08	4.39E-03
Silvex	2.10E-01	2.68E-06	3.89E-07	1.02E-10	NA	3.07E-06	NA
Dioxins/Furans							
Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5.60E-06	7.17E-11	6.23E-12	2.71E-15	NA	7.79E-11	7.79E-03
Inorganics (mg/kg)							
Cadmium	1.60E+00	2.05E-05	1.78E-06	7.75E-10	NA	2.22E-05	4.46E-02
Total Hazard Index							0.4

Notes:

NA = Not applicable for off-site receptor populations/Not applicable or available.

¹ CDI was calculated using the indoor air concentration predicted by the J&E Model.

**TABLE 9.
CANCER RISKS AND CHRONIC DAILY INTAKES
ADULT AND CHILD RESIDENTIAL RECEPTOR
LOS ANGELES COUNTY DEPARTMENT OF THE AGRICULTURAL COMMISSIONER
88841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

COPC	EPC	CDI (mg/kg-day)					Cancer Risk
		Soil Ingestion	Dermal Contact with Soil	Inhalation of Particulate-Phase Chemicals in Outdoor Air	Inhalation of Indoor Air (Vapor Intrusion)	Total CDI	
Organics-Soil (mg/kg)							
VOCs							
Toluene	1.50E-02	8.81E-09	3.51E-09	NA	JE Modeling ¹	1.23E-08	NC
SVOCs							
Benzo(a)pyrene	5.00E-02	2.94E-08	1.76E-08	4.45E-12	NA	4.69E-08	5.63E-07
Diethylphthalate	4.20E+00	2.47E-06	9.84E-07	3.74E-10	NA	3.45E-06	NA
Pesticides/Herbicides							
beta-BHC	6.40E-03	3.76E-09	1.50E-09	5.69E-13	NA	5.26E-09	7.89E-09
delta-BHC	5.50E-03	3.23E-09	1.29E-09	4.89E-13	NA	4.52E-09	NA
alpha-chlordane	2.34E-01	1.37E-07	5.48E-08	2.08E-11	NA	1.92E-07	2.50E-07
gamma-chlordane	2.63E-01	1.55E-07	6.17E-08	2.34E-11	NA	2.16E-07	2.81E-07
2,4-Dichlorophenoxy Acetate Acid	5.50E-01	3.23E-07	1.29E-07	4.89E-11	NA	4.52E-07	NA
Total DDT	1.11E+00	6.52E-07	2.60E-07	9.87E-11	NA	9.12E-07	3.10E-07
Dalapon	3.33E+00	1.95E-06	7.80E-07	2.96E-10	NA	2.73E-06	NC
Dieldrin	1.00E+00	5.87E-07	2.34E-07	8.90E-11	NA	8.21E-07	1.31E-05
Endrin (Total)	3.40E-03	2.00E-09	7.96E-10	3.02E-13	NA	2.79E-09	NC
Heptachlor	1.90E-01	1.12E-07	4.45E-08	1.69E-11	NA	1.56E-07	6.40E-07
Heptachlor Epoxide	3.90E-03	2.29E-09	9.14E-10	3.47E-13	NA	3.20E-09	1.76E-08
Silvex	2.10E-01	1.23E-07	4.92E-08	1.87E-11	NA	1.72E-07	NA
Dioxins/Furans							
Total Equivalent 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5.60E-06	3.29E-12	3.94E-13	4.99E-16	NA	3.68E-12	4.79E-07
Inorganics (mg/kg)							
Cadmium	1.60E+00	9.39E-07	1.12E-07	1.42E-10	NA	1.05E-06	1.71E-09
Total Cancer Risk (Adult and Child)							1.57E-05

Notes:

NA = Not applicable for off-site receptor populations/Not applicable or available.

NC = Not a known or suspected carcinogen.

¹Cancer Risk calculated using the Johnson-Ettinger model. However, toluene is not a known or suspected carcinogen.

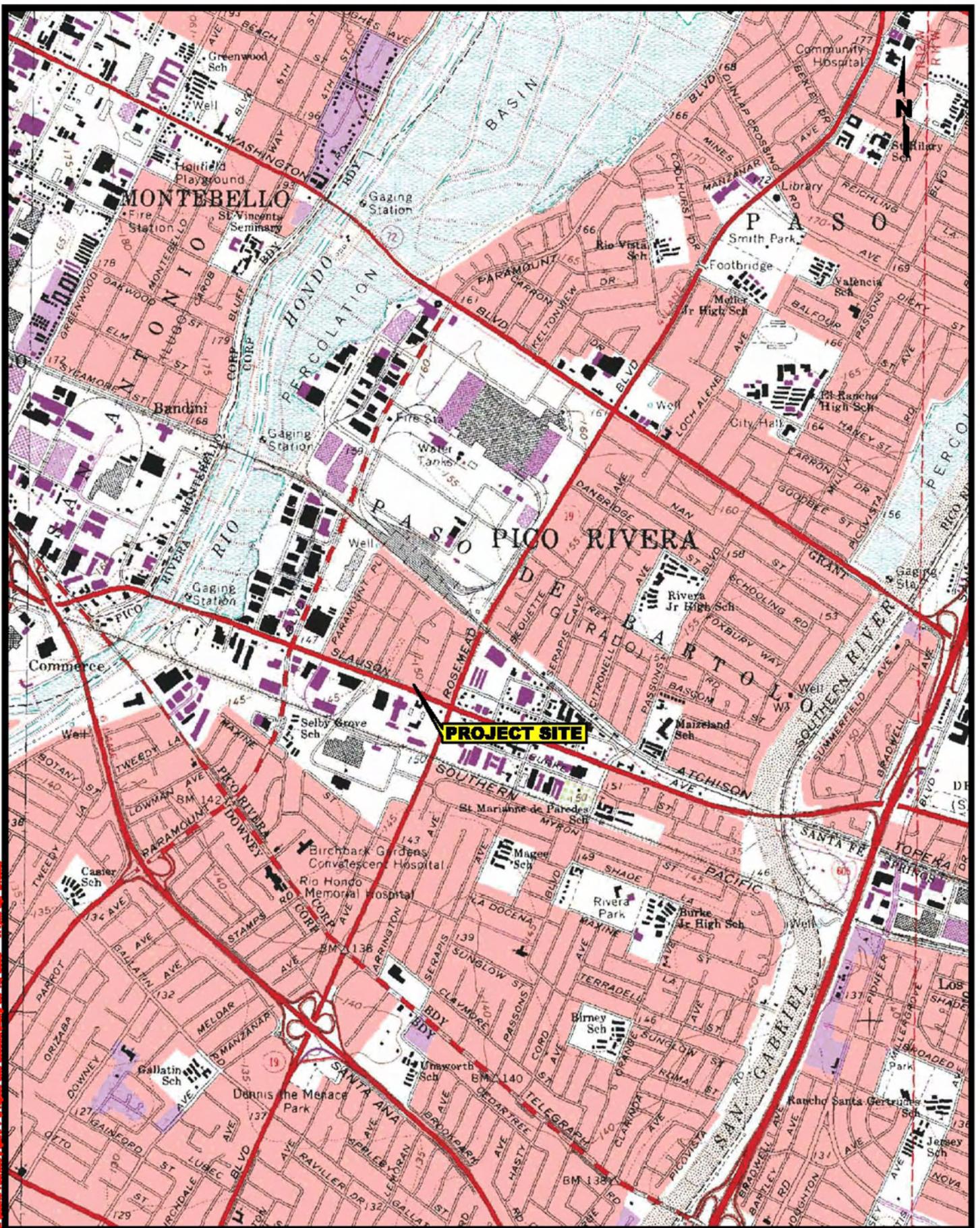
**TABLE 10.
SUMMARY OF TOTAL RISKS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

Receptor	Risk Assessment Results		Chemical Risk Driver	Relative Contribution to Total Risk	Exposure Pathway
Construction Worker	Hazard Index:	0.1	--	--	--
	Cancer Risk	1.52E-06	Dieldrin	82%	Direct Contact (Oral and Dermal)
Resident (Adult and Child)	Cancer Risk	1.57E-05	Dieldrin	84%	Direct Contact (Oral and Dermal)
Resident (Adult)	Hazard Index:	0.1	--	--	--
Resident (Child)	Hazard Index:	0.4	--	--	--

Notes:

Bold risk assessment results indicate exceedance of California Department of Toxic Substances Control (DTSC) and Office of Environmental Health Hazard Assessment (OEHHA) negligible cancer risk threshold of 1E-06 and non-cancer hazard index threshold of "1".

FIGURES



SOURCE: USGS WHITTIER, CALIFORNIA QUADRANGLE 1965, PHOTOREVISED 1981

FIGURE 1. LOCATION MAP OF FORMER LOS ANGELES COUNTY AGRICULTURAL FACILITY, 8841 EAST SLAUSON AVE, PICO RIVERA, CALIFORNIA

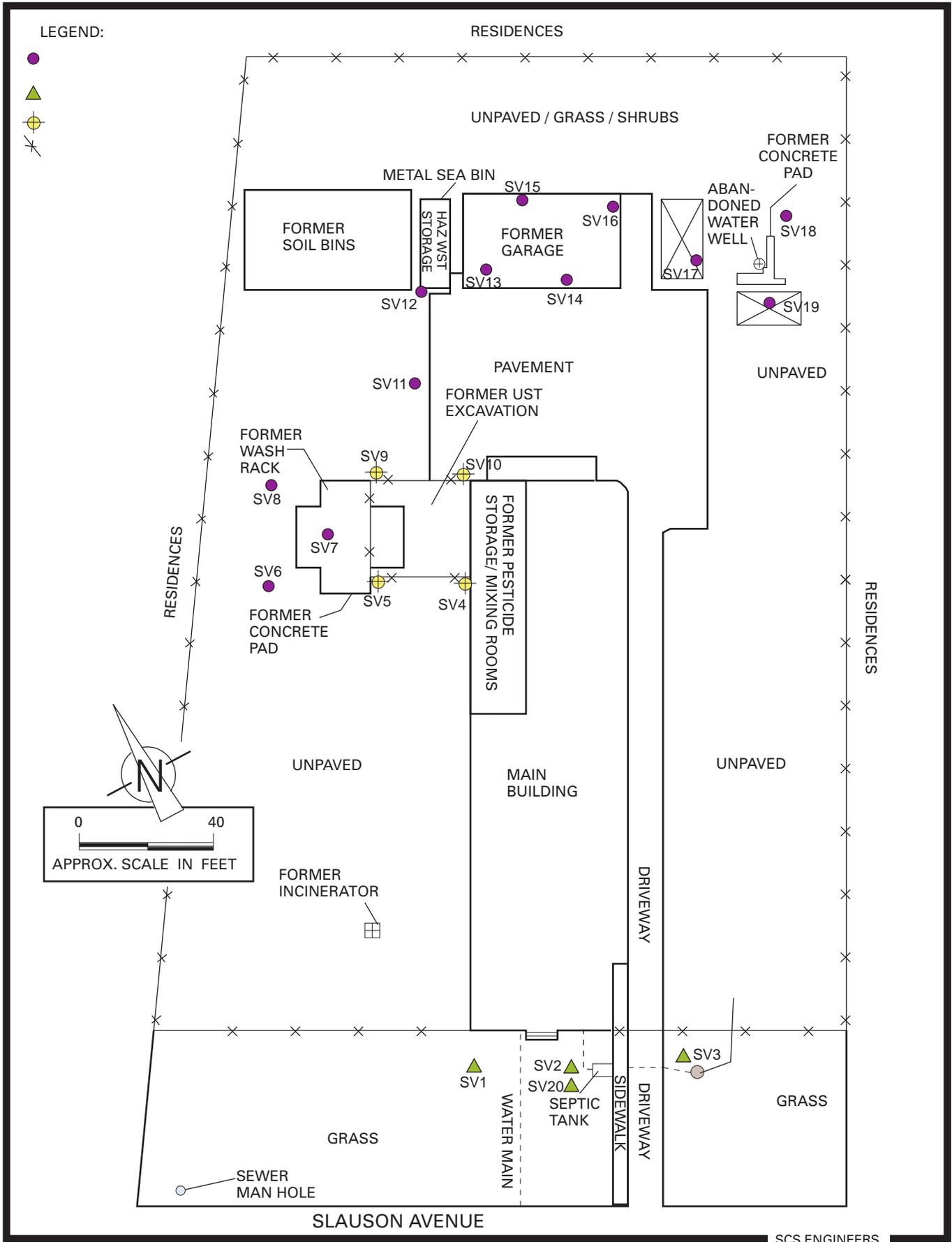


Figure 3. Map Showing Soil Vapor Survey Points, Los Angeles County Department of Agricultural Commissioner, Pico Rivera Facility, 8841 E. Slauson Ave., Pico Rivera, CA.

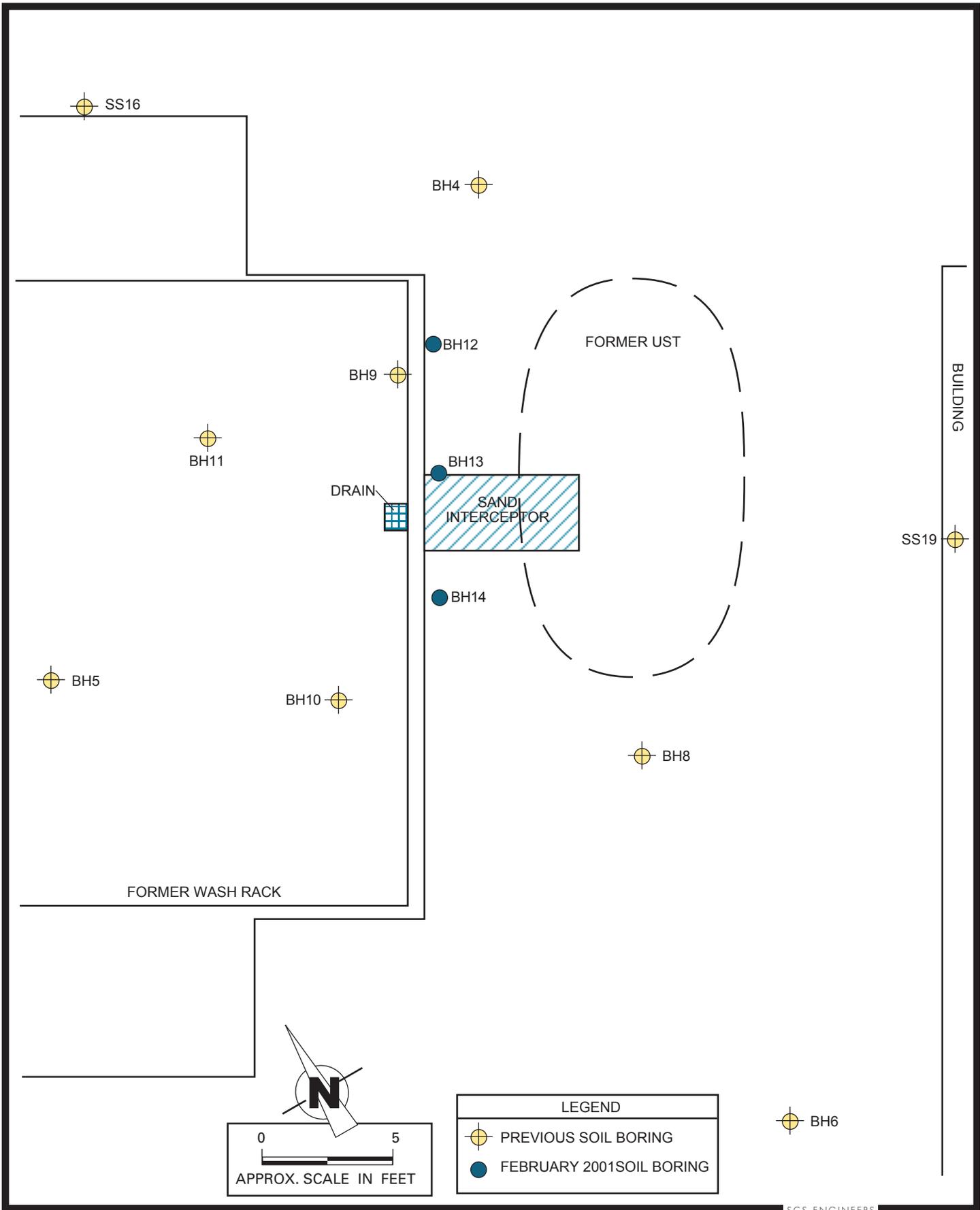


Figure 4. Map of Soil Borings in Vicinity of Former Wash Rack and Underground Storage Tank (UST), Los Angeles County Department of Agricultural Commissioner, Pico Rivera, CA.

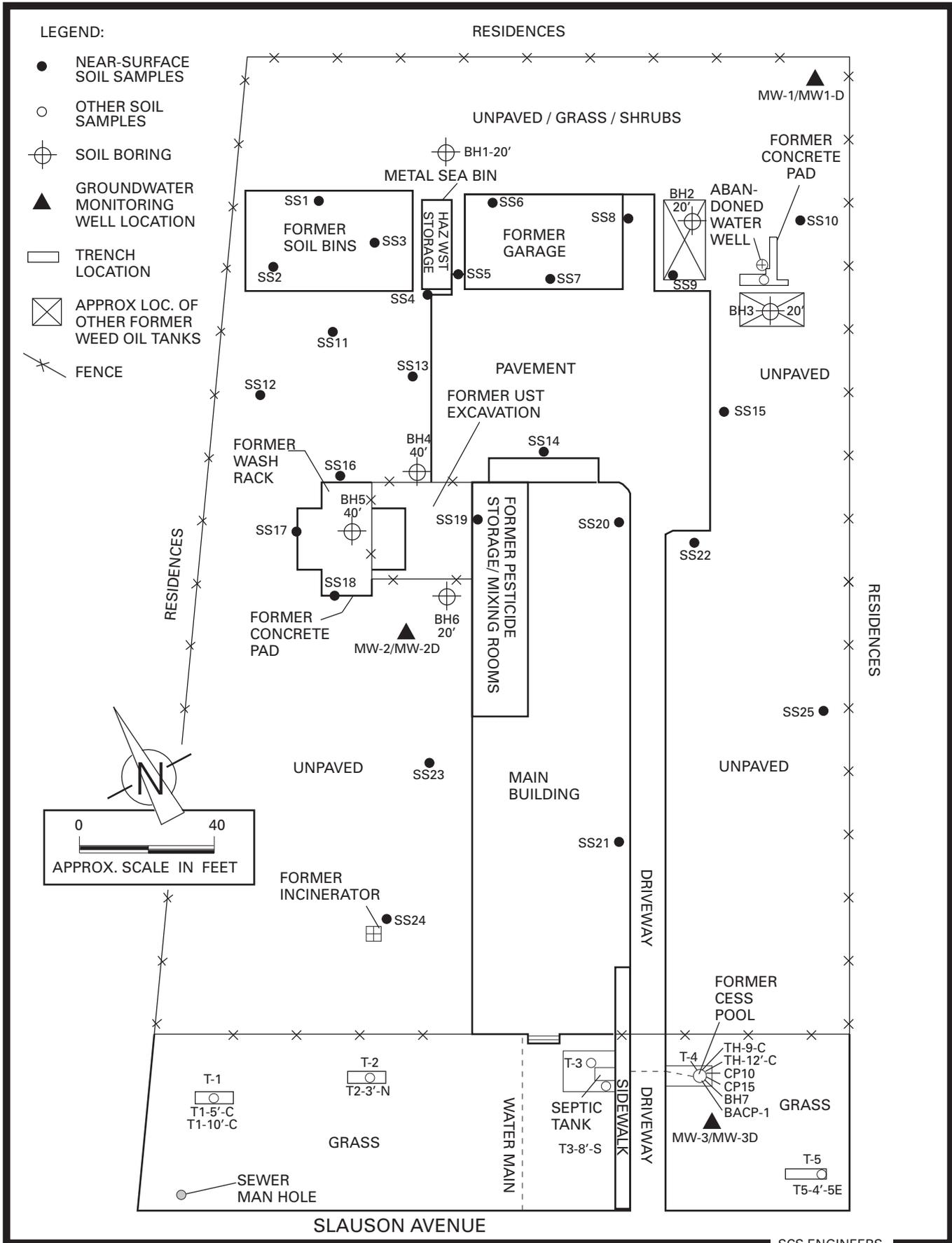
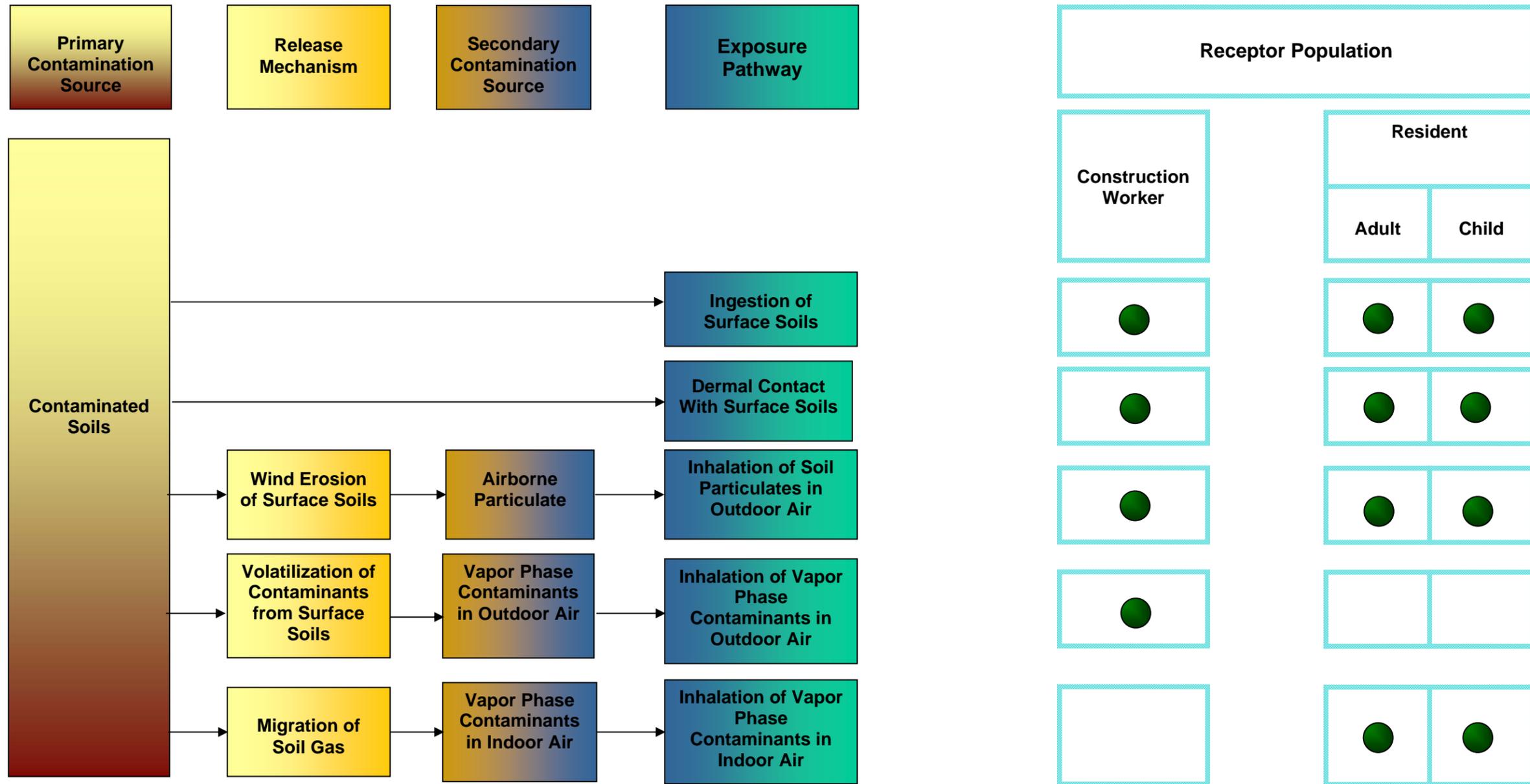


Figure 5. Map Showing Soil Sampling Locations and Groundwater Monitoring Well Locations, Los Angeles County Department of Agricultural Commissioner, Pico Rivera Facility, 8841 E. Slauson Ave., Pico Rivera, CA.

FIGURE 6
HEALTH RISK ASSESSMENT CONCEPTUAL SITE MODEL
LOS ANGELES COUNTY DEPARTMENT OF THE AGRICULTURAL COMMISSIONER FACILITY
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA



Notes:

● Exposure pathway complete and risks quantified.



APPENDIX A

**RAW ANALYTICAL DATA SUMMARY TABLES
(Collected from 0-10 feet bgs)**

**TABLE A-1.
 RAW ANALYTICAL DATA SUMMARY TABLE
 VOLATILE ORGANIC COMPOUNDS AND
 SEMI-VOLATILE ORGANIC COMPOUNDS
 LOS ANGELES COUNTY
 DEPARTMENT OF AGRICULTURAL COMMISSIONER /
 WEIGHTS AND MEASURES
 8841 EAST SLAUSON AVENUE
 PICO RIVERA, CALIFORNIA**

Sample Identification	Toluene	Benzo(a)pyrene	Di(2-ethylhexyl)phthalate
	(mg/kg)		
SS1-4-1			
SS2-4-1			
SS3-4-1			
SS4-4-1			
SS4-4-3			
SS5-4-1		<0.06	<1.5
SS6-4-1	0.015	<0.04	<1.5
SS7-4-1			
SS8-4-1		<0.05	<1.5
SS9-4-1		<0.05	<1.5
SS10-4-1		<0.05	<1.5
SS11-4-1			
SS12-4-1			
SS13-4-1			
SS14-4-1			
SS14-4-3			
SS15-4-1			
SS16-4-1			
SS17-4-1			
SS18-4-1			
SS19-4-1			
SS20-4-1			
SS21-4-1			
SS22-4-1			
SS23-4-1			
SS24-4-1			
SS25-4-1			
SS25-4-3			

**TABLE A-1.
 RAW ANALYTICAL DATA SUMMARY TABLE
 VOLATILE ORGANIC COMPOUNDS AND
 SEMI-VOLATILE ORGANIC COMPOUNDS
 LOS ANGELES COUNTY
 DEPARTMENT OF AGRICULTURAL COMMISSIONER /
 WEIGHTS AND MEASURES
 8841 EAST SLAUSON AVENUE
 PICO RIVERA, CALIFORNIA**

Sample Identification	Toluene	Benzo(a)pyrene	Di(2-ethylhexyl)phthalate
	(mg/kg)		
BH1-4-1			
BH1-4-5	<0.0025		
BH1-4-10			
BH2-4-1		0.05	1.5
BH2-4-5	<0.0025	<0.04	<1.5
BH2-4-10		<0.06	4.2
BH3-4-1		<0.06	
BH3-4-5	<0.0025	<0.05	3.2
BH3-4-10		<0.06	
BH4-4-10			
BH5-4-10			
BH5-4-15			
BH6-4-10			
T1-4-5C			
T1-4-10C			
T2-4-3N			
T3-4-4W			
T3-4-8W			
T5-4-5E			
ST-4-3			
ST-4-6			
BH8-6-5			
BH8-6-10			
BH9-6-5			
BH9-6-10			
BH10-6-5			
BH11-6-5			
BH12-7-5			

TABLE A-1.
RAW ANALYTICAL DATA SUMMARY TABLE
VOLATILE ORGANIC COMPOUNDS AND
SEMI-VOLATILE ORGANIC COMPOUNDS
LOS ANGELES COUNTY
DEPARTMENT OF AGRICULTURAL COMMISSIONER /
WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	Toluene	Benzo(a)pyrene	Di(2-ethylhexyl)phthalate
	(mg/kg)		
BH12-7-10			
BH13-7-5			
BH13-7-10			
BH14-7-5			
BH14-7-10			
MW1S-5-10			
SS4-5-3			
SS4-5-5			
SS5-5-3			
SS5-5-5			
SS8-5-3			
SS8-5-5			
SS9-5-3	<0.005		
SS9-5-5	<0.005		
SS14-5-3			
SS14-5-5			
SS18-5-3			
SS18-5-5			

Notes:

1. Only detected values shown.
2. < = Sample result reported less than the laboratory detection limit for that specific analyte.
3. mg/kg = milligrams per kilogram

TABLE A-2.
 RAW ANALYTICAL DATA SUMMARY TABLES - PESTICIDES - SOILS
 LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
 8841 EAST SLAUSON AVENUE
 PICO RIVERA, CALIFORNIA

Sample Identification	beta-BHC	delta-BHC	gamma-BHC	alpha-chlordane	gamma-chlordane	Chlorpyrifos	2,4-Dichlorophenoxy Acetate Acid	Dalapon	Dieldrin	Endrin (Total)	Fensulfothion	Heptachlor	Heptachlor Epoxide	Ronnel	Silvex	Strychnine	2,4,5-Trichlorophenoxy Acetate Acid
	(mg/kg)																
SS1-4-1							<0.2	0.32							<0.02	<5	
SS2-4-1							<0.2	0.33							<0.02	<5	
SS3-4-1							<0.2	0.25							<0.02		
SS4-4-1							<0.2	<0.1							<0.02	<5	
SS4-4-3							<0.2	<0.1							<0.02	<5	
SS5-4-1							<0.2	14							<0.02	<5	
SS6-4-1							<0.2	0.1							<0.02		
SS7-4-1							<0.2	0.12							0.21	<5	
SS8-4-1							<0.2	0.25							<0.02	<5	
SS9-4-1							<0.2	0.35							<0.02		
SS10-4-1							<0.2	0.23							<0.02		
SS11-4-1							<0.2	<0.1							<0.02		
SS12-4-1							<0.2	0.26							<0.02		
SS13-4-1							<0.2	0.3							<0.02	<5	
SS14-4-1							<0.2	0.13							<0.02	<5	
SS14-4-3							<0.2	0.13							<0.02	<5	
SS15-4-1							<0.2	0.19							<0.02	<5	
SS16-4-1							<0.2	0.21							<0.02		
SS17-4-1							<0.2	0.14							<0.02		
SS18-4-1							<0.2	0.21							<0.02		
SS19-4-1							0.55	0.23							<0.02	<5	
SS20-4-1							<0.2	0.12							<0.02	<5	
SS21-4-1							<0.2	<0.1							0.05	<5	
SS22-4-1							<0.2	0.21							<0.02		
SS23-4-1							<0.2	<0.1							<0.02	<5	
SS24-4-1							<0.2	0.17							<0.02		
SS25-4-1							<0.2	0.13							<0.02	<5	
SS25-4-3							<0.2	<0.1							<0.02	<5	
BH1-4-1							<0.2	<0.1							<0.02	<5	
BH1-4-5							<0.2	0.36							<0.02	<5	
BH1-4-10							<0.2	0.25							<0.02	<5	
BH2-4-1							<0.2	0.31							<0.02		
BH2-4-5							<0.2	<0.1							<0.02		
BH2-4-10							<0.2	<0.1							<0.02		
BH3-4-1							<0.2	0.19							<0.02		
BH3-4-5							<0.2	<0.1							<0.02		
BH3-4-10							<0.2	0.34							<0.02		
BH4-4-10							<0.2	<0.1							<0.02		
BH5-4-10							<0.2	0.36							<0.02		
BH5-4-15							<0.2	0.14							<0.02		
BH6-4-10							<0.2	0.37							<0.02		
T1-4-5C																	
T1-4-10C																	
T2-4-3N																	
T3-4-4W																	<5
T3-4-8W																	<5
T5-4-5E																	
ST-4-3							<0.2	0.3							<0.02		
ST-4-6							<0.2	0.17							<0.02		
BH8-6-5																	
BH8-6-10																	
BH9-6-5	<0.0017	<0.0017	<0.0017	0.018	0.013	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH9-6-10	<0.0017	<0.0017	<0.0017	0.0072	0.0063	<0.033	<0.080		0.0092	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020

TABLE A-2.
RAW ANALYTICAL DATA SUMMARY TABLES - PESTICIDES - SOILS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	beta-BHC	delta-BHC	gamma-BHC	alpha-chlordane	gamma-chlordane	Chlorpyrifos	2,4-Dichlorophenoxy Acetate Acid	Dalapon	Dieldrin	Endrin (Total)	Fensulfothion	Heptachlor	Heptachlor Epoxide	Ronnel	Silvex	Strychnine	2,4,5-Trichlorophenoxy Acetate Acid
	(mg/kg)																
BH10-6-5	<0.0017	<0.0017	<0.0017	0.024	0.024	<1.6	<0.080		0.0046	<0.0034	<1.6	0.002	0.0024	<1.6	<0.020		<0.020
BH11-6-5	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH12-7-5	<0.034	<0.034	<0.034	0.18	0.2				0.084	<0.068		<0.034	<0.034				
BH12-7-10	0.0064	0.0055	<0.0017	0.016	0.02				0.045	0.0034		0.0053	0.0039				
BH13-7-5	<0.017	<0.017	<0.017	0.098	0.11				<0.034	<0.034		<0.017	<0.017				
BH13-7-10	<0.0017	<0.0017	<0.0017	0.0038	0.0046				0.0054	<0.0034		<0.0017	<0.0017				
BH14-7-5	<0.17	<0.17	<0.17	0.68	0.75				1.0	<0.34		0.19	<0.17				
BH14-7-10	<0.017	<0.017	<0.017	0.092	0.11				<0.017	<0.034		<0.017	<0.017				
MW1S-5-10	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.05	<0.025	<0.1	<0.0033	<0.0033	<0.05	<0.0017	<0.0017	<0.05	<0.005		<0.005
SS4-5-3																	
SS4-5-5																	
SS5-5-3	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.05	<0.025	<0.1	<0.0033	<0.0033	<0.05	<0.0017	<0.0017	<0.05	<0.005		<0.005
SS5-5-5	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.05	<0.025	<0.1	<0.0033	<0.0033	<0.05	<0.0017	<0.0017	<0.05	<0.005		<0.005
SS8-5-3	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.05	<0.025	<0.1	<0.0033	<0.0033	<0.05	<0.0017	<0.0017	<0.05	<0.005		<0.005
SS8-5-5	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.05	<0.025	<0.1	<0.0033	<0.0033	<0.05	<0.0017	<0.0017	<0.05	<0.005		<0.005
SS9-5-3																	
SS9-5-5																	
SS14-5-3																	
SS14-5-5																	
SS18-5-3																	
SS18-5-5																	

Notes:

1. < = Sample result reported less than the laboratory detection limit for that specific analyte.
2. mg/kg = milligrams per kilogram

TABLE A-3.
POLYCHLORINATED DIOXINS/FURANS - SOIL ANALYTICAL RESULTS
AND CALCULATED TOTAL EQUIVALENT 2,3,7,8-TCDD
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

SAMPLE ID	2,3,7,8-TCDF		1,2,3,7,8-PeCDF		2,3,4,7,8-PeCDF		1,2,3,4,7,8-HxCDF	
	Original	TEQ	Original	TEQ	Original	TEQ	Original	TEQ
	pg/g	TEF = 0.1	pg/g	TEF = 0.05	pg/g	TEF = 0.5	pg/g	TEF = 0.1
SS1-4-0.5	<0.42	0.021	<0.59	0.01475	<0.52	0.13	<0.26	0.013
SS2-4-0.5	<0.60	0.03	<0.41	0.01025	<0.37	0.0925	<0.12	0.006
SS3-4-0.5	0.49	0.049	<0.78	0.0195	<0.69	0.1725	<0.28	0.014
SS16-4-0.5	1.2	0.12	<0.37	0.00925	<1.1	0.275	<1.1	0.055
SS17-4-0.5	<0.70	0.035	<2.2	0.055	<1.9	0.475	<3.4	0.17
SS18-4-0.5	<1.5	0.075	<1.2	0.03	<2.0	0.5	<1.7	0.085
BH4-4-10	<0.11	0.0055	<0.22	0.0055	<0.22	0.055	<0.057	0.00285
BH5-4-10	<0.23	0.0115	<0.56	0.014	<0.50	0.125	<0.050	0.0025
BH6-4-10	<0.10	0.005	<0.15	0.00375	<0.13	0.0325	<0.089	0.00445

TABLE A-3. (continued)
POLYCHLORINATED DIOXINS/FURANS - SOIL ANALYTICAL RESULTS
AND CALCULATED TOTAL EQUIVALENT 2,3,7,8-TCDD
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

SAMPLE ID	1,2,3,6,7,8-HxCDF		2,3,4,6,7,8-HxCDF		1,2,3,7,8,9-HxCDF		1,2,3,4,6,7,8-HpCDF	
	Original	TEQ	Original	TEQ	Original	TEQ	Original	TEQ
	pg/g	TEF = 0.1	pg/g	TEF = 0.1	pg/g	TEF = 0.1	pg/g	TEF = 0.01
SS1-4-0.5	<0.48	0.024	<0.40	0.02	<0.41	0.0205	<1.6	0.008
SS2-4-0.5	<0.14	0.007	<0.16	0.008	<0.19	0.0095	<0.27	0.00135
SS3-4-0.5	<0.63	0.0315	<0.47	0.0235	<0.095	0.00475	<1.6	0.008
SS16-4-0.5	<2.6	0.13	<1.6	0.08	<0.072	0.0036	20	0.2
SS17-4-0.5	<3.9	0.195	<2.6	0.13	<1.4	0.07	45	0.45
SS18-4-0.5	<2.8	0.14	<1.6	0.08	<1.6	0.08	20	0.2
BH4-4-10	<0.068	0.0034	<0.074	0.0037	<0.092	0.0046	<0.11	0.00055
BH5-4-10	<0.060	0.003	<0.067	0.00335	<0.078	0.0039	<0.14	0.0007
BH6-4-10	<0.11	0.0055	<0.12	0.006	<0.14	0.007	<0.10	0.0005

TABLE A-3. (continued)
POLYCHLORINATED DIOXINS/FURANS - SOIL ANALYTICAL RESULTS
AND CALCULATED TOTAL EQUIVALENT 2,3,7,8-TCDD
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

SAMPLE ID	1,2,3,4,7,8,9-HpCDF		OCDF		2,3,7,8-TCDD		1,2,3,7,8-PeCDD	
	Original	TEQ	Original	TEQ	Original	TEQ	Original	TEQ
	pg/g	TEF = 0.01	pg/g	TEF = 0.0001	pg/g	TEF = 1.0	pg/g	TEF = 1.0
SS1-4-0.5	<0.47	0.00235	<2.2	0.00011	<0.29	0.145	<0.29	0.145
SS2-4-0.5	<0.15	0.00075	<0.32	0.000016	<0.96	0.48	<0.33	0.165
SS3-4-0.5	<0.42	0.0021	<2.4	0.00012	<0.48	0.24	<0.42	0.21
SS16-4-0.5	<1.6	0.008	53	0.0053	<0.33	0.165	<0.59	0.295
SS17-4-0.5	5.5	0.055	94	0.0094	<0.70	0.35	<1.5	0.75
SS18-4-0.5	<2.8	0.014	52	0.0052	<0.64	0.32	<1.1	0.55
BH4-4-10	<0.11	0.00055	<0.24	0.000012	<0.44	0.22	<0.47	0.235
BH5-4-10	<0.19	0.00095	<0.36	0.000018	<0.45	0.225	<0.31	0.155
BH6-4-10	<0.14	0.0007	<0.28	0.000014	<0.19	0.095	<0.33	0.165

TABLE A-3. (continued)
POLYCHLORINATED DIOXINS/FURANS - SOIL ANALYTICAL RESULTS
AND CALCULATED TOTAL EQUIVALENT 2,3,7,8-TCDD
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

SAMPLE ID	1,2,3,4,7,8-HxCDD		1,2,3,6,7,8-HxCDD		1,2,3,7,8,9-HxCDD	
	Original	TEQ	Original	TEQ	Original	TEQ
	pg/g	TEF = 0.1	pg/g	TEF = 0.1	pg/g	TEF = 0.1
SS1-4-0.5	<0.17	0.0085	<0.21	0.0105	<0.35	0.0175
SS2-4-0.5	<0.36	0.018	<0.28	0.014	<0.31	0.0155
SS3-4-0.5	<0.29	0.0145	<0.23	0.0115	<0.36	0.018
SS16-4-0.5	<1.2	0.06	<3.6	0.18	<3.0	0.15
SS17-4-0.5	<2.7	0.135	5.3	0.53	<4.3	0.215
SS18-4-0.5	<2.2	0.11	6.4	0.64	5.4	0.54
BH4-4-10	<0.32	0.016	<0.25	0.0125	<0.28	0.014
BH5-4-10	<0.31	0.0155	<0.24	0.012	<0.27	0.0135
BH6-4-10	<0.19	0.0095	<0.17	0.0085	<0.31	0.0155

TABLE A-3. (continued)
POLYCHLORINATED DIOXINS/FURANS - SOIL ANALYTICAL RESULTS
AND CALCULATED TOTAL EQUIVALENT 2,3,7,8-TCDD
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

SAMPLE ID	1,2,3,4,6,7,8-HpCDD		Total OCDD		Total Equivalent 2,3,7,8-TCDD pg/g
	Original pg/g	TEQ TEF = 0.01	Original pg/g	TEQ TEF = 0.0001	
	SS1-4-0.5	<3.7	0.0185	47	0.0047
SS2-4-0.5	<0.31	0.00155	2.8	0.00028	0.861046
SS3-4-0.5	<2.4	0.012	25	0.0025	0.84147
SS16-4-0.5	79	0.79	1000	0.1	2.82615
SS17-4-0.5	140	1.4	1300	0.13	5.6044
SS18-4-0.5	120	1.2	1100	0.11	4.8792
BH4-4-10	<0.47	0.00235	<2.6	0.00013	0.582192
BH5-4-10	<0.43	0.00215	<8.7	0.000435	0.589203
BH6-4-10	<0.25	0.00125	<4.4	0.00022	0.360884

Notes:

1. This table presents original laboratory results for polychlorinated dioxins and furan and congeners converted to the Total Equivalent 2,3,7,8-TCDD using a Total Equivalency Factor (TEQ). Congeners that have been converted to an equivalent concentration of TCDD with chlorines in the 2,3,7,8 positions. This was calculated by multiplying reported concentrations by a Toxicity Equivalent Factor (TEF), as published in 2003 by the California Department of Toxic Substances Control. A value of one-half the detection limit was used for non-detects.
2. Dioxins and DBFs = Polychlorinated benzodioxins and Dibenzofurans (EPA Manual SW486, Method 8290)
3. HpCDD = Heptachlorodibenzo-paradoxin, TEF = 0.01 for HpCDD with chlorines in the 2,3,7,8 positions, otherwise TEF = 0.

TABLE A-3. (continued)
POLYCHLORINATED DIOXINS/FURANS - SOIL ANALYTICAL RESULTS
AND CALCULATED TOTAL EQUIVALENT 2,3,7,8-TCDD
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

4. HpCDF = Heptachlorodibenzofuran. TEF = 0.01 for HpCDF with chlorines in the 2,3,7,8 positions, otherwise TEF = 0.
5. HxCDD = Hexachlorodibenzo-para-dioxin. TEF = 0.1 for HxCDD with chlorines in the 2,3,7,8 positions, otherwise TEF = 0.
6. HxCDF = Hexachlorodibenzofuran. TEF = 0.1 for HxCDF with chlorines in the 2,3,7,8 positions, otherwise TEF = 0.
7. OCDD = Octachlorodibenzo-para-dioxin. TEF = 0.0001 for all OCDD.
8. OCDF = Octachlorodibenzofuran. TEF = 0.0001 for all OCDF.
9. PeCDD = Pentachlorodibenzo-para-dioxin = 1.0 for PeCDD with chlorines in the 2,3,7,8 positions, otherwise TEF = 0.
10. PeCDF = Pentachlorodibenzofuran. TEF = 0.5 for PeCDF with chlorines in the 2,3,7,8 positions, otherwise TEF = 0. TEF = 0.05 for PeCDF with chlorines in the 1,2,3,7,8 positions, otherwise TEF = 0.
11. TCDD = Tetrachlorodibenzo-para-dioxin. TEF = 1.0 for TCDD with chlorines in the 2,3,7,8 positions, otherwise TEF = 0.
12. TCDF = Tetrachlorodibenzofuran. TEF = 0.1 for TCDF with chlorines in the 2,3,7,8 positions, otherwise TEF = 0.
13. If the concentration of a congener was below a detection limit, an inferred concentrations was calculated to be one-half the detection limit.
14. DP-290-5.6 = Direct-Push Probe No. 290, collected at 5.6 feet below ground surface.
15. pg/g = picograms per gram (parts per trillion).

TABLE A-4.
RAW ANALYTICAL DATA SUMMARY TABLE - METALS - SOILS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	Arsenic	Cadmium	Copper	Lead	Mercury	Thallium	Zinc
	(mg/kg)						
SS1-4-1							
SS2-4-1							
SS3-4-1	<5	<0.25	19.6	7.7	<0.06	<5	44.8
SS4-4-1	<5	<0.25	19	36.3	<0.06	<5	134
SS5-4-1							
SS6-4-1	<5	<0.25	19	18.1	<0.06	<5	66.5
SS7-4-1							
SS8-4-1							
SS9-4-1	<5	1.6	19.9	213	<0.06	<5	100
SS10-4-1	<5	<0.25	17.3	37.4	<0.06	<5	62.4
SS11-4-1							
SS12-4-1							
SS13-4-1	12.1	<0.25	29.7	7.8	<0.06	<5	51.9
SS14-4-1	<5	<0.25	13	65.9	<0.06	<5	36.5
SS15-4-1							
SS16-4-1	<5	<0.25	22.8	50.5	<0.06	<5	66.6
SS17-4-1	<5	<0.25	17	18.5	<0.06	<5	45.4
SS18-4-1	<5	0.54	27.7	61.8	0.07	<5	74.8
SS19-4-1							
SS20-4-1							
SS21-4-1							
SS22-4-1							
SS23-4-1							
SS24-4-1	<5	<0.25	14.3	48.6	<0.06	<5	52.6
SS25-4-1	<5	<0.25	17.2	48.4	<0.06	<5	66.3
BH1-4-1	<5	<0.25	13.5	<2.5	0.22	<5	24.6
BH2-4-1	<5	<0.25	10.5	<2.5	<0.06	<5	19.4
BH3-4-1	<5	<0.25	12.3	<2.5	<0.06	<5	26
SS4-4-3	<5	<0.25	13.7	16.3	0.08	<5	41.8
SS14-4-3	<5	<0.25	9.7	<2.5	0.07	<5	23.6
SS25-4-3	<5	<0.25	13.7	4.2	<0.06	<5	34
T2-4-3N	6.1	<2.5	19.2	15.9	<1	<5	37.4
ST-4-3							
SS4-5-3							50.7
SS4-5-3(D)							45.5
SS5-5-3							
SS8-5-3							
SS9-5-3		<0.50		<10.0			
SS14-5-3				<10.0			
SS18-5-3		<0.50		<10.0			
T3-4-4W	<5	<2.5	15.1	17.1	<1	<5	42
BH1-4-5	<5	<0.25	11.1	<2.5	<0.06	<5	18.9

TABLE A-4.
RAW ANALYTICAL DATA SUMMARY TABLE - METALS - SOILS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	Arsenic	Cadmium	Copper	Lead	Mercury	Thallium	Zinc
	(mg/kg)						
BH2-4-5	<5	<0.25	12.9	<2.5	<0.06	<5	23.5
BH3-4-5	<5	<0.25	10.6	<2.5	<0.06	<5	19.4
T1-4-5C	<5	<2.5	18.3	14.2	<1	<5	37.8
T5-4-5E	<5	<2.5	9	12.2	<1	<5	11.7
SS4-5-5							34.3
SS5-5-5							
SS8-5-5							
SS9-5-5		<0.50		<10.0			
SS14-5-5				<10.0			
SS18-5-5		<0.50		<10.0			
ST-4-6							
T3-4-8W	<5	<2.5	10	10	<1	<5	16.6
BH1-4-10	<5	<0.25	9.8	<2.5	<0.06	<5	19.7
BH2-4-10	<5	<0.25	11.9	<2.5	<0.06	<5	23.8
BH3-4-10	<5	<0.25	12.4	<2.5	<0.06	<5	19.4
BH4-4-10	5.9	<0.25	10.1	<2.5	<0.06	<5	24.7
BH5-4-10	5.3	<0.25	8.6	<2.5	<0.06	<5	23.7
BH6-4-10	<5	<0.25	8.3	<2.5	<0.06	<5	18.7
T1-4-10C	<5	<2.5	11.3	15.1	<1	<5	26
MW1S-5-10	<10.0	<0.50	10.9	<10.0	<0.040	<50.0	21.4
BH-21-1	3.65						
BH-21-2.5	4.1						
BH-21-5	2.15						
BH-21-10	3.6						
BH-22-1	4.65						
BH-22-2.5	3.45						
BH-22-5	5.9						
BH-22-10	3.3						
BH-23-1	6						
BH-23-2.5	7.3						
BH-23-5	3.3						
BH-23-10	3.75						
BH-24-1	7.45						
BH-24-2.5	6.9						
BH-24-5	7.35						

Notes:

1. < = Sample result reported less than the laboratory detection limit for that specific analyte.
2. mg/kg = milligrams per kilogram

TABLE A-5
RAW ANALYTICAL DATA SUMMARY TABLE - PESTICIDES
TOTAL DDT - SOIL
LOS ANGELES COUNTY
DEPARTMENT OF AGRICULTURAL COMMISSIONER /
WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	4,4-DDD	4,4-DDE	4,4-DDT	Total DDT
	(mg/kg)			
SS1-4-1	<0.005	<0.005	<0.005	0.0075
SS2-4-1	<0.005	<0.005	<0.005	0.0075
SS3-4-1	<0.005	<0.005	<0.005	0.0075
SS4-4-1	<0.005	<0.005	<0.005	0.0075
SS4-4-3	<0.005	<0.005	<0.005	0.0075
SS5-4-1	<0.005	<0.005	<0.025	0.0175
SS6-4-1	<0.005	<0.005	<0.025	0.0175
SS7-4-1	<0.005	0.081	<0.05	0.1085
SS8-4-1	0.82	0.27	1.5	2.59
SS9-4-1	<0.005	<0.005	0.0073	0.0123
SS10-4-1	<0.005	<0.005	<0.005	0.0075
SS11-4-1	<0.005	<0.005	<0.005	0.0075
SS12-4-1	<0.005	<0.005	0.0064	0.0114
SS13-4-1	<0.005	<0.005	<0.005	0.0075
SS14-4-1	<0.005	<0.005	<0.005	0.0075
SS14-4-3	<0.005	<0.005	<0.005	0.0075
SS15-4-1	<0.005	<0.005	<0.005	0.0075
SS16-4-1	<0.005	<0.005	0.0074	0.0124
SS17-4-1	<0.005	<0.005	<0.005	0.0075
SS18-4-1	<0.025	<0.025	0.037	0.062
SS19-4-1	<0.005	<0.005	<0.005	0.0075
SS20-4-1	<0.005	<0.005	0.007	0.012
SS21-4-1	<0.005	<0.005	0.053	0.058
SS22-4-1	<0.005	<0.005	<0.005	0.0075
SS23-4-1	<0.005	<0.005	<0.005	0.0075
SS24-4-1	0.0062	<0.005	0.021	0.0297
SS25-4-1	<0.005	<0.005	<0.005	0.0075
SS25-4-3	<0.005	<0.005	<0.005	0.0075
BH1-4-1	<0.005	<0.005	0.027	0.032
BH1-4-5	<0.005	<0.005	<0.005	0.0075
BH1-4-10	<0.005	<0.005	<0.005	0.0075

TABLE A-5 (continued)
RAW ANALYTICAL DATA SUMMARY TABLE - PESTICIDES
TOTAL DDT - SOIL
LOS ANGELES COUNTY
DEPARTMENT OF AGRICULTURAL COMMISSIONER /
WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA

Sample Identification	4,4-DDD	4,4-DDE	4,4-DDT	Total DDT
	(mg/kg)			
T1-4-5C				
T1-4-10C				
T2-4-3N				
T3-4-4W				
T3-4-8W				
T5-4-5E				
ST-4-3	<0.005	<0.005	<0.005	0.0075
ST-4-6	<0.005	<0.005	<0.005	0.0075
BH8-6-5				
BH8-6-10				
BH9-6-5	<0.0034	0.0046	0.015	0.0213
BH9-6-10	<0.0034	<0.0034	<0.0034	0.0051
BH10-6-5	<0.013	0.015	0.029	0.0505
BH11-6-5	<0.0034	<0.0034	<0.0034	0.0051
BH12-7-5	<0.068	0.12	0.62	0.774
BH12-7-10	<0.034	<0.0034	<0.0034	0.0204
BH13-7-5	<0.034	<0.034	<0.034	0.051
BH13-7-10	<0.0034	<0.0034	0.0049	0.0083
BH14-7-5	<0.34	<0.34	0.77	1.11
BH14-7-10	<0.034	<0.034	0.041	0.075
MW1S-5-10	<0.0033	<0.0033	<0.0033	0.00495
SS4-5-3				
SS4-5-5				
SS5-5-3	<0.0033	<0.0033	<0.0033	0.00495
SS5-5-5	<0.0033	<0.0033	<0.0033	0.00495
SS8-5-3	<0.0033	<0.0033	<0.0033	0.00495
SS8-5-5	<0.0033	<0.0033	<0.0033	0.00495
SS9-5-3				
SS9-5-5				

TABLE A-5 (continued)
RAW ANALYTICAL DATA SUMMARY TABLE - PESTICIDES
TOTAL DDT - SOIL
LOS ANGELES COUNTY
DEPARTMENT OF AGRICULTURAL COMMISSIONER /
WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA

Sample Identification	4,4-DDD	4,4-DDE	4,4-DDT	Total DDT
	(mg/kg)			
SS14-5-3				
SS14-5-5				
SS18-5-3				
SS18-5-5				

Notes:

1. < = Sample result reported less than the laboratory detection limit for that specific analyte.
2. To determine "Total DDT" concentration, a concentration equal one-half the detection limit was used for non-detects.
Total DDT concentration is sum of concentrations of 4,4-DDD, 4,4-DDE, and 4,4-DDT.
3. mg/kg = milligrams per kilogram

**TABLE A-6.
CUMULATIVE GROUNDWATER MONITORING RESULTS
PESTICIDES< HERBICIDES, VOLATILE ORGANIC COMPOUNDS, METALS AND STRYCHNINE
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

Sample Number	Date Collected	Pesticides/Herbicides				Volatile Organics	Metals*													Strychnine
		EPA 8081	EPA 8141	EPA 8151 ^a		EPA 8260	As	Ba	Cd	Cr	Co	Cu	Pb	Hg	Ni	Se	Tl	V	Zn	
		All Constituents µg/l	All Constituents µg/l	Dicamba µg/l	Dinoseb µg/l	All Constituents µg/l	mg/l													
MW-1	2/14/1997	ND	ND	0.51	<0.25	MEK = 13 ^b	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	5/14/1997	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	10/29/1997	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	0.034	<0.04
	1/6/98 ^c	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	4/29/1999	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	0.042	NA
	3/24/2000	ND	ND	NA	NA	NA	0.012	--	<0.0050	--	NA	<0.025	0.0056	NA	NA	NA	<0.010	NA	0.034	NA
	3/24/00**	NA	ND	NA	NA	NA	NA	--	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/26/2000	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
	8/16/2000	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
	5/21/2001	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
4/28/2003	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA	
MW-1D	8/7/2003	ND	ND	<2.0	<0.60	NA	<0.01	0.15	<0.002	0.0082	<0.01	<0.01	0.0031	<0.002	<0.01	<0.005	<0.01	<0.01	0.021	NA
	3/25/2004	ND	ND	<0.24	<0.24	NA	0.026	0.45	<0.005	0.032	0.011	0.051	0.0096	<0.002	0.02	0.0053	<0.005	0.042	0.12	NA
	5/4/2004	ND	ND	<0.25	<0.25	NA	<0.005	0.11	<0.005	<0.005	<0.01	<0.01	<0.005	<0.002	<0.01	<0.005	<0.005	<0.01	<0.02	NA
	1/20/2005	ND	ND	<1.0	<1.0	NA	<0.005	0.063	<0.005	<0.005	<0.01	<0.01	<0.005	<0.002	<0.01	<0.005	<0.005	<0.01	<0.02	NA
MW-2	2/14/1997	ND	ND	<0.10	1.9	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	5/14/1997	ND	ND	<0.10	12	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	10/29/1997	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	1/6/98 ^c	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	4/29/1999	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
	3/24/2000	ND	ND	<2.0	<0.60	NA	0.043	--	<0.0050	--	NA	0.093	0.039	NA	NA	NA	<0.010	NA	0.18	NA
	3/24/00**	NA	ND	<2.0	<0.60	NA	NA	--	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/26/2000	ND	ND	<2.0	<0.60	NA	NA	--	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/16/2000	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
	5/21/2001	ND	ND	<2.0	<0.60	NA	0.012	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
4/28/2003	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA	
MW-2D	8/7/2003	ND	ND	<2.0	<0.60	NA	<0.01	0.12	<0.002	<0.005	<0.01	<0.01	<0.003	<0.002	<0.01	<0.005	<0.01	<0.01	<0.01	NA
	3/25/2004	ND	ND	<0.24	<0.24	NA	0.018	0.47	<0.005	0.021	<0.01	0.35	0.0066	<0.002	0.013	0.0058	<0.005	0.027	0.062	NA
	5/4/2004	ND	ND	<0.25	<0.25	NA	<0.005	0.079	<0.005	<0.005	<0.01	<0.01	<0.005	<0.002	<0.01	<0.005	<0.005	<0.01	<0.02	NA
	1/20/2005	ND	ND	<1.0	<1.0	NA	<0.005	0.056	<0.005	<0.005	<0.01	<0.01	<0.005	<0.002	<0.01	<0.005	<0.005	<0.01	<0.02	NA
MW-3	2/14/1997	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	5/14/1997	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	10/29/1997	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	0.022	<0.04
	1/6/98 ^c	ND	ND	<0.10	<0.25	ND	<0.030	--	<0.0050	--	NA	<0.025	<0.10	<0.00020	NA	NA	<2.0	NA	<0.020	<0.04
	4/29/1999	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
	3/24/2000	ND	ND	<2.0	<0.60	NA	0.028	--	<0.0050	--	NA	0.055	0.014	NA	NA	NA	<0.010	NA	0.12	NA
	5/26/2000	ND	ND	<2.0	<0.60	NA	NA	--	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/16/2000	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
	5/21/2001	ND	ND	<2.0	<0.60	NA	0.012	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	0.025	NA
	4/28/2003	ND	ND	<2.0	<0.60	NA	<0.010	--	<0.0050	--	NA	<0.025	<0.0050	<0.00020	NA	NA	<0.010	NA	<0.020	NA
MW-3D	8/7/2003	ND	ND	<2.0	<0.60	NA	<0.01	0.13	<0.002	0.0088	<0.01	<0.01	<0.003	<0.002	<0.01	<0.005	<0.01	<0.01	0.11	NA
	3/25/2004	ND	ND	<0.24	<0.24	NA	0.014	0.28	<0.005	0.019	<0.01	0.036	0.0059	<0.002	0.013	0.0056	<0.005	0.025	0.25	NA
	5/4/2004	ND	ND	<0.24	<0.24	NA	<0.005	0.066	<0.005	<0.005	<0.01	<0.01	<0.005	<0.002	<0.01	<0.005	<0.005	<0.01	0.028	NA
	1/20/2005	ND	ND	<0.98	<0.98	NA	<0.005	0.049	<0.005	<0.005	<0.01	<0.01	<0.005	<0.002	<0.01	<0.005	<0.005	<0.01	<0.02	NA
MCL	-	-	-	7.0	-	0.050	1.0	0.005	0.05	-	1.0	0.015	0.002	0.1	0.050	0.002	-	5.0	-	

ND = Not Detected
MEK = Methyl Ethyl Ketone
a = All other EPA 8150 or 8151 constituents ND

* = Only metals detected are listed
** = Duplicate sample analysis.
b = All other EPA 8260 constituents ND

NA = Not Analyzed
MCL - maximum contaminant level
c = EPA 8140 and 8150 exceeded holding times - re-sampled 1/23/98

Exceedence of the MCL

APPENDIX B

RAW ANALYTICAL DATA SUMMARY TABLES
(Collected from below 10 feet bgs)

TABLE B-1.
RAW ANALYTICAL DATA SUMMARY TABLES - PESTICIDES - SOILS (BELOW 10 FEET BGS)
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	beta-BHC	delta-BHC	gamma-	alpha-Chlordane	Chlorpyrifos	2,4-Dichlorophenoxy Acetate Acid	Dalapon	Dieldrin	Endrin (Total)	Fensulfothion	Heptachlor	Heptachlor epoxide	Ronnel	Silvex	Strychnine	2,4,5-Trichlorophenoxy Acetate Acid
	(mg/kg)															
BH1-4-15						<0.2	<0.1							<0.02		
BH1-4-20						<0.2	0.57							<0.02		
BH4-4-15						<0.2	<0.1							<0.02		
BH4-4-20						<0.2	<0.1							<0.02		
BH4-4-40																
BH5-4-15						<0.2	0.14							<0.02		
BH5-4-20						<0.2	<0.1							<0.02		
BH5-4-22						<0.2	1.1							<0.02		
BH6-4-15						<0.2	<0.1							<0.02		
BH6-4-20						<0.2	<0.1							<0.02		
BH8-6-15	<0.085	<0.085	<0.085	0.19	<0.033	<0.080		0.39	<0.17	<0.033	<0.085	<0.085	<0.033	<0.020		<0.020
BH8-6-20	<0.0017	<0.0017	<0.0017	0.002	<0.033	<0.080		0.016	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH8-6-25	<0.0017	<0.0017	<0.0017	0.002	<0.033	<0.080		0.0052	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH8-6-30	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH8-6-35	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH8-6-40	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH8-6-45	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH8-6-47	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH8-6-48	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH9-6-15	<8.5	<8.5	<8.5	<8.5	0.13	1.6		<17	<17	0.071	<8.5	<8.5	0.097	1.1		1.8
BH9-6-20	<0.017	<0.017	<0.017	0.05	<0.033	<0.080		0.058	<0.034	<0.033	<0.017	<0.017	<0.033	<0.020		<0.020
BH9-6-25	<0.0017	<0.0017	0.0023	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	0.0072	<0.033	<0.020		<0.020
BH9-6-30	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH9-6-35	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH9-6-40	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH9-6-45	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH9-6-47	<0.0017	<0.0017	<0.0017	<0.0017	<0.033	<0.080		<0.0034	<0.0034	<0.033	<0.0017	<0.0017	<0.033	<0.020		<0.020
BH12-7-15	<0.0034	<0.0034	<0.0034	0.016				0.042	<0.0068		<0.0034	<0.0034				
BH12-7-20	0.0019	<0.0017	<0.0017	0.015				0.017	<0.0034		<0.0017	0.0017				
BH12-7-25	<0.0017	<0.0017	<0.0017	<0.0017				<0.0034	<0.0034		<0.0017	<0.0017				
BH13-7-15	<8.5	<8.5	30.0	14.0				<17	<17		<8.5	<8.5				
BH13-7-20	<0.017	<0.017	<0.0017	0.064				0.079	<0.034		<0.017	<0.017				
BH13-7-25	<0.017	<0.017	0.038	0.044				0.059	<0.034		0.017	<0.017				
BH14-7-15	<0.0085	<0.0085	<0.0085	0.041				0.12	<0.017		<0.0085	<0.0085				
BH14-7-20	<0.017	<0.017	<0.017	0.043				0.058	<0.034		<0.017	<0.017				
BH14-7-25	<0.0017	<0.0017	<0.0017	<0.0017				<0.0034	<0.0034		<0.0017	<0.0017				

Notes:
1. < = Sample result reported less than the laboratory detection limit for that specific analyte.
2. mg/kg = milligrams per kilogram

TABLE B-2
RAW ANALYTICAL DATA SUMMARY TABLE - PESTICIDES
TOTAL DDT - SOIL (BELOW 10 FEET BGS)
LOS ANGELES COUNTY
DEPARTMENT OF AGRICULTURAL COMMISSIONER /
WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	4,4'-DDT	4,4'-DDE	4,4'-DDD	Total DDT
	(mg/kg)			
BH1-4-15	<0.005	<0.005	<0.005	
BH1-4-20	<0.005	<0.005	<0.005	
BH2-4-15	<0.005	<0.005	<0.005	
BH2-4-20	<0.005	<0.005	<0.005	
BH3-4-15	<0.005	<0.005	<0.005	
BH3-4-20	<0.005	<0.005	<0.005	
BH4-4-15	<0.005	<0.005	<0.005	
BH4-4-20	<0.005	<0.005	<0.005	
BH4-4-40	<0.005	<0.005	<0.005	
BH5-4-15	<0.005	<0.005	<0.005	
BH5-4-20	0.033	<0.005	<0.025	
BH5-4-22	0.029	<0.005	<0.025	
BH5-4-30	<0.025	<0.005	<0.025	
BH5-4-40	<0.005	<0.005	<0.005	
BH6-4-15	<0.005	<0.005	<0.005	
BH6-4-20	0.008	<0.005	<0.005	
BH6-4-30	<0.005	<0.005	<0.005	
BH6-4-40	<0.005	<0.005	<0.005	
BH8-6-15	<0.005	<0.005	<0.005	
BH8-6-20	0.0078	<0.0034		
BH8-6-25	<0.0034	<0.0034		
BH8-6-30	<0.0034	<0.0034		
BH8-6-35	<0.0034	<0.0034		
BH8-6-40	<0.0034	<0.0034		
BH8-6-45	<0.0034	<0.0034		
BH8-6-47	0.012	<0.0034		
BH8-6-48	<0.0034	<0.0034		
BH9-6-15	97	<17		

TABLE B-2 (continued)
RAW ANALYTICAL DATA SUMMARY TABLE - PESTICIDES
TOTAL DDT - SOIL (BELOW 10 FEET BGS)
LOS ANGELES COUNTY
DEPARTMENT OF AGRICULTURAL COMMISSIONER /
WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	4,4'-DDT	4,4'-DDE	4,4'-DDD	Total DDT
	(mg/kg)			
BH9-6-20	0.20	<0.034		
BH9-6-25	<0.0034	<0.0034		
BH9-6-30	<0.0034	<0.0034		
BH9-6-35	<0.0034	<0.0034		
BH9-6-40	<0.0034	<0.0034		
BH9-6-45	<0.0034	<0.0034		
BH9-6-47	<0.0034	<0.0034		
BH12-7-15	0.011	<0.0068		
BH12-7-20	0.032	0.0071		
BH12-7-25	<0.0034	<0.0034		
BH13-7-15	110	<17		
BH13-7-20	0.21	<0.034		
BH13-7-25	0.55	<0.034		
BH14-7-15	<0.017	<0.017		
BH14-7-20	<0.034	<0.034		
BH14-7-25	<0.0034	<0.0034		

Notes:

1. < = Sample result reported less than the laboratory detection limit for that specific analyte.
2. To determine "Total DDT" concentration, a concentration equal one-half the detection limit was used for non-detects.
Total DDT concentration is sum of concentrations of 4,4-DDD, 4,4-DDE, and 4,4-DDT.
3. mg/kg = milligrams per kilogram

TABLE B-3.
RAW ANALYTICAL DATA SUMMARY TABLE - METALS - SOILS (BELOW 10 FEET BGS)
OS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURE
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample Identification	Arsenic	Cadmium	Copper	Lead	Mercury	Thallium	Zinc
	(mg/kg)						
BH1-4-15							
BH1-4-20							
BH2-4-15							
BH2-4-20							
BH3-4-15							
BH3-4-20							
BH4-4-15							
BH4-4-20							
BH4-4-30							
BH4-4-40							
BH5-4-15							
BH5-4-20							
BH5-4-22							
BH5-4-30							
BH5-4-40							
BH6-4-15							
BH6-4-20							
BH6-4-30							
BH6-4-40							
MW1S-5-15	<10.0	<0.50	16.3	<10.0	<0.040	<50.0	27.2
MW1S-5-20	<10.0	<0.50	6.2	<10.0	<0.040	<50.0	15.5
MW1S-5-20(D)	<10.0	<0.50	7.6	<10.0	<0.040	<50.0	16.1
MW2S-5-15	<10.0	<0.50	13.9	<10.0	<0.040	<50.0	25.8
MW2S-5-20	<10.0	<0.50	18.7	<10.0	0.040	<50.0	25.0
MW2S-5-20(D)	<10.0	<0.50	7.6	<10.0	<0.040	<50.0	15.2
MW2S-5-30							
MW2S-5-40							
MW3S-5-15	20.1	<0.50	6.4	<10.0		<50.0	30.1
MW3S-5-20	10.9	<0.50	11.4	<10.0		<50.0	33.9
BACP-1(20)	21.1	<0.50	8.6	<10.0	<0.04	<50	76.4
BH7-5-25	10.3	<0.50	11.1	<10.0		<50	39.1
BH7-5-30	10.2	<0.50	8.1	<10.0		<50	20.1
BH8-6-15	4.1	<0.5	9.7	7.9		4.0	45.0
BH8-6-20	1.2	<0.5	4.9	1.5		<1.0	16.0
BH8-6-25	6.7	<0.5	15.9	3.5		<1.0	36.8
BH8-6-30	6.0	<0.5	14.2	2.6		<1.0	35.9
BH8-6-35	9.0	<0.5	24.2	5.1		<1.0	50.6
BH8-6-40	3.7	<0.5	19.2	3.7		<1.0	50.3
BH8-6-45	4.3	<0.5	7.6	2.0		<1.0	21.1
BH8-6-47	4.4	<0.5	5.7	1.7		<1.0	19.1
BH8-6-48	4.0	<0.5	4.8	1.4		<1.0	14.2
BH9-6-15	<1.0	<0.5	7.3	1.6		<1.0	21.2
BH9-6-20	<1.0	<0.5	4.6	1.2		<1.0	14.4
BH9-6-25	5.7	<0.5	15.2	3.1		<1.0	35.5
BH9-6-30	6.6	<0.5	13.7	3.0		<1.0	33.5
BH9-6-35	9.4	<0.5	12.4	2.7		<1.0	33.8
BH9-6-40	2.7	<0.5	19.3	3.7		<1.0	51.4
BH9-6-45	2.0	<0.5	4.6	1.6		<1.0	16.2
BH9-6-47	1.4	<0.5	4.6	1.5		<1.0	15.1

Notes:

1. < = Sample result reported less than the laboratory detection limit for that specific analyte.
2. mg/kg = milligrams per kilogram

APPENDIX C
STATISTICAL SUMMARY TABLE

TABLE C-1.
STATISTICAL SUMMARY TABLE - SOIL SAMPLES - 0 - 10 FEET SOIL DEPTH
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Chemical	Frequency of Detection			Maximum Detected Concentration	Minimum Detected Concentration	Sample Statistics ¹				Exposure Point Concentration (EPC) ³
	# of Detections	# of Samples	Frequency of Detection			Mean Concentration	Standard Deviation	Data Distribution ²	ProUCL Recommended UCL ²	
mg/kg										
VOCs										
Toluene	1	6	17%	1.50E-02	1.50E-02	3.96E-03	5.44E-03	NA	NA	1.50E-02
SVOCs										
Benzo(a)pyrene	1	11	9%	5.00E-02	5.00E-02	2.82E-02	8.15E-03	Non-Parametric	3.26E-02	5.00E-02
Diethylphthalate	3	9	33%	4.20E+00	1.50E+00	1.49E+00	1.30E+00	NA	NA	4.20E+00
Pesticides/Herbicides										
beta-BHC	1	15	7%	6.40E-03	6.40E-03	8.93E-03	2.16E-02	Non-Parametric	6.43E-02	6.40E-03
delta-BHC	1	15	7%	5.50E-03	5.50E-03	8.87E-03	2.16E-02	Non-Parametric	6.43E-02	5.50E-03
alpha-chlordane	9	15	60%	6.80E-01	3.80E-03	7.49E-02	1.75E-01	Gamma	2.34E-01	2.34E-01
gamma-chlordane	9	15	60%	7.50E-01	4.60E-03	8.29E-02	1.94E-01	Gamma	2.63E-01	2.63E-01
2,4-Dichlorophenoxy Acetate Acid	1	52	2%	5.50E-01	5.50E-01	9.56E-02	7.06E-02	Non-Parametric	1.38E-01	5.50E-01
4,4-DDD	2	58	3%	8.20E-01	6.20E-03	2.13E-02	1.09E-01	Non-Parametric	5.06E-02	8.20E-01
4,4-DDE	5	58	9%	2.70E-01	4.60E-03	1.42E-02	4.44E-02	Non-Parametric	2.47E-01	2.70E-01
4,4-DDT	17	58	29%	1.50E+00	4.90E-03	5.79E-02	2.31E-01	Non-Parametric	4.02E-01	1.50E+00
Total DDT (DDD+ DDE+ DDT)	6	17	35%	1.11E+00	4.95E-03	1.27E-01	3.13E-01	Non-Parametric	4.02E-01	1.11E+00
Dalapon	32	48	67%	1.40E+01	1.00E-01	4.58E-01	2.00E+00	Non-Parametric	3.33E+00	3.33E+00
Dieldrin	6	15	40%	1.00E+00	4.60E-03	7.90E-02	2.56E-01	Non-Parametric	7.36E-01	1.00E+00
Endrin (Total)	1	15	7%	3.40E-03	3.40E-03	1.72E-02	4.33E-02	Non-Parametric	1.28E-01	3.40E-03
Heptachlor	3	15	20%	1.90E-01	2.00E-03	1.59E-02	4.84E-02	Non-Parametric	1.40E-01	1.90E-01
Heptachlor Epoxide	2	15	13%	3.90E-03	2.40E-03	8.86E-03	2.16E-02	Non-Parametric	6.43E-01	3.90E-03
Silvex	2	52	4%	2.10E-01	5.00E-02	1.39E-02	2.84E-02	Non-Parametric	3.11E-02	2.10E-01

TABLE C-1.
STATISTICAL SUMMARY TABLE - SOIL SAMPLES - 0 - 10 FEET SOIL DEPTH
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Chemical	Frequency of Detection			Maximum Detected Concentration	Minimum Detected Concentration	Sample Statistics ¹				Exposure Point Concentration (EPC) ³
	# of Detections	# of Samples	Frequency of Detection			Mean Concentration	Standard Deviation	Data Distribution ²	ProUCL Recommended UCL ²	
mg/kg										
Dioxins/Furans										
Total Equivalent 2,3,7,8-TCDD	9	9	100%	5.60E-06	3.61E-07	1.91E-06	2.0353E-06	NA	NA	5.60E-06
Metals and Cyanide										
Arsenic	19	49	39%	1.21E+01	2.15E+00	3.67E+00	2.00E+00	Non-Parametric	4.15E+00	1.21E+01
Cadmium	2	38	5%	1.60E+00	1.25E-01	3.69E-01	4.58E-01	Non-Parametric	6.93E-01	1.60E+00
Copper	34	34	100%	2.97E+01	8.30E+00	1.47E+01	5.23E+00	Gamma	1.62E+01	1.62E+01
Lead	20	40	50%	2.13E+02	1.25E+00	1.93E+01	3.62E+01	Non-Parametric	7.62E+01	7.62E+01
Mercury	4	34	12%	2.20E-01	2.00E-02	1.22E-01	1.81E-01	Non-Parametric	4.31E-01	2.20E-01
Zinc	37	37	100%	1.34E+02	1.17E+01	4.02E+01	2.53E+01	Lognormal	4.79E+01	4.79E+01

Notes:

¹ 1/2 detection limit values used for analytical results below detection limits.

² ProUCL statistical output sheets available upon request.

³ If constituent data set contains more than 50% non-detects, the maximum detected value used as EPC. Otherwise, the lesser of maximum value and recommended 95% UCL used.

4,4-DDD = Dichlorodiphenyldichloroethane

4,4-DDE = Dichlorodiphenyldichloroethylene

4,4-DDT = Dichlorodiphenyltrichloroethane

TCDD = Tetrachlorodibenzo-p-dioxin

APPENDIX D
ProUCL STATISTICAL OUTPUT SHEETS

General Statistics

Data File		Variable:	Benzo(a)pyrene
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	11	Shapiro-Wilk Test Statistic	0.750013
Number of Unique Samples	4	Shapiro-Wilk 5% Critical Value	0.85
Minimum	0.02	Data not normal at 5% significance level	
Maximum	0.05		
Mean	0.028182	95% UCL (Assuming Normal Distribution)	
Median	0.025	Student's-t UCL	0.032634
Standard Deviation	0.008146		
Variance	6.64E-005	Gamma Distribution Test	
Coefficient of Variation	0.289065	A-D Test Statistic	0.83105
Skewness	2.076725	A-D 5% Critical Value	0.72895
Gamma Statistics		K-S Test Statistic	0.277103
		K-S 5% Critical Value	0.255161
k hat	16.26246	Data do not follow gamma distribution	
k star (bias corrected)	11.88785	at 5% significance level	
Theta hat	0.001733		
Theta star	0.002371	95% UCLs (Assuming Gamma Distribution)	
nu hat	357.7742	Approximate Gamma UCL	0.032746
nu star	261.5328	Adjusted Gamma UCL	0.033569
Approx. Chi Square Value (.05)	225.0774		
Adjusted Level of Significance	0.02783	Lognormal Distribution Test	
Adjusted Chi Square Value	219.5617	Shapiro-Wilk Test Statistic	0.845074
		Shapiro-Wilk 5% Critical Value	0.85
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-3.912023		
Maximum of log data	-2.995732	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-3.600139	95% H-UCL	0.032777
Standard Deviation of log data	0.250276	95% Chebyshev (MVUE) UCL	0.037405
Variance of log data	0.062638	97.5% Chebyshev (MVUE) UCL	0.041429
		99% Chebyshev (MVUE) UCL	0.049332
		95% Non-parametric UCLs	
		CLT UCL	0.032222
		Adj-CLT UCL (Adjusted for skewness)	0.033865
		Mod-t UCL (Adjusted for skewness)	0.03289
		Jackknife UCL	0.032634
		Standard Bootstrap UCL	N/R
		Bootstrap-t UCL	N/R
RECOMMENDATION		Hall's Bootstrap UCL	N/R
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	N/R
		BCA Bootstrap UCL	N/R
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	0.038888
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	0.043521
		99% Chebyshev (Mean, Sd) UCL	0.052621

General Statistics

Data File		Variable:	beta-BHC
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.427705
Number of Unique Samples	5	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.00085	Data not normal at 5% significance level	
Maximum	0.085		
Mean	0.008927	95% UCL (Assuming Normal Distribution)	
Median	0.00085	Student's-t UCL	0.018734
Standard Deviation	0.021566		
Variance	0.000465	Gamma Distribution Test	
Coefficient of Variation	2.415928	A-D Test Statistic	2.450221
Skewness	3.578305	A-D 5% Critical Value	0.801751
		K-S Test Statistic	0.401798
Gamma Statistics		K-S 5% Critical Value	0.23509
k hat	0.45879	Data do not follow gamma distribution	
k star (bias corrected)	0.411477	at 5% significance level	
Theta hat	0.019457		
Theta star	0.021694	95% UCLs (Assuming Gamma Distribution)	
nu hat	13.76371	Approximate Gamma UCL	0.020206
nu star	12.3443	Adjusted Gamma UCL	0.022487
Approx. Chi Square Value (.05)	5.453632		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	4.900386	Shapiro-Wilk Test Statistic	0.686904
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.070274		
Maximum of log data	-2.465104	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-6.121948	95% H-UCL	0.028475
Standard Deviation of log data	1.496939	95% Chebyshev (MVUE) UCL	0.01719
Variance of log data	2.240828	97.5% Chebyshev (MVUE) UCL	0.022083
		99% Chebyshev (MVUE) UCL	0.031694
		95% Non-parametric UCLs	
		CLT UCL	0.018086
		Adj-CLT UCL (Adjusted for skewness)	0.023583
		Mod-t UCL (Adjusted for skewness)	0.019592
		Jackknife UCL	0.018734
		Standard Bootstrap UCL	0.017916
		Bootstrap-t UCL	0.058417
RECOMMENDATION		Hall's Bootstrap UCL	0.051935
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.01944
		BCA Bootstrap UCL	0.025757
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.033199
		97.5% Chebyshev (Mean, Sd) UCL	0.043701
		99% Chebyshev (Mean, Sd) UCL	0.064331

General Statistics

Data File		Variable:	delta-BHC
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.425387
Number of Unique Samples	5	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.00085	Data not normal at 5% significance level	
Maximum	0.085		
Mean	0.008867	95% UCL (Assuming Normal Distribution)	
Median	0.00085	Student's-t UCL	0.018678
Standard Deviation	0.021575		
Variance	0.000465	Gamma Distribution Test	
Coefficient of Variation	2.433267	A-D Test Statistic	2.464233
Skewness	3.583366	A-D 5% Critical Value	0.801952
		K-S Test Statistic	0.400454
Gamma Statistics		K-S 5% Critical Value	0.235119
k hat	0.457844	Data do not follow gamma distribution	
k star (bias corrected)	0.41072	at 5% significance level	
Theta hat	0.019366		
Theta star	0.021588	95% UCLs (Assuming Gamma Distribution)	
nu hat	13.73532	Approximate Gamma UCL	0.020088
nu star	12.32159	Adjusted Gamma UCL	0.022359
Approx. Chi Square Value (.05)	5.438564		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	4.886218	Shapiro-Wilk Test Statistic	0.68749
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.070274		
Maximum of log data	-2.465104	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-6.132052	95% H-UCL	0.027543
Standard Deviation of log data	1.489692	95% Chebyshev (MVUE) UCL	0.016807
Variance of log data	2.219183	97.5% Chebyshev (MVUE) UCL	0.021581
		99% Chebyshev (MVUE) UCL	0.030961
		95% Non-parametric UCLs	
		CLT UCL	0.01803
		Adj-CLT UCL (Adjusted for skewness)	0.023537
		Mod-t UCL (Adjusted for skewness)	0.019537
		Jackknife UCL	0.018678
		Standard Bootstrap UCL	0.017715
		Bootstrap-t UCL	0.055869
RECOMMENDATION		Hall's Bootstrap UCL	0.051222
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.01952
		BCA Bootstrap UCL	0.024987
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.033148
		97.5% Chebyshev (Mean, Sd) UCL	0.043655
		99% Chebyshev (Mean, Sd) UCL	0.064294

General Statistics

Data File		Variable:	alpha-chlordane
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.482709
Number of Unique Samples	10	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.00085	Data not normal at 5% significance level	
Maximum	0.68		
Mean	0.07494	95% UCL (Assuming Normal Distribution)	
Median	0.0072	Student's-t UCL	0.154627
Standard Deviation	0.175225		
Variance	0.030704	Gamma Distribution Test	
Coefficient of Variation	2.338208	A-D Test Statistic	1.059999
Skewness	3.355701	A-D 5% Critical Value	0.832633
		K-S Test Statistic	0.209578
Gamma Statistics		K-S 5% Critical Value	0.2396
k hat	0.313531	Data follow approximate gamma distribution	
k star (bias corrected)	0.29527	at 5% significance level	
Theta hat	0.239019		
Theta star	0.253802	95% UCLs (Assuming Gamma Distribution)	
nu hat	9.405944	Approximate Gamma UCL	0.204839
nu star	8.858088	Adjusted Gamma UCL	0.234094
Approx. Chi Square Value (.05)	3.240715		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	2.835715	Shapiro-Wilk Test Statistic	0.869709
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.070274		
Maximum of log data	-0.385662	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.774636	95% H-UCL	2.968665
Standard Deviation of log data	2.309905	95% Chebyshev (MVUE) UCL	0.301097
Variance of log data	5.335661	97.5% Chebyshev (MVUE) UCL	0.3984
		99% Chebyshev (MVUE) UCL	0.589532
		95% Non-parametric UCLs	
		CLT UCL	0.149358
		Adj-CLT UCL (Adjusted for skewness)	0.191244
		Mod-t UCL (Adjusted for skewness)	0.16116
		Jackknife UCL	0.154627
		Standard Bootstrap UCL	0.144799
		Bootstrap-t UCL	0.378933
RECOMMENDATION		Hall's Bootstrap UCL	0.410558
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	0.16457
		BCA Bootstrap UCL	0.2073
Use Adjusted Gamma UCL		95% Chebyshev (Mean, Sd) UCL	0.27215
		97.5% Chebyshev (Mean, Sd) UCL	0.357482
		99% Chebyshev (Mean, Sd) UCL	0.525102

General Statistics

Data File		Variable:	gamma-chlordane
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.485009
Number of Unique Samples	9	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.00085	Data not normal at 5% significance level	
Maximum	0.75		
Mean	0.082867	95% UCL (Assuming Normal Distribution)	
Median	0.0063	Student's-t UCL	0.170924
Standard Deviation	0.193632		
Variance	0.037493	Gamma Distribution Test	
Coefficient of Variation	2.336669	A-D Test Statistic	1.092479
Skewness	3.332321	A-D 5% Critical Value	0.834426
Gamma Statistics		K-S Test Statistic	0.21212
		K-S 5% Critical Value	0.239862
k hat	0.305099	Data follow approximate gamma distribution	
k star (bias corrected)	0.288524	at 5% significance level	
Theta hat	0.271606		
Theta star	0.287209	95% UCLs (Assuming Gamma Distribution)	
nu hat	9.152973	Approximate Gamma UCL	0.229921
nu star	8.655712	Adjusted Gamma UCL	0.263318
Approx. Chi Square Value (.05)	3.119637		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	2.723971	Shapiro-Wilk Test Statistic	0.86852
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.070274		
Maximum of log data	-0.287682	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.74445	95% H-UCL	3.762983
Standard Deviation of log data	2.351543	95% Chebyshev (MVUE) UCL	0.337216
Variance of log data	5.529755	97.5% Chebyshev (MVUE) UCL	0.446606
		99% Chebyshev (MVUE) UCL	0.661483
		95% Non-parametric UCLs	
		CLT UCL	0.165102
		Adj-CLT UCL (Adjusted for skewness)	0.211066
		Mod-t UCL (Adjusted for skewness)	0.178094
		Jackknife UCL	0.170924
		Standard Bootstrap UCL	0.162091
		Bootstrap-t UCL	0.407793
RECOMMENDATION		Hall's Bootstrap UCL	0.448648
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	0.177493
		BCA Bootstrap UCL	0.225867
Use Adjusted Gamma UCL		95% Chebyshev (Mean, Sd) UCL	0.300792
		97.5% Chebyshev (Mean, Sd) UCL	0.395089
		99% Chebyshev (Mean, Sd) UCL	0.580316

General Statistics

Data File		Variable:	2,4-Dichlorophenoxy Acetate Acid
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	52	Lilliefors Test Statistic	0.456062
Number of Unique Samples	4	Lilliefors 5% Critical Value	0.122866
Minimum	0.0125	Data not normal at 5% significance level	
Maximum	0.55		
Mean	0.095625	95% UCL (Assuming Normal Distribution)	
Median	0.1	Student's-t UCL	0.112026
Standard Deviation	0.070598		
Variance	0.004984	Gamma Distribution Test	
Coefficient of Variation	0.738277	A-D Test Statistic	11.08082
Skewness	5.230554	A-D 5% Critical Value	0.758597
		K-S Test Statistic	0.435856
Gamma Statistics		K-S 5% Critical Value	0.124238
k hat	2.747152	Data do not follow gamma distribution	
k star (bias corrected)	2.601483	at 5% significance level	
Theta hat	0.034809		
Theta star	0.036758	95% UCLs (Assuming Gamma Distribution)	
nu hat	285.7038	Approximate Gamma UCL	0.110821
nu star	270.5542	Adjusted Gamma UCL	0.111288
Approx. Chi Square Value (.05)	233.4548		
Adjusted Level of Significance	0.045385	Lognormal Distribution Test	
Adjusted Chi Square Value	232.4759	Lilliefors Test Statistic	0.459912
		Lilliefors 5% Critical Value	0.122866
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.382027		
Maximum of log data	-0.597837	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-2.540232	95% H-UCL	0.122755
Standard Deviation of log data	0.699414	95% Chebyshev (MVUE) UCL	0.146463
Variance of log data	0.48918	97.5% Chebyshev (MVUE) UCL	0.166516
		99% Chebyshev (MVUE) UCL	0.205908
		95% Non-parametric UCLs	
		CLT UCL	0.111728
		Adj-CLT UCL (Adjusted for skewness)	0.119316
		Mod-t UCL (Adjusted for skewness)	0.11321
		Jackknife UCL	0.112026
		Standard Bootstrap UCL	N/R
		Bootstrap-t UCL	N/R
RECOMMENDATION		Hall's Bootstrap UCL	N/R
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	N/R
		BCA Bootstrap UCL	N/R
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.138299
		97.5% Chebyshev (Mean, Sd) UCL	0.156764
		99% Chebyshev (Mean, Sd) UCL	0.193036

General Statistics

Data File			Variable:	4,4-DDD	
Raw Statistics		Normal Distribution Test			
Number of Valid Samples	58	Lilliefors Test Statistic			0.463993
Number of Unique Samples	10	Lilliefors 5% Critical Value			0.116337
Minimum	0.00165	Data not normal at 5% significance level			
Maximum	0.82				
Mean	0.021297	95% UCL (Assuming Normal Distribution)			
Median	0.0025	Student's-t UCL			0.045239
Standard Deviation	0.109049				
Variance	0.011892	Gamma Distribution Test			
Coefficient of Variation	5.120299	A-D Test Statistic			15.40796
Skewness	7.180759	A-D 5% Critical Value			0.845267
Gamma Statistics		K-S Test Statistic			0.465816
k hat	0.375113	K-S 5% Critical Value			0.125569
k star (bias corrected)	0.367205	Data do not follow gamma distribution at 5% significance level			
Theta hat	0.056776				
Theta star	0.057999	95% UCLs (Assuming Gamma Distribution)			
nu hat	43.51309	Approximate Gamma UCL			0.031686
nu star	42.59575	Adjusted Gamma UCL			0.032013
Approx.Chi Square Value (.05)	28.63024				
Adjusted Level of Significance	0.045862	Lognormal Distribution Test			
Adjusted Chi Square Value	28.33807	Lilliefors Test Statistic			0.439056
Log-transformed Statistics		Lilliefors 5% Critical Value			0.116337
Minimum of log data	-6.40698	Data not lognormal at 5% significance level			
Maximum of log data	-0.198451	95% UCLs (Assuming Lognormal Distribution)			
Mean of log data	-5.621719	95% H-UCL			0.009774
Standard Deviation of log data	1.125753	95% Chebyshev (MVUE) UCL			0.011978
Variance of log data	1.26732	97.5% Chebyshev (MVUE) UCL			0.01426
		99% Chebyshev (MVUE) UCL			0.018745
		95% Non-parametric UCLs			
		CLT UCL			0.04485
		Adj-CLT UCL (Adjusted for skewness)			0.059276
		Mod-t UCL (Adjusted for skewness)			0.047489
		Jackknife UCL			0.045239
		Standard Bootstrap UCL			0.044677
		Bootstrap-t UCL			0.388825
RECOMMENDATION		Hall's Bootstrap UCL			0.23198
Data are Non-parametric (0.05)		Percentile Bootstrap UCL			0.048919
		BCA Bootstrap UCL			0.075195
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL			0.083712
		97.5% Chebyshev (Mean, Sd) UCL			0.110719
		99% Chebyshev (Mean, Sd) UCL			0.163768

General Statistics

Data File		Variable:	4,4-DDE
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	58	Lilliefors Test Statistic	0.448535
Number of Unique Samples	11	Lilliefors 5% Critical Value	0.116337
Minimum	0.00165	Data not normal at 5% significance level	
Maximum	0.27		
Mean	0.014175	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.023923
Standard Deviation	0.044399		
Variance	0.001971	Gamma Distribution Test	
Coefficient of Variation	3.132207	A-D Test Statistic	15.51351
Skewness	4.552423	A-D 5% Critical Value	0.823983
		K-S Test Statistic	0.500754
Gamma Statistics		K-S 5% Critical Value	0.124131
k hat	0.464827	Data do not follow gamma distribution	
k star (bias corrected)	0.452278	at 5% significance level	
Theta hat	0.030495		
Theta star	0.031341	95% UCLs (Assuming Gamma Distribution)	
nu hat	53.9199	Approximate Gamma UCL	0.020196
nu star	52.46427	Adjusted Gamma UCL	0.020381
Approx. Chi Square Value (.05)	36.82349		
Adjusted Level of Significance	0.045862	Lognormal Distribution Test	
Adjusted Chi Square Value	36.48937	Lilliefors Test Statistic	0.466039
		Lilliefors 5% Critical Value	0.116337
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.40698		
Maximum of log data	-1.309333	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.638437	95% H-UCL	0.009895
Standard Deviation of log data	1.143723	95% Chebyshev (MVUE) UCL	0.012122
Variance of log data	1.308103	97.5% Chebyshev (MVUE) UCL	0.014459
		99% Chebyshev (MVUE) UCL	0.01905
		95% Non-parametric UCLs	
		CLT UCL	0.023764
		Adj-CLT UCL (Adjusted for skewness)	0.027488
		Mod-t UCL (Adjusted for skewness)	0.024504
		Jackknife UCL	0.023923
		Standard Bootstrap UCL	0.023722
		Bootstrap-t UCL	0.037587
RECOMMENDATION		Hall's Bootstrap UCL	0.027587
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.024761
		BCA Bootstrap UCL	0.029278
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.039587
		97.5% Chebyshev (Mean, Sd) UCL	0.050583
		99% Chebyshev (Mean, Sd) UCL	0.072182

General Statistics

Data File			Variable:	4,4-DDT	
Raw Statistics		Normal Distribution Test			
Number of Valid Samples	58	Lilliefors Test Statistic			0.460203
Number of Unique Samples	23	Lilliefors 5% Critical Value			0.116337
Minimum	0.00165	Data not normal at 5% significance level			
Maximum	1.5				
Mean	0.057911	95% UCL (Assuming Normal Distribution)			
Median	0.0025	Student's-t UCL			0.108646
Standard Deviation	0.231089				
Variance	0.053402	Gamma Distribution Test			
Coefficient of Variation	3.990401	A-D Test Statistic			11.40888
Skewness	5.197819	A-D 5% Critical Value			0.862197
		K-S Test Statistic			0.305481
Gamma Statistics		K-S 5% Critical Value			0.126712
k hat	0.303756	Data do not follow gamma distribution			
k star (bias corrected)	0.299539	at 5% significance level			
Theta hat	0.19065				
Theta star	0.193335	95% UCLs (Assuming Gamma Distribution)			
nu hat	35.2357	Approximate Gamma UCL			0.090397
nu star	34.74649	Adjusted Gamma UCL			0.091446
Approx. Chi Square Value (.05)	22.25964				
Adjusted Level of Significance	0.045862	Lognormal Distribution Test			
Adjusted Chi Square Value	22.00441	Lilliefors Test Statistic			0.317963
		Lilliefors 5% Critical Value			0.116337
Log-transformed Statistics		Data not lognormal at 5% significance level			
Minimum of log data	-6.40698				
Maximum of log data	0.405465	95% UCLs (Assuming Lognormal Distribution)			
Mean of log data	-5.114369	95% H-UCL			0.036096
Standard Deviation of log data	1.547935	95% Chebyshev (MVUE) UCL			0.042023
Variance of log data	2.396102	97.5% Chebyshev (MVUE) UCL			0.051952
		99% Chebyshev (MVUE) UCL			0.071456
		95% Non-parametric UCLs			
		CLT UCL			0.107822
		Adj-CLT UCL (Adjusted for skewness)			0.12995
		Mod-t UCL (Adjusted for skewness)			0.112098
		Jackknife UCL			0.108646
		Standard Bootstrap UCL			0.106387
		Bootstrap-t UCL			0.170757
RECOMMENDATION		Hall's Bootstrap UCL			0.119115
Data are Non-parametric (0.05)		Percentile Bootstrap UCL			0.110262
		BCA Bootstrap UCL			0.13456
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL			0.190175
		97.5% Chebyshev (Mean, Sd) UCL			0.247406
		99% Chebyshev (Mean, Sd) UCL			0.359825

General Statistics

Data File			Variable:	Total DDT	
Raw Statistics		Normal Distribution Test			
Number of Valid Samples	58	Lilliefors Test Statistic	0.450515		
Number of Unique Samples	25	Lilliefors 5% Critical Value	0.116337		
Minimum	0.00495	Data not normal at 5% significance level			
Maximum	2.59				
Mean	0.093384	95% UCL (Assuming Normal Distribution)			
Median	0.0075	Student's-t UCL	0.176005		
Standard Deviation	0.376326				
Variance	0.141621	Gamma Distribution Test			
Coefficient of Variation	4.029893	A-D Test Statistic	12.32715		
Skewness	5.761539	A-D 5% Critical Value	0.848684		
		K-S Test Statistic	0.329256		
Gamma Statistics		K-S 5% Critical Value	0.125799		
k hat	0.360712	Data do not follow gamma distribution			
k star (bias corrected)	0.353549	at 5% significance level			
Theta hat	0.258887				
Theta star	0.264132	95% UCLs (Assuming Gamma Distribution)			
nu hat	41.84264	Approximate Gamma UCL	0.140119		
nu star	41.0117	Adjusted Gamma UCL	0.141595		
Approx. Chi Square Value (.05)	27.33272				
Adjusted Level of Significance	0.045862	Lognormal Distribution Test			
Adjusted Chi Square Value	27.04772	Lilliefors Test Statistic	0.27983		
		Lilliefors 5% Critical Value	0.116337		
Log-transformed Statistics		Data not lognormal at 5% significance level			
Minimum of log data	-5.308368				
Maximum of log data	0.951658	95% UCLs (Assuming Lognormal Distribution)			
Mean of log data	-4.226107	95% H-UCL	0.055014		
Standard Deviation of log data	1.317296	95% Chebyshev (MVUE) UCL	0.066643		
Variance of log data	1.735268	97.5% Chebyshev (MVUE) UCL	0.080825		
		99% Chebyshev (MVUE) UCL	0.108684		
		95% Non-parametric UCLs			
		CLT UCL	0.174662		
		Adj-CLT UCL (Adjusted for skewness)	0.214607		
		Mod-t UCL (Adjusted for skewness)	0.182236		
		Jackknife UCL	0.176005		
		Standard Bootstrap UCL	0.172661		
		Bootstrap-t UCL	0.3474		
RECOMMENDATION		Hall's Bootstrap UCL	0.604655		
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.185262		
		BCA Bootstrap UCL	0.232252		
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.308774		
		97.5% Chebyshev (Mean, Sd) UCL	0.401974		
		99% Chebyshev (Mean, Sd) UCL	0.585047		

General Statistics

Data File			Variable: Dalapon	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	48	Shapiro-Wilk Test Statistic	0.184291	
Number of Unique Samples	20	Shapiro-Wilk 5% Critical Value	0.947	
Minimum	0.05	Data not normal at 5% significance level		
Maximum	14			
Mean	0.457708	95% UCL (Assuming Normal Distribution)		
Median	0.155	Student's-t UCL	0.941901	
Standard Deviation	1.999243			
Variance	3.996971	Gamma Distribution Test		
Coefficient of Variation	4.36794	A-D Test Statistic	7.345805	
Skewness	6.895849	A-D 5% Critical Value	0.810079	
		K-S Test Statistic	0.357291	
Gamma Statistics		K-S 5% Critical Value	0.134793	
k hat	0.543682	Data do not follow gamma distribution		
k star (bias corrected)	0.523591	at 5% significance level		
Theta hat	0.841867			
Theta star	0.874171	95% UCLs (Assuming Gamma Distribution)		
nu hat	52.19351	Approximate Gamma UCL	0.657659	
nu star	50.26475	Adjusted Gamma UCL	0.66518	
Approx. Chi Square Value (.05)	34.98255			
Adjusted Level of Significance	0.045	Lognormal Distribution Test		
Adjusted Chi Square Value	34.58702	Shapiro-Wilk Test Statistic	0.790754	
		Shapiro-Wilk 5% Critical Value	0.947	
Log-transformed Statistics		Data not lognormal at 5% significance level		
Minimum of log data	-2.995732			
Maximum of log data	2.639057	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	-1.93489	95% H-UCL	0.342304	
Standard Deviation of log data	1.015909	95% Chebyshev (MVUE) UCL	0.417691	
Variance of log data	1.032071	97.5% Chebyshev (MVUE) UCL	0.49536	
		99% Chebyshev (MVUE) UCL	0.647927	
		95% Non-parametric UCLs		
		CLT UCL	0.932357	
		Adj-CLT UCL (Adjusted for skewness)	1.239254	
		Mod-t UCL (Adjusted for skewness)	0.98977	
		Jackknife UCL	0.941901	
		Standard Bootstrap UCL	0.937132	
		Bootstrap-t UCL	6.367348	
RECOMMENDATION		Hall's Bootstrap UCL	3.452579	
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	1.029375	
		BCA Bootstrap UCL	1.325833	
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	1.715538	
		97.5% Chebyshev (Mean, Sd) UCL	2.259801	
		99% Chebyshev (Mean, Sd) UCL	3.328902	

General Statistics

Data File		Variable:	Dieldrin	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.338549	
Number of Unique Samples	10	Shapiro-Wilk 5% Critical Value	0.881	
Minimum	0.00165	Data not normal at 5% significance level		
Maximum	1			
Mean	0.079023	95% UCL (Assuming Normal Distribution)		
Median	0.0046	Student's-t UCL	0.195344	
Standard Deviation	0.25578			
Variance	0.065423	Gamma Distribution Test		
Coefficient of Variation	3.236763	A-D Test Statistic	2.415031	
Skewness	3.822668	A-D 5% Critical Value	0.841233	
		K-S Test Statistic	0.316473	
Gamma Statistics		K-S 5% Critical Value	0.240722	
k hat	0.286122	Data do not follow gamma distribution		
k star (bias corrected)	0.273342	at 5% significance level		
Theta hat	0.276187			
Theta star	0.2891	95% UCLs (Assuming Gamma Distribution)		
nu hat	8.583664	Approximate Gamma UCL	0.227306	
nu star	8.200265	Adjusted Gamma UCL	0.261662	
Approx. Chi Square Value (.05)	2.850834			
Adjusted Level of Significance	0.03235	Lognormal Distribution Test		
Adjusted Chi Square Value	2.47652	Shapiro-Wilk Test Statistic	0.792657	
		Shapiro-Wilk 5% Critical Value	0.881	
Log-transformed Statistics		Data not lognormal at 5% significance level		
Minimum of log data	-6.40698			
Maximum of log data	0	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	-4.966735	95% H-UCL	0.369428	
Standard Deviation of log data	1.88695	95% Chebyshev (MVUE) UCL	0.109916	
Variance of log data	3.560582	97.5% Chebyshev (MVUE) UCL	0.143675	
		99% Chebyshev (MVUE) UCL	0.209988	
		95% Non-parametric UCLs		
		CLT UCL	0.187653	
		Adj-CLT UCL (Adjusted for skewness)	0.257303	
		Mod-t UCL (Adjusted for skewness)	0.206208	
		Jackknife UCL	0.195344	
		Standard Bootstrap UCL	0.184995	
		Bootstrap-t UCL	1.751676	
RECOMMENDATION		Hall's Bootstrap UCL	1.464556	
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.20881	
		BCA Bootstrap UCL	0.279713	
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.366894	
		97.5% Chebyshev (Mean, Sd) UCL	0.491456	
		99% Chebyshev (Mean, Sd) UCL	0.736134	

General Statistics

Data File		Variable:	Endrin (Total)
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.415075
Number of Unique Samples	6	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.00165	Data not normal at 5% significance level	
Maximum	0.17		
Mean	0.01721	95% UCL (Assuming Normal Distribution)	
Median	0.0017	Student's-t UCL	0.036895
Standard Deviation	0.043285		
Variance	0.001874	Gamma Distribution Test	
Coefficient of Variation	2.515135	A-D Test Statistic	2.718185
Skewness	3.588782	A-D 5% Critical Value	0.805304
		K-S Test Statistic	0.387574
Gamma Statistics		K-S 5% Critical Value	0.235608
k hat	0.442079	Data do not follow gamma distribution	
k star (bias corrected)	0.398108	at 5% significance level	
Theta hat	0.03893		
Theta star	0.04323	95% UCLs (Assuming Gamma Distribution)	
nu hat	13.26237	Approximate Gamma UCL	0.039614
nu star	11.94323	Adjusted Gamma UCL	0.044189
Approx. Chi Square Value (.05)	5.188655		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	4.651408	Shapiro-Wilk Test Statistic	0.666897
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.40698		
Maximum of log data	-1.771957	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.52713	95% H-UCL	0.048045
Standard Deviation of log data	1.474383	95% Chebyshev (MVUE) UCL	0.029976
Variance of log data	2.173806	97.5% Chebyshev (MVUE) UCL	0.03846
		99% Chebyshev (MVUE) UCL	0.055125
		95% Non-parametric UCLs	
		CLT UCL	0.035593
		Adj-CLT UCL (Adjusted for skewness)	0.046659
		Mod-t UCL (Adjusted for skewness)	0.038621
		Jackknife UCL	0.036895
		Standard Bootstrap UCL	0.035107
		Bootstrap-t UCL	0.125158
RECOMMENDATION		Hall's Bootstrap UCL	0.09941
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.03943
		BCA Bootstrap UCL	0.052917
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.065926
		97.5% Chebyshev (Mean, Sd) UCL	0.087006
		99% Chebyshev (Mean, Sd) UCL	0.128412

General Statistics

Data File		Variable:	Heptachlor
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.348117
Number of Unique Samples	6	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.00085	Data not normal at 5% significance level	
Maximum	0.19		
Mean	0.01593	95% UCL (Assuming Normal Distribution)	
Median	0.00085	Student's-t UCL	0.037931
Standard Deviation	0.048378		
Variance	0.00234	Gamma Distribution Test	
Coefficient of Variation	3.036892	A-D Test Statistic	2.65505
Skewness	3.813432	A-D 5% Critical Value	0.823627
		K-S Test Statistic	0.32741
Gamma Statistics		K-S 5% Critical Value	0.238284
k hat	0.355894	Data do not follow gamma distribution	
k star (bias corrected)	0.32916	at 5% significance level	
Theta hat	0.044761		
Theta star	0.048396	95% UCLs (Assuming Gamma Distribution)	
nu hat	10.67682	Approximate Gamma UCL	0.040723
nu star	9.874791	Adjusted Gamma UCL	0.0461
Approx. Chi Square Value (.05)	3.862823		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	3.412264	Shapiro-Wilk Test Statistic	0.714357
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.070274		
Maximum of log data	-1.660731	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-6.023852	95% H-UCL	0.046424
Standard Deviation of log data	1.614626	95% Chebyshev (MVUE) UCL	0.023287
Variance of log data	2.607018	97.5% Chebyshev (MVUE) UCL	0.030096
		99% Chebyshev (MVUE) UCL	0.043472
		95% Non-parametric UCLs	
		CLT UCL	0.036476
		Adj-CLT UCL (Adjusted for skewness)	0.049618
		Mod-t UCL (Adjusted for skewness)	0.03998
		Jackknife UCL	0.037931
		Standard Bootstrap UCL	0.036059
		Bootstrap-t UCL	0.254006
RECOMMENDATION		Hall's Bootstrap UCL	0.19008
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.04021
		BCA Bootstrap UCL	0.054057
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.070377
		97.5% Chebyshev (Mean, Sd) UCL	0.093937
		99% Chebyshev (Mean, Sd) UCL	0.140215

General Statistics

Data File		Variable:	Heptachlor Epoxide
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.424688
Number of Unique Samples	6	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.00085	Data not normal at 5% significance level	
Maximum	0.085		
Mean	0.008863	95% UCL (Assuming Normal Distribution)	
Median	0.00085	Student's-t UCL	0.018668
Standard Deviation	0.02156		
Variance	0.000465	Gamma Distribution Test	
Coefficient of Variation	2.432479	A-D Test Statistic	2.21195
Skewness	3.592753	A-D 5% Critical Value	0.799074
		K-S Test Statistic	0.341434
Gamma Statistics		K-S 5% Critical Value	0.234699
k hat	0.471383	Data do not follow gamma distribution	
k star (bias corrected)	0.421551	at 5% significance level	
Theta hat	0.018803		
Theta star	0.021026	95% UCLs (Assuming Gamma Distribution)	
nu hat	14.1415	Approximate Gamma UCL	0.019822
nu star	12.64653	Adjusted Gamma UCL	0.022023
Approx. Chi Square Value (.05)	5.654798		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	5.089653	Shapiro-Wilk Test Statistic	0.734535
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.070274		
Maximum of log data	-2.465104	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-6.08577	95% H-UCL	0.025877
Standard Deviation of log data	1.455177	95% Chebyshev (MVUE) UCL	0.016592
Variance of log data	2.117539	97.5% Chebyshev (MVUE) UCL	0.021265
		99% Chebyshev (MVUE) UCL	0.030443
		95% Non-parametric UCLs	
		CLT UCL	0.01802
		Adj-CLT UCL (Adjusted for skewness)	0.023538
		Mod-t UCL (Adjusted for skewness)	0.019529
		Jackknife UCL	0.018668
		Standard Bootstrap UCL	0.017592
		Bootstrap-t UCL	0.0626
RECOMMENDATION		Hall's Bootstrap UCL	0.050929
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.019673
		BCA Bootstrap UCL	0.02584
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.033128
		97.5% Chebyshev (Mean, Sd) UCL	0.043628
		99% Chebyshev (Mean, Sd) UCL	0.064252

General Statistics

Data File		Variable:	Silvex
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	52	Lilliefors Test Statistic	0.516098
Number of Unique Samples	4	Lilliefors 5% Critical Value	0.122866
Minimum	0.0025	Data not normal at 5% significance level	
Maximum	0.21		
Mean	0.013894	95% UCL (Assuming Normal Distribution)	
Median	0.01	Student's-t UCL	0.020489
Standard Deviation	0.028386		
Variance	0.000806	Gamma Distribution Test	
Coefficient of Variation	2.042973	A-D Test Statistic	13.7977
Skewness	6.757239	A-D 5% Critical Value	0.767899
		K-S Test Statistic	0.500363
Gamma Statistics		K-S 5% Critical Value	0.125394
k hat	1.486293	Data do not follow gamma distribution	
k star (bias corrected)	1.413366	at 5% significance level	
Theta hat	0.009348		
Theta star	0.009831	95% UCLs (Assuming Gamma Distribution)	
nu hat	154.5745	Approximate Gamma UCL	0.017024
nu star	146.9901	Adjusted Gamma UCL	0.017124
Approx. Chi Square Value (.05)	119.9642		
Adjusted Level of Significance	0.045385	Lognormal Distribution Test	
Adjusted Chi Square Value	119.2696	Lilliefors Test Statistic	0.434565
		Lilliefors 5% Critical Value	0.122866
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-5.991465		
Maximum of log data	-1.560648	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.648968	95% H-UCL	0.014123
Standard Deviation of log data	0.647298	95% Chebyshev (MVUE) UCL	0.01672
Variance of log data	0.418994	97.5% Chebyshev (MVUE) UCL	0.018872
		99% Chebyshev (MVUE) UCL	0.0231
		95% Non-parametric UCLs	
		CLT UCL	0.020369
		Adj-CLT UCL (Adjusted for skewness)	0.02431
		Mod-t UCL (Adjusted for skewness)	0.021104
		Jackknife UCL	0.020489
		Standard Bootstrap UCL	N/R
		Bootstrap-t UCL	N/R
RECOMMENDATION		Hall's Bootstrap UCL	N/R
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	N/R
		BCA Bootstrap UCL	N/R
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.031052
		97.5% Chebyshev (Mean, Sd) UCL	0.038477
		99% Chebyshev (Mean, Sd) UCL	0.053061

General Statistics

Data File		Variable:	Arsenic	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	49	Shapiro-Wilk Test Statistic	0.675991	
Number of Unique Samples	19	Shapiro-Wilk 5% Critical Value	0.947	
Minimum	2.15	Data not normal at 5% significance level		
Maximum	12.1			
Mean	3.668367	95% UCL (Assuming Normal Distribution)		
Median	2.5	Student's-t UCL	4.147198	
Standard Deviation	1.998429			
Variance	3.993718	Gamma Distribution Test		
Coefficient of Variation	0.544773	A-D Test Statistic	6.026341	
Skewness	2.155896	A-D 5% Critical Value	0.753556	
Gamma Statistics		K-S Test Statistic	0.355836	
k hat	5.026083	K-S 5% Critical Value	0.12689	
k star (bias corrected)	4.731969	Data do not follow gamma distribution at 5% significance level		
Theta hat	0.729866			
Theta star	0.775231	95% UCLs (Assuming Gamma Distribution)		
nu hat	492.5561	Approximate Gamma UCL	4.10119	
nu star	463.733	Adjusted Gamma UCL	4.115051	
Approx. Chi Square Value (.05)	414.7925			
Adjusted Level of Significance	0.045102	Lognormal Distribution Test		
Adjusted Chi Square Value	413.3953	Shapiro-Wilk Test Statistic	0.735613	
		Shapiro-Wilk 5% Critical Value	0.947	
Log-transformed Statistics		Data not lognormal at 5% significance level		
Minimum of log data	0.765468			
Maximum of log data	2.493205	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	1.19698	95% H-UCL	4.048396	
Standard Deviation of log data	0.423114	95% Chebyshev (MVUE) UCL	4.599446	
Variance of log data	0.179026	97.5% Chebyshev (MVUE) UCL	5.026323	
		99% Chebyshev (MVUE) UCL	5.864839	
		95% Non-parametric UCLs		
		CLT UCL	4.137956	
		Adj-CLT UCL (Adjusted for skewness)	4.231907	
		Mod-t UCL (Adjusted for skewness)	4.161852	
		Jackknife UCL	4.147198	
		Standard Bootstrap UCL	4.142	
		Bootstrap-t UCL	4.329167	
RECOMMENDATION		Hall's Bootstrap UCL	4.333921	
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	4.156122	
		BCA Bootstrap UCL	4.30102	
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	4.912789	
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	5.451251	
		99% Chebyshev (Mean, Sd) UCL	6.508955	

General Statistics

Data File			Variable: Cadmium	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	38	Shapiro-Wilk Test Statistic	0.56714	
Number of Unique Samples	5	Shapiro-Wilk 5% Critical Value	0.938	
Minimum	0.125	Data not normal at 5% significance level		
Maximum	1.6			
Mean	0.368816	95% UCL (Assuming Normal Distribution)		
Median	0.125	Student's-t UCL	0.494158	
Standard Deviation	0.457985			
Variance	0.209751	Gamma Distribution Test		
Coefficient of Variation	1.241773	A-D Test Statistic	7.157317	
Skewness	1.664827	A-D 5% Critical Value	0.775349	
Gamma Statistics		K-S Test Statistic	0.389941	
k hat	1.095156	K-S 5% Critical Value	0.147126	
k star (bias corrected)	1.02624	Data do not follow gamma distribution at 5% significance level		
Theta hat	0.33677			
Theta star	0.359385	95% UCLs (Assuming Gamma Distribution)		
nu hat	83.23186	Approximate Gamma UCL	0.4905	
nu star	77.99426	Adjusted Gamma UCL	0.496384	
Approx. Chi Square Value (.05)	58.64529			
Adjusted Level of Significance	0.0434	Lognormal Distribution Test		
Adjusted Chi Square Value	57.95013	Shapiro-Wilk Test Statistic	0.62524	
Log-transformed Statistics		Shapiro-Wilk 5% Critical Value	0.938	
Minimum of log data	-2.079442	Data not lognormal at 5% significance level		
Maximum of log data	0.470004	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	-1.519075	95% H-UCL	0.468956	
Standard Deviation of log data	0.914183	95% Chebyshev (MVUE) UCL	0.568887	
Variance of log data	0.83573	97.5% Chebyshev (MVUE) UCL	0.673346	
		99% Chebyshev (MVUE) UCL	0.878535	
		95% Non-parametric UCLs		
		CLT UCL	0.49102	
		Adj-CLT UCL (Adjusted for skewness)	0.51246	
		Mod-t UCL (Adjusted for skewness)	0.497503	
		Jackknife UCL	0.494158	
		Standard Bootstrap UCL	0.484584	
		Bootstrap-t UCL	0.52271	
RECOMMENDATION		Hall's Bootstrap UCL	0.494145	
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.497895	
		BCA Bootstrap UCL	0.516579	
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.69266	
		97.5% Chebyshev (Mean, Sd) UCL	0.832788	
		99% Chebyshev (Mean, Sd) UCL	1.108042	

General Statistics

Data File		Variable:	Copper	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	34	Shapiro-Wilk Test Statistic	0.890546	
Number of Unique Samples	32	Shapiro-Wilk 5% Critical Value	0.933	
Minimum	8.3	Data not normal at 5% significance level		
Maximum	29.7			
Mean	14.68824	95% UCL (Assuming Normal Distribution)		
Median	13.25	Student's-t UCL	16.20753	
Standard Deviation	5.234661			
Variance	27.40168	Gamma Distribution Test		
Coefficient of Variation	0.356385	A-D Test Statistic	0.613213	
Skewness	1.183245	A-D 5% Critical Value	0.747915	
		K-S Test Statistic	0.127716	
Gamma Statistics		K-S 5% Critical Value	0.150954	
k hat	9.262093	Data follow gamma distribution		
k star (bias corrected)	8.464457	at 5% significance level		
Theta hat	1.585844			
Theta star	1.735284	95% UCLs (Assuming Gamma Distribution)		
nu hat	629.8223	Approximate Gamma UCL	16.22944	
nu star	575.5831	Adjusted Gamma UCL	16.30968	
Approx. Chi Square Value (.05)	520.9237			
Adjusted Level of Significance	0.0422	Lognormal Distribution Test		
Adjusted Chi Square Value	518.3609	Shapiro-Wilk Test Statistic	0.954884	
		Shapiro-Wilk 5% Critical Value	0.933	
Log-transformed Statistics		Data are lognormal at 5% significance level		
Minimum of log data	2.116256			
Maximum of log data	3.391147	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	2.632093	95% H-UCL	16.27621	
Standard Deviation of log data	0.329188	95% Chebyshev (MVUE) UCL	18.33204	
Variance of log data	0.108365	97.5% Chebyshev (MVUE) UCL	19.92422	
		99% Chebyshev (MVUE) UCL	23.05177	
		95% Non-parametric UCLs		
		CLT UCL	16.16488	
		Adj-CLT UCL (Adjusted for skewness)	16.35954	
		Mod-t UCL (Adjusted for skewness)	16.23789	
		Jackknife UCL	16.20753	
		Standard Bootstrap UCL	16.16708	
		Bootstrap-t UCL	16.41822	
RECOMMENDATION		Hall's Bootstrap UCL	16.47813	
Data follow gamma distribution (0.05)		Percentile Bootstrap UCL	16.22059	
		BCA Bootstrap UCL	16.36471	
Use Approximate Gamma UCL		95% Chebyshev (Mean, Sd) UCL	18.60138	
		97.5% Chebyshev (Mean, Sd) UCL	20.2946	
		99% Chebyshev (Mean, Sd) UCL	23.62061	

General Statistics

Data File			Variable: Lead	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	40	Shapiro-Wilk Test Statistic	0.521244	
Number of Unique Samples	22	Shapiro-Wilk 5% Critical Value	0.94	
Minimum	1.25	Data not normal at 5% significance level		
Maximum	213			
Mean	19.25625	95% UCL (Assuming Normal Distribution)		
Median	5	Student's-t UCL	28.90522	
Standard Deviation	36.21959			
Variance	1311.859	Gamma Distribution Test		
Coefficient of Variation	1.880926	A-D Test Statistic	1.772961	
Skewness	4.225307	A-D 5% Critical Value	0.804079	
		K-S Test Statistic	0.176298	
Gamma Statistics		K-S 5% Critical Value	0.146574	
k hat	0.594096	Data do not follow gamma distribution at 5% significance level		
k star (bias corrected)	0.566205			
Theta hat	32.4127			
Theta star	34.00931	95% UCLs (Assuming Gamma Distribution)		
nu hat	47.52767	Approximate Gamma UCL	28.26939	
nu star	45.29643	Adjusted Gamma UCL	28.68537	
Approx. Chi Square Value (.05)	30.85455			
Adjusted Level of Significance	0.044	Lognormal Distribution Test		
Adjusted Chi Square Value	30.40711	Shapiro-Wilk Test Statistic	0.892461	
		Shapiro-Wilk 5% Critical Value	0.94	
Log-transformed Statistics		Data not lognormal at 5% significance level		
Minimum of log data	0.223144			
Maximum of log data	5.361292	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	1.916287	95% H-UCL	39.49747	
Standard Deviation of log data	1.463515	95% Chebyshev (MVUE) UCL	43.36413	
Variance of log data	2.141877	97.5% Chebyshev (MVUE) UCL	53.98013	
		99% Chebyshev (MVUE) UCL	74.83319	
		95% Non-parametric UCLs		
		CLT UCL	28.67603	
		Adj-CLT UCL (Adjusted for skewness)	32.76414	
		Mod-t UCL (Adjusted for skewness)	29.54289	
		Jackknife UCL	28.90522	
		Standard Bootstrap UCL	28.52004	
		Bootstrap-t UCL	38.72828	
RECOMMENDATION		Hall's Bootstrap UCL	66.20783	
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	29.7875	
		BCA Bootstrap UCL	33.85125	
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	44.21888	
		97.5% Chebyshev (Mean, Sd) UCL	55.02023	
		99% Chebyshev (Mean, Sd) UCL	76.23739	

General Statistics

Data File			Variable: Mercury	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	34	Shapiro-Wilk Test Statistic	0.530898	
Number of Unique Samples	6	Shapiro-Wilk 5% Critical Value	0.933	
Minimum	0.02	Data not normal at 5% significance level		
Maximum	0.5			
Mean	0.122059	95% UCL (Assuming Normal Distribution)		
Median	0.03	Student's-t UCL	0.174544	
Standard Deviation	0.180836			
Variance	0.032702	Gamma Distribution Test		
Coefficient of Variation	1.481549	A-D Test Statistic	6.931624	
Skewness	1.663221	A-D 5% Critical Value	0.787022	
		K-S Test Statistic	0.426961	
Gamma Statistics		K-S 5% Critical Value	0.156811	
k hat	0.764121	Data do not follow gamma distribution		
k star (bias corrected)	0.716307	at 5% significance level		
Theta hat	0.159737			
Theta star	0.1704	95% UCLs (Assuming Gamma Distribution)		
nu hat	51.96025	Approximate Gamma UCL	0.176498	
nu star	48.70886	Adjusted Gamma UCL	0.1798	
Approx. Chi Square Value (.05)	33.68512			
Adjusted Level of Significance	0.0422	Lognormal Distribution Test		
Adjusted Chi Square Value	33.06649	Shapiro-Wilk Test Statistic	0.615933	
		Shapiro-Wilk 5% Critical Value	0.933	
Log-transformed Statistics		Data not lognormal at 5% significance level		
Minimum of log data	-3.912023			
Maximum of log data	-0.693147	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	-2.884709	95% H-UCL	0.169751	
Standard Deviation of log data	1.112955	95% Chebyshev (MVUE) UCL	0.200415	
Variance of log data	1.238668	97.5% Chebyshev (MVUE) UCL	0.24347	
		99% Chebyshev (MVUE) UCL	0.328042	
		95% Non-parametric UCLs		
		CLT UCL	0.173071	
		Adj-CLT UCL (Adjusted for skewness)	0.182523	
		Mod-t UCL (Adjusted for skewness)	0.176019	
		Jackknife UCL	0.174544	
		Standard Bootstrap UCL	0.172418	
		Bootstrap-t UCL	0.195647	
RECOMMENDATION		Hall's Bootstrap UCL	0.171769	
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.172941	
		BCA Bootstrap UCL	0.182647	
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.257242	
		97.5% Chebyshev (Mean, Sd) UCL	0.315736	
		99% Chebyshev (Mean, Sd) UCL	0.430636	

General Statistics

Data File		Variable:	Thallium	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	34	Shapiro-Wilk Test Statistic	0.175483	
Number of Unique Samples	2	Shapiro-Wilk 5% Critical Value	0.933	
Minimum	2.5	Data not normal at 5% significance level		
Maximum	25			
Mean	3.161765	95% UCL (Assuming Normal Distribution)		
Median	2.5	Student's-t UCL	4.281709	
Standard Deviation	3.858718			
Variance	14.88971	Gamma Distribution Test		
Coefficient of Variation	1.220432	A-D Test Statistic	12.88872	
Skewness	5.830952	A-D 5% Critical Value	0.753207	
		K-S Test Statistic	0.553211	
Gamma Statistics		K-S 5% Critical Value	0.151906	
k hat	3.148762	Data do not follow gamma distribution		
k star (bias corrected)	2.890538	at 5% significance level		
Theta hat	1.004129			
Theta star	1.093832	95% UCLs (Assuming Gamma Distribution)		
nu hat	214.1158	Approximate Gamma UCL	3.763868	
nu star	196.5566	Adjusted Gamma UCL	3.796581	
Approx. Chi Square Value (.05)	165.1136			
Adjusted Level of Significance	0.0422	Lognormal Distribution Test		
Adjusted Chi Square Value	163.6909	Shapiro-Wilk Test Statistic	0.175483	
		Shapiro-Wilk 5% Critical Value	0.933	
Log-transformed Statistics		Data not lognormal at 5% significance level		
Minimum of log data	0.916291			
Maximum of log data	3.218876	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	0.984014	95% H-UCL	3.283432	
Standard Deviation of log data	0.39489	95% Chebyshev (MVUE) UCL	3.761517	
Variance of log data	0.155938	97.5% Chebyshev (MVUE) UCL	4.140784	
		99% Chebyshev (MVUE) UCL	4.885781	
		95% Non-parametric UCLs		
		CLT UCL	4.250271	
		Adj-CLT UCL (Adjusted for skewness)	4.957376	
		Mod-t UCL (Adjusted for skewness)	4.392003	
		Jackknife UCL	4.281709	
		Standard Bootstrap UCL	N/R	
		Bootstrap-t UCL	N/R	
RECOMMENDATION		Hall's Bootstrap UCL	N/A	
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	N/R	
		BCA Bootstrap UCL	N/R	
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	6.04633	
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	7.294484	
		99% Chebyshev (Mean, Sd) UCL	9.74624	

General Statistics

Data File			Variable: Zinc	
Raw Statistics		Normal Distribution Test		
Number of Valid Samples	37	Shapiro-Wilk Test Statistic	0.82641	
Number of Unique Samples	34	Shapiro-Wilk 5% Critical Value	0.936	
Minimum	11.7	Data not normal at 5% significance level		
Maximum	134			
Mean	40.17297	95% UCL (Assuming Normal Distribution)		
Median	34.3	Student's-t UCL	47.19722	
Standard Deviation	25.30764			
Variance	640.4765	Gamma Distribution Test		
Coefficient of Variation	0.629967	A-D Test Statistic	0.776503	
Skewness	1.852861	A-D 5% Critical Value	0.753554	
		K-S Test Statistic	0.169527	
Gamma Statistics		K-S 5% Critical Value	0.145866	
k hat	3.35027	Data do not follow gamma distribution		
k star (bias corrected)	3.096645	at 5% significance level		
Theta hat	11.99096			
Theta star	12.97306	95% UCLs (Assuming Gamma Distribution)		
nu hat	247.92	Approximate Gamma UCL	47.18336	
nu star	229.1517	Adjusted Gamma UCL	47.51477	
Approx.Chi Square Value (.05)	195.1049			
Adjusted Level of Significance	0.0431	Lognormal Distribution Test		
Adjusted Chi Square Value	193.7441	Shapiro-Wilk Test Statistic	0.964215	
		Shapiro-Wilk 5% Critical Value	0.936	
Log-transformed Statistics		Data are lognormal at 5% significance level		
Minimum of log data	2.459589			
Maximum of log data	4.89784	95% UCLs (Assuming Lognormal Distribution)		
Mean of log data	3.536592	95% H-UCL	47.85498	
Standard Deviation of log data	0.551625	95% Chebyshev (MVUE) UCL	56.43168	
Variance of log data	0.30429	97.5% Chebyshev (MVUE) UCL	63.62499	
		99% Chebyshev (MVUE) UCL	77.75487	
		95% Non-parametric UCLs		
		CLT UCL	47.01647	
		Adj-CLT UCL (Adjusted for skewness)	48.37064	
		Mod-t UCL (Adjusted for skewness)	47.40844	
		Jackknife UCL	47.19722	
		Standard Bootstrap UCL	46.84091	
		Bootstrap-t UCL	49.10872	
RECOMMENDATION		Hall's Bootstrap UCL	50.57891	
Data are lognormal (0.05)		Percentile Bootstrap UCL	47.31622	
		BCA Bootstrap UCL	48.45405	
Use H-UCL		95% Chebyshev (Mean, Sd) UCL	58.30839	
		97.5% Chebyshev (Mean, Sd) UCL	66.1556	
		99% Chebyshev (Mean, Sd) UCL	81.56992	

APPENDIX E

**BACKGROUND SCREENING OF
INORGANIC CHEMICALS OF POTENTIAL CONCERN**

**BACKGROUND METALS CONCENTRATION
LOS ANGELES COUNTY
DEPARTMENT OF THE AGRICULTURAL COMMISSIONER
8841 EAST SLAUSON AVENUE, PICO RIVERA, CALIFORNIA**

As in the case for organics, there had to be at least one unqualified detection for an inorganic to be considered a possible COPC. It should be noted that only a subset of the CAM 17 metals was analyzed for based on site history. There was no reason to expect other CAM 17 metals to be present on the site based on past site uses. In the next screening step, the site ProUCL recommended UCL was compared to the corresponding value for background. Inorganic chemicals were included if the COPCs UCL value from the Project Site was greater than the corresponding background value. Background soil samples were collected in July 2004 for this purpose from an on-site area near the northern property boundary that was not historically used for operations (SCS, 2005). If chemicals are not screened out at this step, they were further evaluated and screened out by comparing the sample median concentration to the background mean concentration using the Mann-Whitney (Wilcoxon) W Test. For a given inorganic compound, if there is a statistically significant difference between the medians at a 95% confidence level, the inorganic was considered a COPC and evaluated in the HRA. These steps are consistent with DTSC guidance “*Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities*” (DTSC, 1997). The following inorganic chemicals were eliminated from further evaluation from the HRA: arsenic, copper, mercury, and zinc. The following inorganic chemicals were included in the HRA: cadmium and lead.

Background metals concentrations used to identify inorganic chemical of potential concern are presented within this Appendix. Table E-1 shows a summary of analytical results for background metals samples. Table E-2 presents a summary of analytical results for site metals samples. A comparison of site and background metals concentrations is presented in Table E-3. Comparisons of site medians using the Mann-Whitney (Wilcoxon) W Test is presented in Table E-4.

TABLE E-1.
BACKGROUND METALS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Sample ID	Sample Depth	Date Collected	Arsenic	Cadmium	Copper	Lead	Mercury	Thallium	Zinc
	(feet bgs)		(mg/kg)						
BH-15-1	1	7/22/2004	4.20	<0.1	16.90	3.60	<0.1	<0.5	59.3
BH-15-2.5	2.5	7/22/2004	3.24	<0.1	6.90	1.60	<0.1	<0.5	22.9
BH-15-5	5	7/22/2004	2.75	<0.1	5.70	1.35	<0.1	<0.5	20.4
BH-15-10	10	7/22/2004	3.75	<0.1	8.20	2.15	<0.1	<0.5	26.5
BH-16-1	1	7/22/2004	10.10	<0.1	12.90	5.45	<0.1	<0.5	42.4
BH-16-2.5	2.5	7/22/2004	3.55	<0.1	5.70	1.45	<0.1	<0.5	19.7
BH-16-5	5	7/22/2004	3.65	<0.1	6.50	1.50	<0.1	<0.5	22.0
BH-16-10	10	7/22/2004	3.10	<0.1	3.60	1.00	<0.1	<0.5	13.7
BH-17-1	1	7/22/2004	4.95	0.35	15.10	43.40	<0.1	<0.5	95.40
BH-17-2.5	2.5	7/22/2004	5.10	0.47	21.90	94.50	<0.1	<0.5	139
BH-17-5	5	7/22/2004	6.85	<0.1	6.30	1.35	<0.1	<0.5	20.70
BH-17-10	10	7/22/2004	3.45	<0.1	4.80	1.50	<0.1	<0.5	17.30
BH-18-1	1	7/22/2004	4.25	<0.1	16.10	3.60	<0.1	<0.5	47.5
BH-18-2.5	2.5	7/22/2004	3.20	<0.1	6.60	1.75	<0.1	<0.5	23.9
BH-18-5	5	7/22/2004	2.65	<0.1	3.80	0.90	<0.1	<0.5	14.3
BH-18-10	10	7/22/2004	2.99	<0.1	6.70	1.45	<0.1	<0.5	21.7
BH-19-1	1	7/22/2004		0.104	18.00	12.90	<0.1	<0.5	65.3
BH-19-2.5	2.5	7/22/2004	11.50	<0.1	11.70	2.35	<0.1	<0.5	33.7
BH-19-5	5	7/22/2004	7.95	<0.1	6.90	1.65	<0.1	<0.5	24.0
BH-19-10	10	7/22/2004	4.95	<0.1	5.80	1.50	<0.1	<0.5	20.7
BH-20-1	1	7/22/2004	4.95	0.200	13.00	46.50	<0.1	<0.5	92.5
BH-20-2.5	2.5	7/22/2004	4.90	0.250	19.10	68.50	<0.1	<0.5	125
BH-20-5	5	7/22/2004	3.25	<0.1	5.50	1.40	<0.1	<0.5	20.2
BH-20-10	10	7/22/2004	3.50	<0.1	5.80	1.40	<0.1	<0.5	19.5
# OF DETECTIONS			23	5	24	24	0	0	24
# OF SAMPLES			23	24	24	24	24	24	24
MAXIMUM DETECTION			11.5	0.47	21.9	94.5	0	0	139

**TABLE E-2.
SITE METALS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

Sample ID	Sample Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Thallium	Zinc
	(feet bgs)	(mg/kg)						
SS1-4-1	1							
SS2-4-1	1							
SS3-4-1	1	<5	<0.25	19.6	7.7	<0.06	<5	44.8
SS4-4-1	1	<5	<0.25	19	36.3	<0.06	<5	134
SS5-4-1	1							
SS6-4-1	1	<5	<0.25	19	18.1	<0.06	<5	66.5
SS7-4-1	1							
SS8-4-1	1							
SS9-4-1	1	<5	1.6	19.9	213	<0.06	<5	100
SS10-4-1	1	<5	<0.25	17.3	37.4	<0.06	<5	62.4
SS11-4-1	1							
SS12-4-1	1							
SS13-4-1	1	12.1	<0.25	29.7	7.8	<0.06	<5	51.9
SS14-4-1	1	<5	<0.25	13	65.9	<0.06	<5	36.5
SS15-4-1	1							
SS16-4-1	1	<5	<0.25	22.8	50.5	<0.06	<5	66.6
SS17-4-1	1	<5	<0.25	17	18.5	<0.06	<5	45.4
SS18-4-1	1	<5	0.54	27.7	61.8	0.07	<5	74.8
SS19-4-1	1							
SS20-4-1	1							
SS21-4-1	1							
SS22-4-1	1							
SS23-4-1	1							
SS24-4-1	1	<5	<0.25	14.3	48.6	<0.06	<5	52.6
SS25-4-1	1	<5	<0.25	17.2	48.4	<0.06	<5	66.3
BH1-4-1	1	<5	<0.25	13.5	<2.5	0.22	<5	24.6
BH2-4-1	1	<5	<0.25	10.5	<2.5	<0.06	<5	19.4
BH3-4-1	1	<5	<0.25	12.3	<2.5	<0.06	<5	26
SS4-4-3	3	<5	<0.25	13.7	16.3	0.08	<5	41.8
SS14-4-3	3	<5	<0.25	9.7	<2.5	0.07	<5	23.6
SS25-4-3	3	<5	<0.25	13.7	4.2	<0.06	<5	34
T2-4-3N	3	6.1	<2.5	19.2	15.9	<1	<5	37.4
ST-4-3	3							
SS4-5-3	3							50.7
SS4-5-3(D)	3							45.5
SS5-5-3	3							

**TABLE E-2.
SITE METALS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

Sample ID	Sample Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Thallium	Zinc
	(feet bgs)	(mg/kg)						
SS8-5-3	3							
SS9-5-3	3		<0.50		<10.0			
SS14-5-3	3				<10.0			
SS18-5-3	3		<0.50		<10.0			
T3-4-4W	4	<5	<2.5	15.1	17.1	<1	<5	42
BH1-4-5	5	<5	<0.25	11.1	<2.5	<0.06	<5	18.9
BH2-4-5	5	<5	<0.25	12.9	<2.5	<0.06	<5	23.5
BH3-4-5	5	<5	<0.25	10.6	<2.5	<0.06	<5	19.4
T1-4-5C	5	<5	<2.5	18.3	14.2	<1	<5	37.8
T5-4-5E	5	<5	<2.5	9	12.2	<1	<5	11.7
SS4-5-5	5							34.3
SS5-5-5	5							
SS8-5-5	5							
SS9-5-5	5		<0.50		<10.0			
SS14-5-5	5				<10.0			
SS18-5-5	5		<0.50		<10.0			
ST-4-6	6							
T3-4-8W	8	<5	<2.5	10	10	<1	<5	16.6
BH1-4-10	10	<5	<0.25	9.8	<2.5	<0.06	<5	19.7
BH2-4-10	10	<5	<0.25	11.9	<2.5	<0.06	<5	23.8
BH3-4-10	10	<5	<0.25	12.4	<2.5	<0.06	<5	19.4

**TABLE E-2.
SITE METALS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

Sample ID	Sample Depth	Arsenic	Cadmium	Copper	Lead	Mercury	Thallium	Zinc
	(feet bgs)	(mg/kg)						
BH4-4-10	10	5.9	<0.25	10.1	<2.5	<0.06	<5	24.7
BH5-4-10	10	5.3	<0.25	8.6	<2.5	<0.06	<5	23.7
BH6-4-10	10	<5	<0.25	8.3	<2.5	<0.06	<5	18.7
T1-4-10C	10	<5	<2.5	11.3	15.1	<1	<5	26
MW1S-5-10	10	<10.0	<0.50	10.9	<10.0	<0.040	<50.0	21.4
BH-21-1	1	3.65						
BH-21-2.5	2.5	4.1						
BH-21-5	5	2.15						
BH-21-10	10	3.6						
BH-22-1	1	4.65						
BH-22-2.5	2.5	3.45						
BH-22-5	5	5.9						
BH-22-10	10	3.3						
BH-23-1	1	6						
BH-23-2.5	2.5	7.3						
BH-23-5	5	3.3						
BH-23-10	10	3.75						
BH-24-1	1	7.45						
BH-24-2.5	2.5	6.9						
BH-24-5	5	7.35						
# OF DETECTIONS		19	2	34	20	4	0	37
# OF SAMPLES		49	38	34	40	34	34	37
MAXIMUM DETECTION		12.1	1.6	29.7	213	0.22	0	134

TABLE E-3.
STATISTICAL SUMMARY TABLE - BACKGROUND METALS IN SOIL - 0 - 10 FEET SOIL DEPTH
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Chemical	Frequency of Detection			Maximum Detected Concentration	Minimum Concentration	Sample Statistics ¹				Exposure Point Concentration (EPC)
	# of Detections	# of Samples	Frequency of Detection			Mean Concentration	Standard Deviation	Data Distribution ²	ProUCL Recommended UCL ²	
mg/kg										
Metals										
Arsenic	23	23	100%	1.15E+01	2.65E+00	4.73E+00	2.31E+00	Non-Parametric	5.56E+00	1.15E+01
Cadmium	5	24	20.8%	4.70E-01	5.00E-02	9.68E-02	1.10E-01	Non-Parametric	1.95E-01	4.70E-01
Copper	24	24	100%	2.19E+01	3.60E+00	9.73E+00	5.47E+00	Non-Parametric	1.46E+01	1.46E+01
Lead	24	24	100%	9.45E+01	9.00E-01	1.26E+01	2.48E+01	Non-Parametric	6.29E+01	6.29E+01
Mercury	0	24	0%	0.00E+00	5.00E-02	5.00E-02	0.00E+00	Non-Parametric	NA	NA
Thallium	0	24	0.0%	0.00E+00	2.50E-01	2.50E-01	0.00E+00	Non-Parametric	NA	NA
Zinc	24	24	100%	1.39E+02	1.37E+01	4.20E+01	3.60E+01	Non-Parametric	7.40E+01	7.40E+01

Notes:

¹ 1/2 detection limit values used for analytical results below detection limits.

²ProUCL statistical output sheets are available in Appendix D.

**TABLE E-4.
COMPARISON OF BACKGROUND AND SITE METALS CONCENTRATIONS
LOS ANGELES DEPARTMENT OF AGRICULTURAL COMMISSIONER
WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

Metal	Site UCL¹ 0-10 Foot Interval (mg/kg)	Background UCL¹ (mg/kg)	Is Site Metals UCL Value Greater Than Background Metals UCL Value?
Arsenic	4.1	5.6	No
Cadmium	0.7	0.2	YES
Copper	16.2	14.6	YES
Lead	76.2	62.9	YES
Mercury	0.4	NA	YES
Thallium	NA	NA	No
Zinc	47.9	74.0	No

Notes:

ND = Not detected

¹UCL is USEPA ProUCL recommended UCL. See Appendix B, Table B-1 for Site Metals UCLs.

See Table C-3 for Background Metals UCLs.

**TABLE E-5.
COMPARISON OF SITE AND BACKGROUND INORGANICS USING
MANN-WHITNEY (WILCOXON) W TEST
DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

TABLE C-1.		Copper		Mercury	
Site Metals	Background Metals	Site Metals	Background Metals	Site Metals	Background Metals
0.125	2.5	19.6	19.6	0.03	0.03
0.125	2.5	19	19	0.03	0.03
0.125	2.5	19	19	0.03	0.03
1.6	2.5	19.9	19.9	0.03	0.03
0.125	2.5	17.3	17.3	0.03	0.03
0.125	12.1	29.7	29.7	0.03	0.03
0.125	2.5	13	13	0.03	0.03
0.125	2.5	22.8	22.8	0.03	0.03
0.125	2.5	17	17	0.03	0.03
0.54	2.5	27.7	27.7	0.07	0.07
0.125	2.5	14.3	14.3	0.03	0.03
0.125	2.5	17.2	17.2	0.03	0.03
0.125	2.5	13.5	13.5	0.22	0.22
0.125	2.5	10.5	10.5	0.03	0.03
0.125	2.5	12.3	12.3	0.03	0.03
0.125	2.5	13.7	13.7	0.08	0.08
0.125	2.5	9.7	9.7	0.07	0.07
0.125	2.5	13.7	13.7	0.03	0.03
1.25	6.1	19.2	19.2	0.5	0.5
0.25	2.5	15.1	15.1	0.5	0.5
0.25	2.5	11.1	11.1	0.03	0.03
1.25	2.5	12.9	12.9	0.03	0.03
0.125	2.5	10.6	10.6	0.03	0.03
0.125	2.5	18.3	18.3	0.5	0.5
0.125	2.5	9	9	0.5	0.5
1.25	2.5	10	10	0.5	0.5
1.25	13.2	9.8	8.5	0.03	0.5
0.25	30.2	11.9	92.3	0.03	0.5
0.25	2.5	12.4	9.8	0.03	0.03
1.25	2.5	10.1	11.9	0.03	0.03
0.125	2.5	8.6	12.4	0.03	0.03
0.125	5.9	8.3	10.1	0.03	0.03
0.125	5.3	11.3	8.6	0.5	0.03
0.125	2.5	10.9	8.3	0.02	0.03
0.125	2.5		11.3		0.5
0.125	5		10.9		0.02
1.25	3.65				
0.25	4.1				
	2.15				
	3.6				
	4.65				
	3.45				
	5.9				
	3.3				
	6				
	7.3				
	3.3				
	3.75				
	7.45				
	6.9				
	7.35				
Comparison of Medians Median of sample 1: 0.125 Median of sample 2: 2.5 Mann-Whitney (Wilcoxon) W test Average rank of sample 1: 19.5 Average rank of sample 2: 64.0 W = 1938.0 P-value = 0.0 Since the P-value is less than 0.05, there is a statistically significant difference between the medians at the 95.0% confidence level.		Comparison of Medians Median of sample 1: 13.25 Median of sample 2: 13.25 Mann-Whitney (Wilcoxon) W test Average rank of sample 1: 35.4706 Average rank of sample 2: 35.5278 W = 613.0 P-value = 0.995304 Since the P-value is less than 0.05, there is NOT a statistically significant difference between the medians at the 95.0% confidence level.		Comparison of Medians Median of sample 1: 0.03 Median of sample 2: 0.03 Mann-Whitney (Wilcoxon) W test Average rank of sample 1: 34.6765 Average rank of sample 2: 36.2778 W = 640.0 P-value = 0.70096 Since the P-value is less than 0.05, there is NOT a statistically significant difference between the medians at the 95.0% confidence level.	

APPENDIX F
JOHNSON-ETTINGER MODELING RESULTS

APPENDIX F
DOCUMENTATION FOR JOHNSON & ETTINGER MODEL

When buildings are constructed over soil containing volatile chemicals, there is some risk of vapor intrusion into the overlying structure. Vapors may enter the building through cracks in the foundation slab. When this occurs, individuals within the building may breathe the vapors. The DTSC version of the Johnson and Ettinger vapor intrusion model (Soil Screening Model modified April 18, 2003 [J&E Model]) was used to estimate risks due to air contaminants within the proposed facility. The following parameters were used in the JE Model:

- **Soil Temperature**

This is based on DTSC recommendation and guidance.

- **Depth below grade to top of contamination**

The depth below grade to top of contamination was assumed to be 5 feet (154.2 cm). This is based on the sample depth at which toluene was detected.

- **Soil Type Used in Model Runs**

Soil type (Stratum A, B, C SCS soil type) used in the model was silt (S). This is based on boring logs created during the drilling of soil borings created during the drilling of soil borings at the site.

- **Exposure Duration**

Exposure duration was assumed to be 24 years for the adult residential receptor, and 6 years for the child residential receptor.

TABLE F-1.
NON-DEFAULT PARAMETERS USED IN JOHNSON AND ETTINGER MODEL
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHT AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Model default parameters for the DTSC Johnson and Ettinger (J&E) Model were used with the exception of the following:

Parameter	Abbreviation (units)	J&E Model Default	Assumption Used	
			Adult Resident	Child Resident
Average soil temperature	T _s (°C)	20	20	20
Soil gas sampling depth below grade	L _s (cm)	100	152.4	152.4
Soil Stratum A, B, C	(soil type)	S	S	S
Exposure duration	ED (years)	30	24	6

Notes:

DTSC, 2003. Johnson and Ettinger Soil Model (SL-SCREEN), Version 2.3; 03/01; DTSC/HERD 4.18.2003

1. Depth below grade to bottom of enclosed space floor was assumed to be 15 cm.
2. Average soil temperature is consistent with DTSC recommendations.
3. Soil type (Stratum A, B, C SCS soil type) used in model was sand (S). This is based on boring logs created during the drilling of soil borings created during the drilling of soil borings at the site.
4. The exposure duration is based on the length of time an adult and child are expected to reside at a residence.

TABLE F-2.
JOHNSON & ETTINGER MODELING RESULTS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Substance	Concentration from Bulk Soil	Infinite Source Building Concentration	Carcinogenic Risk	Hazard Quotient
	ug/kg	($\mu\text{g}/\text{m}^3$)		
Toluene	1.50E+01	3.06E+00	NA	9.77E-03

Notes:

Results from DTSC, 2003. Johnson and Ettinger Soil Model (SL-SCREEN), Version 2.3;-03/01; DTSC/HERD 4.18.2003

JE Model Results for Toluene

DATA ENTRY SHEET

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

OR

SL-SCREEN
Version 2.3; 03/01

DTSC/HERD 4.18.2003

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial soil conc., C_R ($\mu\text{g}/\text{kg}$)	Chemical
108883	1.50E+01	Toluene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.3	20	S		

MORE
↓

ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)
1.5	0.43	0.15	0.002

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	30	30	350	1.0E-06	1

END

Used to calculate risk-based
soil concentration.

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^\circ\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^\circ\text{K}$)	Critical temperature, T_C ($^\circ\text{K}$)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Physical state at soil temperature, (S,L,G)
8.70E-02	8.60E-06	6.63E-03	25	7,930	383.78	591.79	1.82E+02	5.26E+02	0.0E+00	3.0E-01	9.2E+01

END

INTERMEDIATE CALCULATIONS SHEET

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^v (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{ie} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor- wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R ($\mu\text{g}/\text{kg}$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.3	0.280	0.257	1.01E-07	0.703	7.10E-08	3,844	1.50E+01	5.63E+04

Area of enclosed space below grade, A_B (cm^2)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm- m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm^2/s)	Diffusion path length, L_d (cm)
9.24E+05	4.16E-04	15	9,045	5.11E-03	2.12E-01	1.78E-04	6.79E-03	137.3

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	3.64E-01	6.33E+03	0.10	6.74E+01	6.79E-03	3.84E+02	2.67E+168	4.83E-04	3.06E+00

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)
NA	3.0E-01

END

RESULTS SHEET

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C _{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	NA	NA	2.65E+05	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	9.8E-03

MESSAGE SUMMARY BELOW:

END

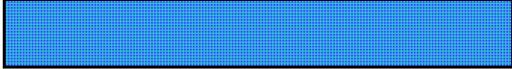
APPENDIX G

LEAD RISK ASSESSMENT
MODELING RESULTS
(DTSC Leadsread and USEPA Adult Lead Methodology)

TABLE G-1.
ON-SITE LEAD EXPOSURE
CONSTRUCTION WORKER RECEPTOR
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee



Version date 05/19/03

Exposure Variable	PbB Equation ¹		Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario			
	1*	2**			Using Equation 1		Using Equation 2	
					GSDi = Hom	GSDi = Het	GSDi = Hom	GSDi = Het
PbS	X	X	Soil lead concentration	ug/g or ppm	76.2	76.2	76.2	76.2
R _{fetal/maternal}	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD _i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB ₀	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR _s	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.330	0.330	--	--
IR _{s,D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.330	0.330
W _s		X	Weighting factor; fraction of IR _{s,D} ingested as outdoor soil	--	--	--	1.0	1.0
K _{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
AF _{s,D}	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
EF _{s,D}	X	X	Exposure frequency (same for soil and dust)	days/yr	219	219	219	219
AT _{s,D}	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PbB_{adult}	PbB of adult worker, geometric mean			ug/dL	2.2	2.4	2.2	2.4
PbB_{fetal,0.95}	95th percentile PbB among fetuses of adult workers			ug/dL	6.8	8.6	6.8	8.6
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)			ug/dL	10.0	10.0	10.0	10.0
P(PbB_{fetal} > PbB_t)	Probability that fetal PbB > PbB_t, assuming lognormal distribution			%	1.5%	3.4%	1.5%	3.4%

¹ Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_s, K_{SD}).
 When IR_s = IR_{s,D} and W_s = 1.0, the equations yield the same PbB_{fetal,0.95}.

*Equation 1, based on Eq. 1, 2 in USEPA (1996).

PbB_{adult} =	$(PbS * BKSF * IR_{s,D} * AF_{s,D} * EF_{s,D} / AT_{s,D}) + PbB_0$
PbB_{fetal,0.95} =	$PbB_{adult} * (GSD_i^{1.645} * R)$

**Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).

PbB_{adult} =	$PbS * BKSF * ((IR_{s,D}) * AF_{s,D} * EF_{s,D} * W_s) + (K_{SD} * (IR_{s,D}) * (1 - W_s) * AF_{i,D} * EF_{i,D}) / 365 + PbB_0$
PbB_{fetal,0.95} =	$PbB_{adult} * (GSD_i^{1.645} * R)$

**TABLE G-2.
ON-SITE LEAD EXPOSURE
ADULT AND CHILD RESIDENTIAL RECEPTORS
LOS ANGELES COUNTY DEPARTMENT OF AGRICULTURAL COMMISSIONER / WEIGHTS AND MEASURES
8841 EAST SLAUSON AVENUE
PICO RIVERA, CALIFORNIA**

USER'S GUIDE to version 7

INPUT	
MEDIUM	LEVEL
Lead in Air (ug/m ³)	0.028
Lead in Soil/Dust (ug/g)	76.2
Lead in Water (ug/l)	15
% Home-grown Produce	0%
Respirable Dust (ug/m ³)	1.5

OUTPUT							
	Percentile Estimate of Blood Pb (ug/dl)					PRG-99	PRG-95
	50th	90th	95th	98th	99th	(ug/g)	(ug/g)
BLOOD Pb, ADULT	1.3	2.3	2.7	3.3	3.8	1235	1946
BLOOD Pb, CHILD	2.6	4.8	5.7	6.9	7.9	126	217
BLOOD Pb, PICA CHILD	2.6	4.8	5.7	6.9	7.9	126	217
BLOOD Pb, OCCUPATIONAL	1.1	2.0	2.3	2.8	3.2	NA	NA

EXPOSURE PARAMETERS			
	units	adults	children
Days per week	days/wk	7	
Days per week, occupational			
Geometric Standard Deviation		1.6	
Blood lead level of concern (ug/dl)		10	
Skin area, residential	cm ²	5700	2900
Skin area occupational	cm ²		
Soil adherence	ug/cm ²	70	200
Dermal uptake constant	(ug/dl)/(ug/day)	0.0001	
Soil ingestion	mg/day	100	200
Soil ingestion, pica	mg/day		200
Ingestion constant	(ug/dl)/(ug/day)	0.04	0.16
Bioavailability	unitless	0.44	
Breathing rate	m ³ /day	20	10
Inhalation constant	(ug/dl)/(ug/day)	0.08	0.192
Water ingestion	l/day	1.4	0.4
Food ingestion	kg/day	1.9	1.1
Lead in market basket	ug/kg	3.1	
Lead in home-grown produce	ug/kg	0.0	

PATHWAYS						
ADULTS	Residential			Occupational		
	Pathway contribution			Pathway contribution		
	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	3.8E-5	0.00	0%	0.0E+0	0.00	0%
Soil Ingestion	1.8E-3	0.13	11%	0.0E+0	0.00	0%
Inhalation, bkgrnd		0.05	4%		0.00	0%
Inhalation	2.5E-6	0.00	0%	0.0E+0	0.00	0%
Water Ingestion		0.84	67%		0.84	78%
Food Ingestion, bkgrnd		0.24	19%		0.24	22%
Food Ingestion	0.0E+0	0.00	0%			0%

CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	5.6E-5	0.00	0%		0.00	0%
Soil Ingestion	1.4E-2	1.07	41%	1.4E-2	1.07	41%
Inhalation	2.9E-6	0.00	0%		0.00	0%
Inhalation, bkgrnd		0.05	2%		0.05	2%
Water Ingestion		0.96	36%		0.96	36%
Food Ingestion, bkgrnd		0.55	21%		0.55	21%
Food Ingestion	0.0E+0	0.00	0%		0.00	0%

Notes:

NA = Not Applicable.