Appendix A

Technical Memorandum
Investigation and Evaluation of Organochlorine Pesticides at the Proposed Weemes Elementary School Playground Addition, Los Angeles, California

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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Technical Memorandum

Investigation and Evaluation of Organochlorine Pesticides Proposed Weemes Elementary School Playground Addition Los Angeles, California

Department of Toxic Substances Control
California Environmental Protection Agency

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TECHNICAL MEMORANDUM DTSC

Subject: Technical Memorandum for Evaluating Organochlorine Pesticides in Soil at the Proposed Weemes Elementary School Playground Addition-Los Angeles, California, as part of the DTSC Residential Pesticide Study

1.0 INTRODUCTION

This Technical Memorandum presents the results of an environmental investigation of organochlorine pesticides at a proposed school site in the Los Angeles Unified School District (LAUSD). The investigation was carried out by the State of California Department of Toxic Substances Control (DTSC), as a part of the U.S. EPA-funded Residential Pesticide Study to determine the prevalence of organochlorine pesticides in soils associated with historical termiticide applications, and whether they pose a threat to human health or the environment at residential properties proposed as school sites. The Residential Pesticide Study samples were collected by DTSC staff in conjunction with the Preliminary Environmental Assessment (PEA) investigation conducted by Hart Crowser, Inc. on behalf of LAUSD. This Technical Memorandum presents the findings of the DTSC investigation and conclusions based on a human health risk assessment for the proposed school site.

LAUSD voluntarily agreed to participate in the study to evaluate the residences at the Weemes Elementary School Playground Addition Site, located at 1201-1203, 1205, 1207 and 1215 West 37th, Los Angeles, California (Figure 1). Since around 1928, the approximately 0.64-acre site has consisted of four residential homes (and associated garages and sheds). The Weemes Elementary School is adjacent to the site, and the surrounding land use is residential.

1.1 Background

Chlordane was widely used throughout the United States as a termiticide until it was banned by the U.S. EPA in 1988. Based on historical information, chlordane was commercially applied using primarily two methods: 1) application onto surface soils around homes and in crawlspaces; and 2) injection into subsurface soils around home footings and foundations as a concentrated liquid barrier.

For proposed school sites, DTSC does not routinely evaluate residential properties for potential impacts from organochlorine pesticides. However, based on the widespread application of chlordane in and around homes; the potential unacceptable risks posed by residual chlordane and other pesticides in soil within residential subdivisions; the environmental persistence of chlorinated pesticides; and the lack of data on pesticide residues at residential and/or commercial properties, further investigation is warranted.

In order to evaluate the need for sampling and analysis of organochlorine pesticides at residential areas acquired for new school construction, DTSC is conducting a Residentail Pesticide Study and is collecting soil samples at selected residential areas for analysis of organochlorine pesticides at a State of California-certified contract laboratory. Under an unrestricted land use scenario, the results will be evaluated for potential human health risks and presented to the school district for further investigation or removal action if necessary. The overall findings of the DTSC study will be presented in a final report, along with the recommendation for or against region-wide organochlorine pesticide sampling at residential areas proposed for school development in southern California.

2.0 SAMPLING METHODS AND PROCEDURES

Samples were collected under a DTSC-prepared scope of work (DTSC 2002). A total of 47 soil samples, two field duplicate soil samples, and one equipment blank rinseate sample were collected for analysis of organochlorine pesticides using EPA Method 8081A. Hand auger soil sampling techniques were used to collect grab soil samples from the surface (0- to 0.5-feet), 2-feet, and 4-feet below ground surface (bgs). Samples were collected near the footings of the homes and three surface samples were collected in crawl spaces. Sampling locations are shown in Figure 2.

2.1.1 Utility Clearance

Prior to field activities, Underground Service Alert (USA) was notified of intent to conduct subsurface investigations. All proposed locations were clearly marked with surveyor's flagging, as required by USA. USA contacted utility owners of record with the site vicinity and notified them of the subsurface investigation intent that may be in near buried utilities. Utility owners or their designated agent were responsible to clearly mark the position of their utilities on ground surface through out the area designated for investigation within the public right of way.

2.1.2 Soil Samples

Borings were advanced using hand auger techniques. Once the sample depth was reached, the hand auger was removed from the boring and grab samples were collected using disposable hand trowels and placed in pre-labeled glass jars. Upon completion of sampling, soil cuttings generated during hand augering were placed back into borings.

2.1.3 Sample Containers and Preservatives

Prior to sampling, Associated Laboratories, a State of California-certified contract laboratory in Orange, California, provided sample containers required for the specific analysis. Upon collection of soil samples, samples were placed in an insulated cooler at 4 °C and transported to the lab under chains of custody.

2.1.4 Sample Packaging and Shipment

To identify and manage samples obtained in the field, a sample label was affixed to each sample container. The sample labels included the following information:

- Site name
- Boring number
- Sample identification number
- Sampler's initials
- Date and time of collection

2.1.5 Sample Documentation

Field notes were taken to document where, when, how, and from whom any vital project information was obtained (Appendix A). Entries in the field notes include the following:

- Sample identification number
- Sample depth
- Sample time

- Sampler's initials
- General comments/observations

2.1.6 Geologic Soil Classification

All soil samples were classified by a DTSC Registered Geologist, in accordance with the United States Classification System. Generally, the samples were classified as fine-grained, composed predominantly of silt and clay. The surficial samples showed the most variability, primarily in the quantity of organic and anthropogenic material present. The 0.5 foot samples were predominantly sandy-clayey silts. Samples from the two and four foot depths were very homogenous, typically yellow brown silty clay. All but two of the samples were dry.

2.1.7 Chain-of-Custody (COC) Records

COC records were used to document sample collection and shipment history to the laboratory for analysis, copies of which are maintained on file at DTSC. A COC record accompanied all samples shipments for analyses.

2.1.8 Decontamination Procedures

All non-disposable equipment that came into contact with potentially contaminated soil or water was decontaminated consistently to assure the quality of samples collected. Disposable equipment intended for one time use was not decontaminated, but was packaged for appropriate disposal. After each boring location was sampled, equipment was decontaminated using a three-stage procedure as follows:

- Non-phosphate detergent and tap water wash, brush when necessary
- Initial deionized/distilled water rinse
- Final deionized/distilled water rinse

Equipment was decontaminated in a pre-designated area on plastic sheeting, and clean bulky equipment was stored on plastic sheeting in uncontaminated areas.

After all samples were collected and equipment was decontaminated, an equipment blank was collected. This procedure consisted of collecting a one-liter sample of the final deionized/distilled water rinseate as it was poured over a decontaminated hand auger. The sample was collected in a pre-labeled glass jar and placed in the cooler along with the soil samples for transport to the laboratory and analysis of organochlorine pesticides by EPA Method 8081A.

2.1.9 Investigative-Derived Waste Management

In the process of collecting environmental samples during the proposed field sampling program, different types of potentially contaminated investigation-derived wastes were generated, including the following:

- Used personal protective equipment (PPE)
- Disposable sampling equipment
- Soil cuttings
- Decontamination fluids

Sampling depths did not advance past four feet bgs. Soil cuttings were placed back in respective borings. Decontamination fluids were properly disposed of offsite. Disposable

sampling equipment and used PPE were double-bagged and placed in a municipal refuse receptacle. These wastes were not considered hazardous and were sent to a municipal landfill. Any PPE and disposable equipment that could potentially be reused were rendered inoperable before disposal in the refuse receptacle.

3.0 ANALYTICAL PROGRAM AND RESULTS

A total of 49 soil samples were collected, including quality control samples, and analyzed for organochlorine pesticides by EPA Method 8081A.

3.1.1 Analytical Results

The organochlorine pesticide (OCP) analytical results are summarized in Table 3-1 for each sample location. The raw analytical data are also provided in Appendix B.

The following pesticides were detected at least once in site soil samples:

- Chlordane (maximum concentration of 36 mg/kg)
- 4,4'-DDD (maximum concentration of 1.1 mg/kg)
- 4,4'-DDE (maximum concentration of 1.4 mg/kg)
- 4,4'-DDT (maximum concentration of 16 mg/kg)
- Dieldrin (maximum concentration of 2.72 mg/kg)
- Endosulfan I (maximum concentration of 0.6 mg/kg)
- Endrin (maximum concentration of 0.08 mg/kg)
- Endrin aldehyde (maximum concentration of 0.5 mg/kg)
- Heptachlor (maximum concentration of 0.5 mg/kg)
- Heptachlor epoxide (maximum concentration of 0.108 mg/kg)
- Lindane (maximum concentration of 0.089 mg/kg)

The highest concentration of each pesticide was detected in surface soil samples (0- to 0.5-feet bgs). Between 2- and 4-feet bgs, only low levels of chlordane, 4,4'-DDD, 4,4'-DDE and 4,4'-DDT were detected. In surface soil samples, chlordane and 4,4'-DDT were detected in each sample, at all four homes, including the three crawlspace samples (i.e., the detection frequency was 100-percent). The frequency of detection for OCPs in surface soil samples was as follows:

- Chlordane (18/18 or 100 percent)
- 4,4'-DDD (15/18 or 83 percent)
- 4,4'-DDE (16/18 or 89 percent)
- 4,4'-DDT (18/18 or 100 percent)
- Dieldrin (12/18 or 67 percent)
- Endosulfan I (1/18 or 6 percent)
- Endrin (1/18 or 6 percent)
- Endrin aldehyde (1/18 or 6 percent)
- Heptachlor (6/18 or 33 percent)
- Heptachlor epoxide (5/18 or 28 percent)
- Lindane (2/18 or 11 percent)

For subsurface soil samples collected at 2-feet bgs, the OCPs detected and the frequencies of detection were as follows:

- Chlordane (4/15 or 27 percent)
- 4,4'-DDD (3/15 or 20 percent)
- 4,4'-DDE (3/15 or 20 percent)
- 4,4'-DDT (5/15 or 33 percent)

For subsurface soil samples collected at 4-feet bgs, the OCPs detected and the frequencies of detection were as follows:

- Chlordane (4/14 or 29 percent)
- 4,4'-DDD (1/14 or 7 percent)
- 4,4'-DDE (1/14 or 7 percent)
- 4,4'-DDT (2/14 or 14 percent)

As can be seen from the above data, the OCPs detected, the reported soil concentration and the frequency of detection all substantially decrease with depth.

3.2 Data Validation

This section summarizes the findings for data validation of laboratory analysis pursuant to the U.S. EPA National Functional Guidelines for Laboratory Data Review (U.S. EPA 2001).

3.2.1 Documentation

All samples were properly recorded on COC Records. All COC Records were properly signed. The last sample collected was logged 11:20 a.m. on June 21, 2002. All samples were received by the laboratory at 2:30 p.m. on the same day. No data was qualified based on errors in documentation.

3.2.2 Timeliness

All samples were received by the laboratory and analyzed within established holding times.

3.2.3 Initial Calibration and Continuing Calibration

Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and producing a linear calibration curve. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day to day basis. Initial calibration criteria were met for all analytes. Initial and continuing calibration check samples were run at the required frequency. All results were within required limits.

3.2.4 Method Blanks

The purpose of the laboratory method (or field) blank analysis is to determine the existence and magnitude of contamination resulting from laboratory (or field) activities. Method blanks were run at the required frequency. All criteria were met for each target compound.

3.2.5 Laboratory Control Samples

The laboratory control sample (LCS) provides a measure of the accuracy of analytical results. This is accomplished by adding a known amount of a substance to a previously analyzed sample. The accuracy is measured by comparing the measured increase in the

sample result to the known spiked amount. LCS were run at the required frequency. All criteria were met for each target compound.

3.2.6 Quality Control Samples

The matrix spike duplicates (MSD) for heptachlor, aldrin and DDT were outside control limits in QC sample WEM-R because the MSD extract was allowed to go to dryness during solvent exchange (preparation error). Surrogate recoveries were outside control limits for WEM02-0.5, WEM03-0.5, WEM4-0.5, WEM06-0.5, WEM05-0.5, WEM08-0.5, WEM9-0.5, WEM10-0.5, WEM12-0.5, and WEMR due to matrix interference. No corrective action was taken. All LCS and method blanks were within control limits. Furthermore, the bulk of the MS/MSD and surrogate recoveries were within acceptable limits.

3.2.8 Field and Quality Control Sample Raw Data Review

The raw data for five samples, WEM9-2, WEM12-4, WEM9-2, WEM19-0.5, and WEM17-0.5, (10% of the total number of samples) were reviewed. The internal standards recoveries, retention times, and area counts were within acceptable limits.

3.2.11 Data Assessment

Based on the above results, the data was acceptable for intended use.

4.0 HUMAN HEALTH SCREENING EVALUATION

This section presents the Human Health Screening Evaluation for organochlorine pesticides detected in soil. The human health screening evaluation utilizes maximum concentrations of identified chemicals of potential concern (COPCs) to estimate contaminant intakes through the ingestion, dermal contact and inhalation routes of exposure. These estimated chemical intakes are evaluated for potential carcinogenic risks and noncarcinogenic health hazards using health-based toxicity criteria developed by the EPA and State of California (Office of Environmental Health Hazard Assessment (OEHHA)). This human health screening evaluation is health-protective, in that residential (unrestricted) land use is considered, regardless of the current or future intended uses of the property.

4.1 Exposure Pathways and Media of Concern

This section discusses the conceptual site model (CSM) in light of existing contamination (i.e., COPCs), identifies the receptors of concern, and identifies all relevant potential exposure pathways

4.1.1 Conceptual Site Model

Consistent with PEA guidance for performing human health evaluations, it was assumed that the site was completely uncovered and that site soils were available for direct contact. In the future, children attending school at this site may be exposed to COPCs in soil through incidental ingestion, dermal contact, and inhalation of suspended soil particulates. Consistent with PEA guidance, health effects were conservatively evaluated for a residential receptor. Estimated carcinogenic risks were evaluated for a combined child and adult over an assumed 30-year exposure period. Noncarcinogenic health effects were evaluated for a child, since this is a sensitive receptor and would maximize potential exposures.

4.1.2 Soil Exposure Pathways

COPCs in soil include organochlorine pesticides. Lead was previously identified as a COPC on-site and was evaluated as part of the Preliminary Environmental Assessment (PEA) conducted for the site (Hart Crowser, 2002). Potential residential exposure to organochlorine pesticides was evaluated through incidental ingestion and dermal contact. Exposures by these two routes were estimated according to the following equations.

Intake of Soil Contaminants

Incidental Ingestion Intake (mg/kg-day) = $$\frac{C_s \times IngR \times EF \times ED \times CF_1}{BW \times AT}$$

Where,

C_s	=	Maximum reported COPC soil concentration, mg/kg
IngR	=	Adult soil ingestion rate, 100 mg/day (DTSC 1999)
	=	Child ingestion rate, 200 mg/day (DTSC 1999)
EF	=	Residential exposure frequency, 350 days/year (DTSC 1999)
ED	=	Adult exposure duration, 24 years (DTSC 1999)
	=	Child exposure duration, 6 years (DTSC 1999)
CF_1	=	Conversion factor, 1×10^{-6} kg/mg
BW	=	Adult body weight, 70 kg
	=	Child body weight, 15 kg
AT	=	Averaging time, days
	=	ED * 365 days/year for noncarcinogens
	=	70 years * 365 days/year for carcinogens

Dermal Contact Intake (mg/kg-day) = $$\frac{C_s \times SA \times AF \times CF_1 \times EF \times ED}{BW \times AT}$$

Where,

C_s	=	Maximum reported COPC soil concentration, mg/kg
SA	=	Adult skin surface area for exposure, 5700 cm^2 (DTSC 2000)
	=	Child skin surface area for exposure, 2900 cm^2 (DTSC 2000)
AF	=	Adult soil-to-skin adherence factor, 0.07 mg/cm^2 (DTSC 2000)
	=	Child soil-to-skin adherence factor, 0.2 mg/cm^2 (DTSC 2000)
CF_1	=	Conversion factor, 1×10^{-6} kg/mg
EF	=	Adult exposure frequency, 100 days/year (DTSC 2000)
	=	Child exposure frequency, 350 days/year (DTSC 2000)

ED	=	Adult exposure duration, 24 years (DTSC 1999)
	=	Child exposure duration, 6 years (DTSC 1999)
BW	=	Adult body weight, 70 kg
	=	Child body weight, 15 kg
AT	=	Averaging time, days
	=	ED * 365 days/year for noncarcinogens
	=	70 years * 365 days/year for carcinogens

4.1.3 Water Exposure Pathways

Groundwater impacts from the site are considered extremely unlikely and the groundwater pathway was not evaluated further in this human health screening assessment.

4.1.4 Air Exposure Pathways

Potential residential exposure to organochlorine pesticides detected in soil was evaluated for inhalation of suspended soil particulates. Exposure through the inhalation route was estimated according to the following equation:

Inhalation Intake (mg/kg-day) $= \dfrac{C_a \times InhR \times EF \times ED}{BW \times AT}$

Where,

C_a	=	Estimated COPC concentration in air, mg/m^3
InhR	=	Adult inhalation rate, 20 m^3/day (DTSC 1999)
	=	Child inhalation rate, 10 m^3/day (DTSC 1999)
EF	=	Residential exposure frequency, 350 days/year (DTSC 1999)
ED	=	Adult exposure duration, 24 years (DTSC 1999)
	=	Child exposure duration, 6 years (DTSC 1999)
BW	=	Adult body weight, 70 kg
	=	Child body weight, 15 kg
AT	=	Averaging time, days
	=	ED * 365 days/year for noncarcinogens
	=	70 years * 365 days/year for carcinogens

For inhalation of soil particulates, air concentrations were estimated using the EPA Particulate Emission Factor (PEF) approach, as documented in EPA's Soil Screening Guidance. The PEF is defined by the following equation:

$$PEF(m^3/kg) = Q/C \times \left(\frac{3{,}600 s/h}{0.036 \times (1 - V) \times (Um/Ut)^3 \times F(x)} \right)$$

Where,

Q/C = Inverse of mean concentration at the center of a 0.5-acre square source, 68.81 g/m^2-s per kg/m^3 (for the Los Angeles Area)

V = Fraction of vegetative cover (0.5 (50%), default value)

Um = Mean annual wind speed, 4.69 m/s, default

Ut = Equivalent threshold value of windspeed at 7 m, 11.32 m/s, default

F(x) = Function dependent on Um/Ut, 0.194 default

Based on the regional-specific Q/C for the Los Angeles area, the PEF was estimated to be 1.0E+09 m^3/kg. Then, the air concentration of suspended soil COPCs (mg/m^3) is equal to the maximum reported soil concentration (mg/kg) divided by the PEF (m^3/kg).

4.2 Exposure Concentrations and Chemicals

This section identifies the COPCs and estimates the concentration of each COPC, in each medium of concern (e.g., soil, air or water) to which receptors may be exposed.

The following pesticides were detected at least once in site soil samples:

- Chlordane (maximum concentration of 36 mg/kg)
- 4,4'-DDD (maximum concentration of 1.1 mg/kg)
- 4,4'-DDE (maximum concentration of 1.4 mg/kg)
- 4,4'-DDT (maximum concentration of 16 mg/kg)
- Dieldrin (maximum concentration of 2.72 mg/kg)
- Endosulfan I (maximum concentration of 0.6 mg/kg)
- Endrin (maximum concentration of 0.08 mg/kg)
- Endrin aldehyde (maximum concentration of 0.5 mg/kg)
- Heptachlor (maximum concentration of 0.5 mg/kg)
- Heptachlor epoxide (maximum concentration of 0.108 mg/kg)
- Lindane (maximum concentration of 0.089 mg/kg)

Table 4-1 presents a summary of the OCPs detected in surface (0- to 0.5-feet bgs) and subsurface (2- and 4-feet bgs) soil samples. The highest concentration of each pesticide was detected in surface soil samples. Between 2- and 4-feet bgs, only low levels of chlordane, 4,4'-DDD, 4,4'-DDE and 4,4'-DDT were detected. For the purposes of this human health screening evaluation, potential carcinogenic risks and noncarcinogenic health hazards were estimated 1) for surface soils using the maximum reported soil concentrations detected on-site; and 2) for subsurface soils between 2- and 4-feet bgs, in order to assist decision-makers regarding the depth of future soil removal.

4.3 Toxicity Values

This section describes the process of characterizing the relationship between the exposure to an agent and the incidence of adverse health effects in exposed populations. In a quantitative carcinogenic risk assessment, the dose-response relationship of a carcinogen is expressed in terms of a slope factor (oral) or unit risk (inhalation), which are used to estimate the probability of risk of cancer associated with a given exposure pathway. Cancer slope

factors and unit risk factors as published by Cal-EPA (05/2002) and EPA (Integrated Risk Information System (IRIS)) were used in this human health risk assessment.

For noncarcinogenic effects, toxicity data developed from animal or human studies are typically used to develop noncancer acceptable levels, or reference doses (RfDs). A chronic reference dose is defined as an estimate of a daily exposure for the human population, including sensitive subpopulations, that is likely to be without appreciable risk of deleterious effects during a lifetime. The oral chronic reference doses, as published in IRIS or EPA's Health Effects Assessment Summary Tables (HEAST), were used in this evaluation. Inhalation reference doses were calculated from the Cal/EPA Reference Exposure Levels (RELs), as published by the Office of Environmental Health Hazard Assessment (OEHHA, 2001). If an REL was unavailable for a particular chemical, the inhalation reference dose from IRIS or HEAST was used.

Table 4-2 summarizes the cancer slope factors, reference doses, and data source for each COPC evaluated in this human health screening evaluation.

4.4 Risk Characterization Summary

This section describes the approach used to assess the potential carcinogenic risk and noncarcinogenic health hazards for the populations of concern represented by the chemical contaminants in soil at the site. Potential carcinogenic effects were estimated from the predicted intakes and chemical-specific dose-response information. Potential noncarcinogenic effects were estimated by comparing the predicted intakes of COPCs to their respective toxicity criteria (i.e., inhalation reference doses (RfD_i)).

4.4.1 Noncarcinogenic Health Effects for Soil Contaminants

In order to estimate the potential effects from exposure to multiple COPCs, the hazard index (HI) approach was used. The HI is defined as the summation of the hazard quotients for each COPC, for each route of exposure, and is represented by the following equation:

$$HI = \frac{\text{Predicted Dose}_a}{RfD_a} + \frac{\text{Predicted Dose}_b}{RfD_b} + \ldots + \frac{\text{Predicted Dose}_i}{RfD_i}$$

A total HI less than or equal to unity is indicative of acceptable levels of exposure for chemicals assumed to exhibit additive health effects. To be truly additive in effect, chemicals must affect the same target organ system or result in the same critical toxic endpoint. A HI less than or equal to 1.0 suggests that adverse health effects would not be expected following a lifetime of exposure, even in sensitive members of the population.

4.4.2 Carcinogenic Health Effects for Soil Contaminants

Quantitative estimates of upper-bound incremental cancer risk due to site-related contamination were evaluated for each COPC according to the following equation:

$$R_i = Intake_i \times SF_i$$

Where,

R_i = Estimated incremental risk of cancer associated with the ith chemical

$Intake_i$ = Intake or lifetime average daily dose for the ith chemical, mg/kg-day

SF_i = Cancer slope factor for the ith chemical, $(mg/kg\text{-}day)^{-1}$

Carcinogenic risk was assumed to be additive and was estimated by summing the upper-limit incremental cancer risk for all carcinogenic COPCs.

4.4.3 Site Specific Risks and Hazards

The residential noncarcinogenic health hazards and carcinogenic risks associated with exposure to surface soils from ingestion, dermal contact, and inhalation of suspended soil particulates are summarized in Tables 4-3 and 4-4, respectively. Detailed risk and hazard calculations are included in Appendix C. The residential hazard index for exposure to maximum reported concentrations of pesticides in site surface soil was 2.6, which is well above the DTSC level of concern (HI = 1), and is indicative of potential adverse health effects from exposure to site soils. This estimated hazard was primarily attributable to chlordane (approximately 41 per cent of the total hazard), dieldrin (approximately 31 per cent of the total hazard), 4,4'-DDT (approximately 18 per cent of the total hazard) and heptachlor/heptachlor epoxide (approximately 5 per cent of the total hazard).

The total excess carcinogenic risk from ingestion of surface soil, dermal contact with surface soil and inhalation of suspended surface soil particulates was 1.7×10^{-4}. This risk is above the DTSC point of departure (i.e., a risk of one-in-one-million or 1×10^{-6}) and is outside of the risk management range defined by regulatory agencies (1×10^{-6} to 1×10^{-4}). Consequently, the total site risk is considered unacceptable under an unrestricted, residential land use scenario. This estimated risk was primarily attributable to chlordane (approximately 47 per cent of the total risk) and dieldrin (approximately 44 per cent of the total risk).

Tables 4-5 and 4-6 summarize the noncarcinogenic health hazards and carcinogenic risks associated with exposure to subsurface soils (2- to 4-feet bgs) from ingestion, dermal contact and inhalation of soil particulates. The residential hazard index associated with exposure to subsurface soils was 0.03, which is well below the DTSC level of concern. The total excess cancer risk associated with exposure to subsurface soils was 7.7×10^{-7}, which is below the DTSC point of departure and below the lower end of the risk management range. Based on the above results, unacceptable carcinogenic risk and noncarcinogenic health hazards are only associated with site soils between 0- and 2-feet bgs. No adverse health effects are expected from unlimited exposure to subsurface soils (2- to 4-feet bgs).

4.4.4 Uncertainty Analysis

The noncarcinogenic health hazard and carcinogenic risk associated with OCPs in soil from incidental ingestion, dermal contact, and inhalation of suspended particulate were based on the maximum reported soil concentrations detected in samples collected immediately adjacent to the home's foundation. Pesticide application could have extended laterally out into the yard area, with higher OCP concentrations potentially occurring. In addition, pesticides may have been applied around the perimeters of garages and sheds, which were not sampled as part of this investigation. Since a data gap exists regarding the presence of OCPs in the yards and around the out-buildings, the potential risks and hazards may remain unchanged, or could be even higher.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the OCP investigation and the human health screening evaluation, the following site-specific findings were made:

1. For a hypothetical residential receptor, the total noncarcinogenic health hazard for exposure to surface soils was 2.6, which is above the DTSC level of concern (HI = 1) and considered an unacceptable health hazard.

2. For a hypothetical residential receptor, the total excess cancer risk for exposure to surface soils was 1.7×10^{-4}, which is above the upper end of the risk management range (1×10^{-6} to 1×10^{-4}). This estimated site risk is considered unacceptable.

3. For a hypothetical residential receptor, the total noncarcinogenic health hazard for exposure to subsurface soils (2- to 4-feet bgs) was 0.036, which is well below the DTSC level of concern (HI = 1).

4. For a hypothetical residential receptor, the total excess cancer risk for exposure to subsurface soils (2- to 4-feet bgs) was 7.7×10^{-6}, which is below the lower end of the risk management range (1×10^{-6} to 1×10^{-4}). This estimated site risk is considered negligible.

5. Unacceptable carcinogenic risk and noncarcinogenic health hazards are only associated with site soils between 0- and 2-feet bgs. No adverse health effects are expected from unlimited, residential exposure to subsurface soils (2- to 4-feet bgs).

6. A data gap exists regarding the lateral extent of OCP contamination into the yards and around the out-buildings at the site. Consequently, the potential risks and hazards may remain unchanged, or could be even higher.

Based on the above conclusions, DTSC makes the following recommendations:

1. Collect step-out samples to better define the extent of OCP contamination around the residences.

2. Collect samples around the perimeter of out-buildings, including sheds and garages, for analysis of OCPs.

3. Collect step-down samples between 0.5- and 2-feet bgs to better define the vertical gradient of OCP concentrations, for the purposes of reducing the volume of soil to be removed.

6.0 REFERENCES

DTSC 1999. Preliminary Endangerment Assessment Guidance Manual, A Guidance Manual for Evaluating Hazardous Substance Release Sites. State of California, Environmental Protection Agency, Department of Toxic Substances Control, June 1999.

DTSC 2000. Draft Guidance for the dermal Exposure Pathway. Department of Toxic Substances Control, Human and Ecological Risk Division, January 7, 2000.

DTSC 2002. Draft Protocol for Organochlorine Pesticide Sampling and Analysis at Residential Properties, Version 1, April 2002.

Tables

Table 3-1

Organochlorine Pesticide Data Summary

Organochlorine Pesticide	Organochlorine Pesticide Concentrations at Each Sample Location									
	WEM01-0.5 (mg/kg)	WEM01-2 (mg/kg)	WEM01-4 (mg/kg)	WEM02-0.5 (mg/kg)	WEM02-2 (mg/kg)	WEM02-4 (mg/kg)	WEM03-0.5 (mg/kg)	WEM03-2 (mg/kg)	WEM03-4 (mg/kg)	WEM4-0.5 (mg/kg)
4,4'-DDD	0.026	ND	ND	0.042	ND	ND	0.426	ND	ND	0.067
4,4'-DDE	0.063	ND	ND	0.215	ND	ND	0.782	ND	ND	0.031
4,4'-DDT	0.140	ND	ND	0.267	ND	ND	2.560	0.004	ND	1.000
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	0.103	ND	ND	0.151	ND	ND	0.329	ND	ND	0.137
Delta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.006	ND	ND	0.010	ND	ND	0.090	ND	ND	0.004
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lindane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-1

Organochlorine Pesticide Data Summary

Organochlorine Pesticide	Organochlorine Pesticide Concentrations at Each Sample Location									
	WEM4-2 (mg/kg)	WEM4-4 (mg/kg)	WEM17-0.5 (mg/kg)	WEM05-0.5 (mg/kg)	WEM05-2 (mg/kg)	WEM05-4 (mg/kg)	WEM06-0.5 (mg/kg)	WEM06-2 (mg/kg)	WEM06-4 (mg/kg)	WEM06-4DUP (mg/kg)
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	ND	ND	ND	1.400	ND	ND	0.132	ND	ND	ND
4,4'-DDT	ND	ND	0.013	16.000	ND	ND	0.102	ND	ND	ND
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	ND	ND	0.010	11.000	ND	ND	36.000	0.105	ND	0.070
Delta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	0.500	ND	ND	ND	ND	ND	ND
Endosulfan I	ND	ND	ND	0.600	ND	ND	ND	ND	ND	ND
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	0.080	ND	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	0.500	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	0.500	ND	ND	0.013	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	0.108	ND	ND	ND
Lindane	ND	ND	ND	ND	ND	ND	0.007	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-1

Organochlorine Pesticide Data Summary

Organochlorine Pesticide	Organochlorine Pesticide Concentrations at Each Sample Location									
	WEM07-0.5 (mg/kg)	WEM07-2 (mg/kg)	WEM07-4 (mg/kg)	WEM08-0.5 (mg/kg)	WEM08-2 (mg/kg)	WEM08-4 (mg/kg)	WEM9-0.5 (mg/kg)	WEM9-2 (mg/kg)	WEM9-4 (mg/kg)	WEM10-0.5 (mg/kg)
4,4'-DDD	0.196	0.096	ND	1.100	ND	ND	0.242	ND	ND	*0.046*
4,4'-DDE	0.114	0.027	ND	0.058	ND	ND	0.080	ND	ND	1.160
4,4'-DDT	0.229	0.094	ND	0.529	ND	ND	0.430	ND	ND	3.180
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	7.240	ND	ND	9.040	0.011	0.122	2.240	ND	ND	1.300
Delta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	*0.038*	ND	ND	0.141	ND	ND	0.061
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	0.043	ND	ND	0.040	ND	ND	ND
Heptachlor epoxide	0.104	ND	ND	ND	ND	ND	0.035	ND	ND	ND
Lindane	0.089	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-1

Organochlorine Pesticide Data Summary

Organochlorine Pesticide	Organochlorine Pesticide Concentrations at Each Sample Location									
	WEM10-2 (mg/kg)	WEM10-4 (mg/kg)	WEM18-0.5 (mg/kg)	WEM11-0.5 (mg/kg)	WEM11-2 (mg/kg)	WEM12-0.5 (mg/kg)	WEM12-2 (mg/kg)	WEM12-4 (mg/kg)	WEM13-0.5 (mg/kg)	WEM13-2 (mg/kg)
4,4'-DDD	0.010	0.068	0.247	0.377	ND	0.560	ND	ND	0.008	ND
4,4'-DDE	0.061	0.209	ND	0.307	ND	0.478	ND	ND	0.011	ND
4,4'-DDT	0.137	0.486	0.127	1.110	0.235	0.308	ND	0.005	0.066	ND
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	0.078	0.140	1.580	1.840	ND	4.570	0.088	0.031	0.014	ND
Delta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	2.720	0.052	ND	0.089	ND	ND	ND	ND
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	0.030	ND	0.059	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	0.075	ND	0.071	ND	ND	ND	ND
Lindane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-1

Organochlorine Pesticide Data Summary

Organochlorine Pesticide	Organochlorine Pesticide Concentrations at Each Sample Location								
	WEM13-4 (mg/kg)	WEM14-0.5 (mg/kg)	WEM14-2 (mg/kg)	WEM14-4 (mg/kg)	WEM16-0.5 (mg/kg)	WEM16-2 (mg/kg)	WEM16-2'DUP (mg/kg)	WEM16-4 (mg/kg)	WEM19-0.5 (mg/kg)
4,4'-DDD	ND	0.013	ND	ND	0.025	0.005	ND	ND	0.015
4,4'-DDE	ND	0.008	ND	ND	0.066	0.009	ND	ND	0.009
4,4'-DDT	ND	0.133	ND	ND	0.130	0.036	0.005	ND	0.097
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	ND	0.027	ND	ND	0.019	ND	ND	ND	0.017
Delta BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	0.031	ND	ND	ND	ND
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lindane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 4-1

Maximum Reported Soil Concentrations
of Organochlorine Pesticides, (0- to 4-Feet bgs)

Organochlorine Pesticide	Maximum Concentration All Depths (mg/kg)	Maximum Concentration (0- to 0.5- Foot) (mg/kg)	Maximum Concentration (2-Foot bgs) (mg/kg)	Maximum Concentration (4-Foot bgs) (mg/kg)	Maximum Concentration (2- to 4-Foot bgs) (mg/kg)
4,4'-DDD	1.100	1.100	0.096	0.068	0.096
4,4'-DDE	1.400	1.400	0.061	0.209	0.209
4,4'-DDT	16.000	16.000	0.235	0.486	0.486
Aldrin	ND	ND	ND	ND	ND
Alpha BHC	ND	ND	ND	ND	ND
Beta BHC	ND	ND	ND	ND	ND
Chlordane	36.000	36.000	0.105	0.140	0.140
Delta BHC	ND	ND	ND	ND	ND
Dieldrin	2.720	2.720	ND	ND	ND
Endosulfan I	0.600	0.600	ND	ND	ND
Endosulfan II	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND
Endrin	0.080	0.080	ND	ND	ND
Endrin aldehyde	0.500	0.500	ND	ND	ND
Heptachlor	0.500	0.500	ND	ND	ND
Heptachlor epoxide	0.108	0.108	ND	ND	ND
Lindane	0.089	0.089	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND

Table 4-2

Toxicity Criteria

Chemical of Potential Concern (COPC)	Criteria for Noncarcinogens				Criteria for Carcinogens			
	Oral RfD (mg/kg-day)	Source	Inhalation RfD (mg/kg-day)	Source	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$	Source	Inhalation Slope Factor $(mg/kg\text{-}day)^{-1}$	Source
Organochlorine Pesticides								
Chlordane	5.00E-04	*a*	2.00E-04	*a*	1.30E+00	*b*	1.20E+00	*b*
4,4'-DDD	5.00E-04	*c*	5.00E-04	*c*	2.40E-01	*b*	2.40E-01	*b*
4,4'-DDE	5.00E-04	*c*	5.00E-04	*c*	3.40E-01	*b*	3.40E-01	*b*
4,4'-DDT	5.00E-04	*a*	5.00E-04	*d*	3.40E-01	*b*	3.40E-01	*b*
Dieldrin	5.00E-05	*a*	5.00E-05	*b*	1.60E+01	*b*	1.60E+01	*b*
Endosulfan I	6.00E-03	*a*	6.00E-03	*d*	N/A		N/A	
Endrin	3.00E-04	*a*	3.00E-04	*d*	N/A		N/A	
Endrin aldehyde	3.00E-04	e	3.00E-04	*d*	N/A		N/A	
Heptachlor	5.00E-04	*a*	5.00E-04	*d*	4.10E+00	*b*	4.10E+00	*b*
Heptachlor epoxide	1.30E-05	*a*	1.30E-05	*d*	5.50E+00	*b*	5.50E+00	*b*
Lindane (γ–Hexachlorocyclohexane)	3.00E-04	*a*	3.00E-04	*d*	1.10E+00	*b*	1.10E+00	*b*

a USEPA Integrated Risk Information System (IRIS),
b Cal/EPA, Office of Environmental Health Hazard Assessment (OEHHA), California Cancer Potency Values.
c Use the toxicity criteria for 4,4'-DDT, based on structural similarity.
d Route-to-route extrapolation from the oral RfD.
e Use the toxicity criteria for endrin, since endrin aldehyde is a metabolite and breakdown product.

Table 4-3

Hazard Summary for Surface Soils (0- to 0.5-Feet bgs)

COPCs	Hazards from Site Soils		
	Hazard from Incidental Ingestion	Hazard from Dermal Contact	Hazard from Inhalation of Soil Particulates
Organochlorine Pesticides			
Chlordane	9.2E-01	1.4E-01	1.2E-04
4,4'-DDD	2.8E-02	4.2E-03	1.4E-06
4,4'-DDE	3.6E-02	5.4E-03	1.8E-06
4,4'-DDT	4.1E-01	6.2E-02	2.0E-05
Dieldrin	7.0E-01	1.0E-01	3.5E-05
Endosulfan I	1.3E-03	1.9E-04	6.4E-08
Endrin	3.4E-03	5.1E-04	1.7E-07
Endrin aldehyde	2.1E-02	3.2E-03	1.1E-06
Heptachlor	1.3E-02	1.9E-03	6.4E-07
Heptachlor epoxide	1.1E-01	1.6E-02	5.3E-06
Lindane (γ–Hexachlorocyclohexane)	3.8E-03	5.7E-04	1.9E-07
Total Hazard	**2.2E+00**	**3.4E-01**	**1.8E-04**
		Hazard Index:	**2.6**

Table 4-4

Risk Summary for Surface Soil (0- to 0.5-feet bgs)

COPCs	Risks from Site Soils		
	Cancer Risk from Incidental Ingestion	Cancer Risk from Dermal Contact	Cancer Risk from Inhalation of Soil Particulates
Organochlorine Pesticides			
Chlordane	7.3E-05	8.7E-06	6.44E-09
4,4'-DDD	4.1E-07	4.9E-08	3.93E-11
4,4'-DDE	7.5E-07	8.8E-08	7.09E-11
4,4'-DDT	8.5E-06	1.0E-06	8.11E-10
Dieldrin	6.8E-05	8.1E-06	6.48E-09
Endosulfan I	N/A	N/A	N/A
Endrin	N/A	N/A	N/A
Endrin aldehyde	N/A	N/A	N/A
Heptachlor	3.2E-06	3.8E-07	3.05E-10
Heptachlor epoxide	9.3E-07	1.1E-07	8.85E-11
Lindane (γ–Hexachlorocyclohexane)	1.5E-07	1.8E-08	1.46E-11
Pathway-Specific Risk	**1.6E-04**	**1.8E-05**	**1.4E-08**
		Total Risk	**1.7E-04**

Table 4-5

Hazard Summary for Subsurface Soils (2- to 4-feet bgs)

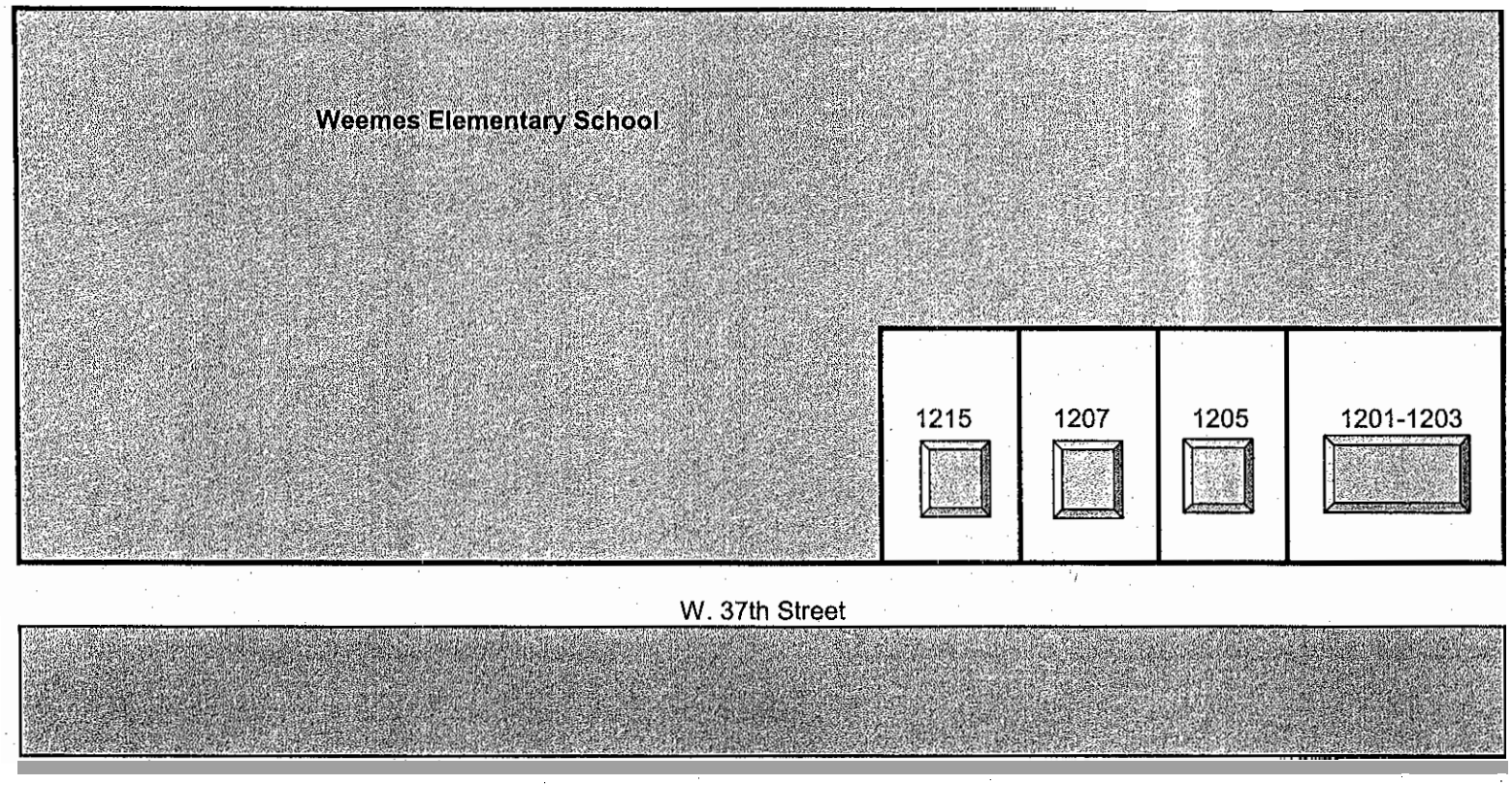
COPCs	Hazards from Site Soils		
	Hazard from Incidental Ingestion	Hazard from Dermal Contact	Hazard from Inhalation of Soil Particulates
Organochlorine Pesticides			
Chlordane	3.6E-03	5.4E-04	4.5E-07
4,4'-DDD	2.5E-03	3.7E-04	1.2E-07
4,4'-DDE	5.4E-03	8.1E-04	2.7E-07
4,4'-DDT	1.2E-02	1.9E-03	6.2E-07
Total Hazard	**2.4E-02**	**3.6E-03**	**1.5E-06**
		Hazard Index :	**0.03**

Table 4-6

Risk Summary for Subsurface Soils (2- to 4-feet bgs)

COPCs	Risks from Site Soils		
	Cancer Risk from *Incidental* Ingestion	Cancer Risk from *Dermal* Contact	Cancer Risk from *Inhalation of* Soil Particulates
Organochlorine Pesticides			
Chlordane	2.9E-07	3.4E-08	2.50E-11
4,4'-DDD	3.6E-08	4.3E-09	3.43E-12
4,4'-DDE	1.1E-07	1.3E-08	1.06E-11
4,4'-DDT	2.6E-07	3.1E-08	2.46E-11
Pathway-Specific Risk	**6.9E-07**	**8.2E-08**	**6.4E-11**
		Total Risk	**7.7E-07**

Figures

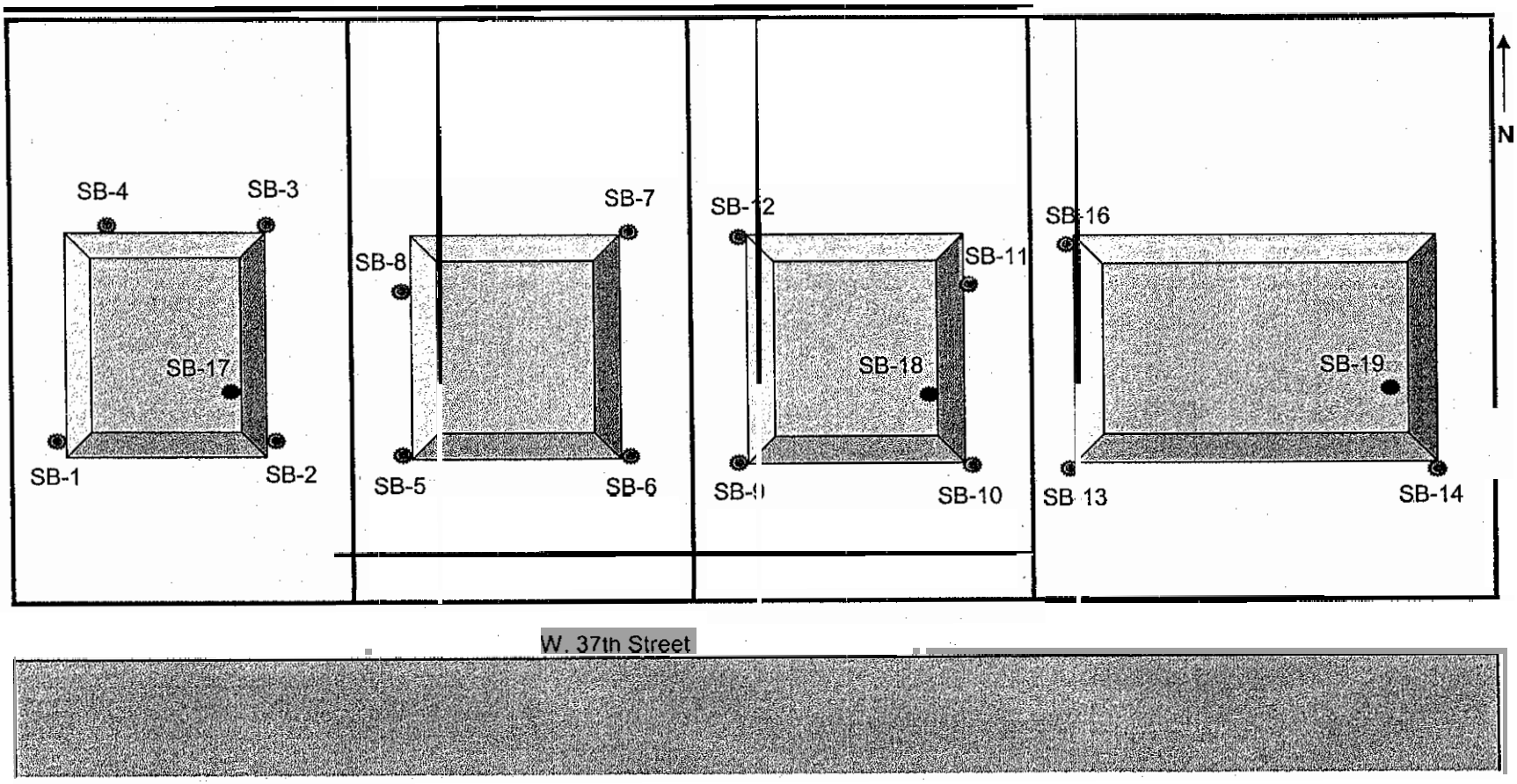


LEGEND

Residential Property Boundary

Residence Footprint (w/street address)

FIGURE 1
Proposed
Weemes Elementary School Playground Expansion Site



LEGEND

- Discrete Home Perimeter Foundation Soil Boring
- Discrete Crawlspace Surface Soil Sample

FIGURE 2
Soil Sampling Locations

Appendix A

Field Log Sheets

DTSC Residential Pesticide Study Log Sheet

Site Name: Weemes Elementary School Playground Expansion

Sampler Name(s): Jennifer Jones (JJ), Javier Hinojosa (JH), Peter Garcia (PG), Laura Zaremba (LZ), Stephanie Feliciano (SF), Angela Ortega (AO)

Date: 6/21/02

#	Sample ID	Sample Depth (ft)	Sample Time	Sampler	Comments
1	WEM-01	0.5	8:15	LZ	Sample is ~~[illegible]~~ from house ✓
2	WEM-01	2	8:26	PG	" 2.4 feet west of house 2.4 ft north of corner ✓
3	WEM-01	4	8:29	AO	" " ✓
4	WEM-02	0.5	8:15	LZ	7" East f/ building 3" North ✓
5	WEM-02	2	8:20	↓	↓ ✓
6	WEM-02	4	8:25	↓	↓ ✓
7	WEM-03	0.5	8:40	LZ	46' from front corner 6" f/ side box
8	WEM-03	2	8:50	LZ	✓
9	WEM-03	4	~~8:50~~ 9:00	LZ	✓
10	WEM-04	0.5	8:45	PG	Sample is 0.8 feet from house (west
11	WEM-04	2	8:50	JJ	and 2.8 feet from north edge ✓
12	WEM-04	4	8:52	JJ	" " ✓
13	WEM-05	0.5	9:13	~~AO~~ JJ	3.6 N, 6 inches W. of house ✓
14	WEM-05	2	9:15	~~AO~~ JJ	✓
15	WEM-05	4	9:20	~~AO~~ JJ	✓
16	WEM-06	0.5	9:10	AO	3.5 N, 8 inches E of house ✓
17	WEM-06	2	9:15	AO	✓
18	WEM-06	4	9:20	AO	✓
19	WEM-07	0.5	9:29	JJ	1.2' S of North edge and 8" east ✓
20	WEM-07	2	9:33	JJ	✓
21	WEM-07	4	9:37	JJ	✓
22	WEM-08	0.5	9:38	AO	~~9'~~ 15' ~~E~~ S f/ N edge of house. 6" west ✓
23	WEM-08	2	9:42	AO	15' ✓
24	WEM-08	4	9:50	AO	✓
25	WEM-09	0.5	9:58	JJ	6 inches N. of end of house, ✓
26	WEM-09	2	10:08	JJ	6 inches W. of house ✓
27	WEM-09	4	10:15	JJ	" ✓

DTSC Residential Pesticide Study Log Sheet

Site Name: Weemes Elementary School Playground Expansion

Sampler Name(s): Jennifer Jones (JJ), Javier Hinojosa (JH), Peter Garcia (PG), Laura Zaremba (LZ), Stephanie Feliciano (SF), Angela Ortega (AO)

Date: 6/21/02

* Sampled but discarded for ~~sampli~~ analysis due to limit of # of sample that can be analyzed.

#	Sample ID	Sample Depth (ft)	Sample Time	Sampler	Comments	
28	WEM -10	0.5	10:00	PG		✓
29	WEM -10	2	10:05	PG		✓
30	WEM -10	4	10:10	PG		✓
31	WEM -11	0.5	10:20	AO		✓
32	WEM -11	2	10:25	AO		✓
33	WEM -11	4	—	—	Refusal - sample not collected	—
34	WEM -12	0.5	10:25	JJ	2.8 ft S. / 6 inches west	✓
35	WEM -12	2	10:35	SF	"	✓
36	WEM -12	4	10:36	JJ	"	✓
37	WEM -13	0.5	10:47	A.O	1.8 ft East of corner / 5 in south	✓
38	WEM -13	2	10:50	A.O	"	✓
39	WEM -13	4	11:00	A O	"	✓
40	WEM -14	0.5	10:45	LZ	9 in. west of corner / 9 in. south	✓
41	WEM -14	2	10:52	LZ	"	✓
42	WEM -14	4	10:56	LZ	"	✓
43	WEM -15	0.5	—	—	NOT collected - concrete area	
44	WEM -15	2	—	—		
45	WEM -15	4	—	—		
46	WEM -16	0.5	11:03	AO	3.4 ft west of corner	✓
47	WEM -16	2	11:07	AO		✓
48	WEM -16	4	11:12	AO		✓
49	WEM -19	0.5	11:00	JJ	crawl space at 1201-1203 W. 37th St. 3.9' (E into hou	
50	WEM - 17	0.5	9:05	JJ	3.9' into the house (W) Crawl space at 1215 37th St.	✓
51	WEM 06-4DUP	4	9:20	JJ	Duplicate on soil boring 06	✓
52*	WEM-8A-0.5	0.5	9:32	AO	9.5' SF / the N edge of house 6" W	✓
53	WEM-18	0.5	10:13	AO	3.9' into space 29' from edge of beginning of house	✓
54	WEM 12-4DUP	4	10:36	SF	* sample discarded	
56	WEM-16-2DUP	2	11:07	AO		✓
57	WEM-R	—	11:20	PG	Rinsate sample	✓

Appendix B

Organochlorine Pesticide Analytical Results

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Dept of Toxic Substances (9290)
ATTN: Jennifer Jones
1011 N. Grandview Ave
Glendale, CA 91201

LAB REQUEST 95063
REPORTED 07/19/2002
RECEIVED 06/21/2002

PROJECT Weemes Chlordane Project #1

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
360789	WEM01-0.5
360790	WEM01-2
360791	WEM01-4
360792	WEM02-0.5
360793	WEM02-2
360794	WEM02-4
360795	WEM03-0.5
360796	WEM03-2
360797	WEM03-4
360798	WEM17-0.5
360799	WEM4-0.5
360800	WEM4-2
360801	WEM4-4

Thank you for the opportunity to be of service to your company Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by

Edward S. Behare, Ph.D
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

CLIENT Dept. of Toxic Substances (9290)
ATTN: Jennifer Jones
1011 N. Grandview Ave
Glendale, CA 91201

LAB REQUEST 95063

REPORTED 07/19/2002
RECEIVED 06/21/2002

PROJECT Weemes Chlordane Project #1

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report

Order No.	Client Sample Identification
360802	WEM06-0.5
360803	WEM06-2
360804	WEM06-4
360805	WEM06-4DUP
360806	WEM05-0.5
360807	WEM05-2
360808	WEM05-4
360809	WEM07-0.5
360810	WEM07-2
360811	WEM07-4
360812	WEM08-0.5
360813	WEM08-2
360814	WEM08-4
360815	WEM9-0.5
360816	WEM9-2
360817	WEM9-4
360818	WEM10-0.5
360819	WEM10-2
360820	WEM10-4
360821	WEM18-0.5
360822	WEM11-0.5

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

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SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
360823	WEM11-2
360824	WEM12-0.5
360825	WEM12-2
360826	WEM12-4
360827	WEM19-0.5
360828	WEM13-0.5
360829	WEM13-2
360830	WEM13-4
360831	WEM14-0.5
360832	WEM14-2
360833	WEM14-4
360834	WEM16-0.5
360835	WEM16-2
360836	WEM16-4
360837	WEM16-2'DUP
360838	WEM-R
360839	Laboratory Method Blank-S
360860	Laboratory Method Blank-W

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D
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TESTING & CONSULTING
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Order #: 360789
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 08:21
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM01-0.5

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.026	1	0.004	mg/Kg	07/06/02	SD
4,4'-DDE	0.063	1	0.003	mg/Kg	07/06/02	SD
4,4'-DDT	0.140	1	0.003	mg/Kg	07/06/02	SD
Aldrin	ND	1	0.002	mg/Kg	07/06/02	SD
Alpha BHC	ND	1	0.002	mg/Kg	07/06/02	SD
Beta BHC	ND	1	0.003	mg/Kg	07/06/02	SD
Chlordane	0.103	1	0.008	mg/Kg	07/06/02	SD
Delta BHC	ND	1	0.005	mg/Kg	07/06/02	SD
Dieldrin	0.006	1	0.003	mg/Kg	07/06/02	SD
Endosulfan I	ND	1	0.004	mg/Kg	07/06/02	SD
Endosulfan II	ND	1	0.003	mg/Kg	07/06/02	SD
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/06/02	SD
Endrin	ND	1	0.004	mg/Kg	07/06/02	SD
Endrin aldehyde	ND	1	0.004	mg/Kg	07/06/02	SD
Heptachlor	ND	1	0.002	mg/Kg	07/06/02	SD
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/06/02	SD
Lindane	ND	1	0.003	mg/Kg	07/06/02	SD
Methoxychlor	ND	1	0.025	mg/Kg	07/06/02	SD
Toxaphene	ND	1	0.24	mg/Kg	07/06/02	SD

Surrogates		Units	Control Limits
DCB(Sur2)	114	%	55 - 130
TCMX (Sur1)	75	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360790
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 08:26
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM01-2

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/06/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/06/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/06/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/06/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/06/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/06/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/06/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/06/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/06/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/06/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/06/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/06/02	QN
Endrin	ND	1	0.004	mg/Kg	07/06/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/06/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/06/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/06/02	QN
Lindane	ND	1	0.003	mg/Kg	07/06/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/06/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/06/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	97	%	55 - 130
TCMX (Sur1)	84	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360791 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM01-4
Date Sampled: 06/21/2002
Time Sampled: 08:29
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/06/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/06/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/06/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/06/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/06/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/06/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/06/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/06/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/06/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/06/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/06/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/06/02	QN
Endrin	ND	1	0.004	mg/Kg	07/06/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/06/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/06/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/06/02	QN
Lindane	ND	1	0.003	mg/Kg	07/06/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/06/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/06/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	90	%	55 - 130
TCMX (Sur1)	84	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360792
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 08:15
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM02-0.5

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.042	10	0.04	mg/Kg	07/06/02	SD
4,4'-DDE	0.215	10	0.03	mg/Kg	07/06/02	SD
4,4'-DDT	0.267	10	0.03	mg/Kg	07/06/02	SD
Aldrin	ND	1	0.002	mg/Kg	07/06/02	SD
Alpha BHC	ND	1	0.002	mg/Kg	07/06/02	SD
Beta BHC	ND	1	0.003	mg/Kg	07/06/02	SD
Chlordane	0.151	10	0.08	mg/Kg	07/06/02	SD
Delta BHC	ND	1	0.005	mg/Kg	07/06/02	SD
Dieldrin	0.01	1	0.003	mg/Kg	07/06/02	SD
Endosulfan I	ND	1	0.004	mg/Kg	07/06/02	SD
Endosulfan II	ND	1	0.003	mg/Kg	07/06/02	SD
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/06/02	SD
Endrin	ND	1	0.004	mg/Kg	07/06/02	SD
Endrin aldehyde	ND	1	0.004	mg/Kg	07/06/02	SD
Heptachlor	ND	1	0.002	mg/Kg	07/06/02	SD
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/06/02	SD
Lindane	ND	1	0.003	mg/Kg	07/06/02	SD
Methoxychlor	ND	1	0.025	mg/Kg	07/06/02	SD
Toxaphene	ND	1	0.24	mg/Kg	07/06/02	SD

Surrogates		Units	Control Limits
DCB(Sur2)	157	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360793
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 08:20
Sampled By:

Client: Dept of Toxic Substances
Client Sample ID: WEM02-2

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	108	%	55 - 130
TCMX (Sur1)	77	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360794
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 08:25
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM02-4

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	99	%	55 - 130
TCMX (Sur1)	72	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360795
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 08:40
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM03-0.5

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.426	20	0.08	mg/Kg	07/08/02	SD
4,4'-DDE	0.782	20	0.06	mg/Kg	07/08/02	SD
4,4'-DDT	2.56	20	0.06	mg/Kg	07/08/02	SD
Aldrin	ND	1	0.002	mg/Kg	07/08/02	SD
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	SD
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	SD
Chlordane	0.329	20	0.16	mg/Kg	07/08/02	SD
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	SD
Dieldrin	0.090	1	0.003	mg/Kg	07/08/02	SD
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	SD
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	SD
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	SD
Endrin	ND	1	0.004	mg/Kg	07/08/02	SD
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	SD
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	SD
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	SD
Lindane	ND	1	0.003	mg/Kg	07/08/02	SD
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	SD
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	SD

Surrogates		Units	Control Limits
DCB(Sur2)	186	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360796
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 08:50
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM03-2

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	SD
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	SD
4,4'-DDT	0.004	1	0.003	mg/Kg	07/08/02	SD
Aldrin	ND	1	0.002	mg/Kg	07/08/02	SD
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	SD
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	SD
Chlordane	ND	1	0.008	mg/Kg	07/08/02	SD
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	SD
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	SD
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	SD
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	SD
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	SD
Endrin	ND	1	0.004	mg/Kg	07/08/02	SD
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	SD
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	SD
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	SD
Lindane	ND	1	0.003	mg/Kg	07/08/02	SD
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	SD
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	SD

Surrogates		Units	Control Limits
DCB(Sur2)	96	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360797 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM03-4
Date Sampled: 06/21/2002
Time Sampled: 09:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	95	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360798
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 09:05
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM17-0.5

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	SD
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	SD
4,4'-DDT	0.013	1	0.003	mg/Kg	07/08/02	SD
Aldrin	ND	1	0.002	mg/Kg	07/08/02	SD
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	SD
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	SD
Chlordane	0.010	1	0.008	mg/Kg	07/08/02	SD
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	SD
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	SD
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	SD
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	SD
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	SD
Endrin	ND	1	0.004	mg/Kg	07/08/02	SD
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	SD
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	SD
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	SD
Lindane	ND	1	0.003	mg/Kg	07/08/02	SD
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	SD
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	SD

Surrogates		Units	Control Limits
DCB(Sur2)	111	%	55 - 130
TCMX (Sur1)	107	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360799 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM4-0.5
Date Sampled: 06/21/2002
Time Sampled: 08:45
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.067	10	0.04	mg/Kg	07/09/02	SD
4,4'-DDE	0.031	10	0.03	mg/Kg	07/09/02	SD
4,4'-DDT	1.00	10	0.03	mg/Kg	07/09/02	SD
Aldrin	ND	1	0.002	mg/Kg	07/09/02	SD
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	SD
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	SD
Chlordane	0.137	10	0.08	mg/Kg	07/09/02	SD
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	SD
Dieldrin	0.004	1	0.003	mg/Kg	07/09/02	SD
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	SD
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	SD
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	SD
Endrin	ND	1	0.004	mg/Kg	07/09/02	SD
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	SD
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	SD
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	SD
Lindane	ND	1	0.003	mg/Kg	07/09/02	SD
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	SD
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	SD

Surrogates		Units	Control Limits
DCB(Sur2)	151	%	55 - 130
TCMX (Sur1)	83	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360800 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM4-2
Date Sampled: 06/21/2002
Time Sampled: 08:50
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	106	%	55 - 130
TCMX (Sur1)	85	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360801 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM4-4
Date Sampled: 06/21/2002
Time Sampled: 08:52
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	99	%	55 - 130
TCMX (Sur1)	81	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360802 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM06-0.5
Date Sampled: 06/21/2002
Time Sampled: 09:10
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	0.132	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	0.102	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	36.0	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	0.013	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	0.108	1	0.003	mg/Kg	07/09/02	QN
Lindane	0.007	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	141	%	55 - 130
TCMX (Sur1)	91	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360803 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM06-2
Date Sampled: 06/21/2002
Time Sampled: 09:15
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	0.105	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	90	%	55 - 130
TCMX (Sur1)	71	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360804 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM06-4
Date Sampled: 06/21/2002
Time Sampled: 09:20
Sampled By:

8081A - Organochlorine Pesticides by GC

Analyte	Result	DF	DLR	Units	Date/Analyst	
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360805 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM06-4DUP
Date Sampled: 06/21/2002
Time Sampled: 09:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	0.07	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	98	%	55 - 130
TCMX (Sur1)	74	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360806 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM05-05
Date Sampled: 06/21/2002
Time Sampled: 09:13
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	1.4	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	16	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	11	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	0.50	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	0.60	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	0.08	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	0.50	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	0.50	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	175	%	55 - 130
TCMX (Sur1)	85	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360807 Client: Dept. of Toxic Substances
Matrix: SOLID Client Sample ID: WEM05-2
Date Sampled: 06/21/2002
Time Sampled: 09:15
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	85	%	55 - 130
TCMX (Sur1)	68	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360808 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM05-4
Date Sampled: 06/21/2002
Time Sampled: 09:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/09/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/09/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/09/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/09/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/09/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/09/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/09/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/09/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/09/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/09/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/09/02	QN
Endrin	ND	1	0.004	mg/Kg	07/09/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/09/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/09/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/09/02	QN
Lindane	ND	1	0.003	mg/Kg	07/09/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/09/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/09/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	107	%	55 - 130
TCMX (Sur1)	72	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360809 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM07-0.5
Date Sampled: 06/21/2002
Time Sampled: 09:29
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.196	20	0.08	mg/Kg	07/17/02	QN
4,4'-DDE	0.114	20	0.06	mg/Kg	07/17/02	QN
4,4'-DDT	0.229	20	0.06	mg/Kg	07/17/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/17/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/17/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/17/02	QN
Chlordane	7.24	20	0.16	mg/Kg	07/17/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/17/02	QN
Dieldrin	ND	20	0.06	mg/Kg	07/17/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/17/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/17/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/17/02	QN
Endrin	ND	20	0.08	mg/Kg	07/17/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/17/02	QN
Heptachlor	ND	20	0.04	mg/Kg	07/17/02	QN
Heptachlor epoxide	0.104	20	0.06	mg/Kg	07/17/02	QN
Lindane	0.089	20	0.06	mg/Kg	07/17/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/17/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	103	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360810 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM07-2
Date Sampled: 06/21/2002
Time Sampled: 09:33
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.096	10	0.04	mg/Kg	07/17/02	QN
4,4'-DDE	0.027	10	0.03	mg/Kg	07/17/02	QN
4,4'-DDT	0.094	10	0.03	mg/Kg	07/17/02	QN
Aldrin	ND	10	0.02	mg/Kg	07/17/02	QN
Alpha BHC	ND	10	0.02	mg/Kg	07/17/02	QN
Beta BHC	ND	10	0.03	mg/Kg	07/17/02	QN
Chlordane	ND	10	0.08	mg/Kg	07/17/02	QN
Delta BHC	ND	10	0.05	mg/Kg	07/17/02	QN
Dieldrin	ND	10	0.03	mg/Kg	07/17/02	QN
Endosulfan I	ND	10	0.04	mg/Kg	07/17/02	QN
Endosulfan II	ND	10	0.03	mg/Kg	07/17/02	QN
Endosulfan sulfate	ND	10	0.03	mg/Kg	07/17/02	QN
Endrin	ND	10	0.04	mg/Kg	07/17/02	QN
Endrin aldehyde	ND	10	0.04	mg/Kg	07/17/02	QN
Heptachlor	ND	10	0.02	mg/Kg	07/17/02	QN
Heptachlor epoxide	ND	10	0.03	mg/Kg	07/17/02	QN
Lindane	ND	10	0.03	mg/Kg	07/17/02	QN
Methoxychlor	ND	10	0.25	mg/Kg	07/17/02	QN
Toxaphene	ND	10	2.4	mg/Kg	07/17/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	105	%	55 - 130
TCMX (Sur1)	71	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor,

Order #: 360811 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM07-4
Date Sampled: 06/21/2002
Time Sampled: 09:37
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	98	%	55 - 130
TCMX (Sur1)	70	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360812 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM08-05
Date Sampled: 06/21/2002
Time Sampled: 09:38
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	1.10	20	0.08	mg/Kg	07/18/02	QN
4,4'-DDE	0.058	20	0.06	mg/Kg	07/18/02	QN
4,4'-DDT	0.529	20	0.06	mg/Kg	07/18/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/18/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/18/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/18/02	QN
Chlordane	9.04	20	0.16	mg/Kg	07/18/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/18/02	QN
Dieldrin	0.038 J	20	0.06	mg/Kg	07/18/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/18/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/18/02	QN
Endrin	ND	20	0.08	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/18/02	QN
Heptachlor	0.043	20	0.04	mg/Kg	07/18/02	QN
Heptachlor epoxide	ND	20	0.06	mg/Kg	07/18/02	QN
Lindane	ND	20	0.06	mg/Kg	07/18/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/18/02	QN
Toxaphene	ND	20	4.8	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	160	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360813
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 09:42
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM08-2

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	0.011	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	99	%	55 - 130
TCMX (Sur1)	64	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360814 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM08-4
Date Sampled: 06/21/2002
Time Sampled: 09:50
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	0.122	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	86	%	55 - 130
TCMX (Sur1)	72	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360815 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM9-0.5
Date Sampled: 06/21/2002
Time Sampled: 09:58
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.242	20	0.08	mg/Kg	07/18/02	QN
4,4'-DDE	0.08	20	0.06	mg/Kg	07/18/02	QN
4,4'-DDT	0.430	20	0.06	mg/Kg	07/18/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/18/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/18/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/18/02	QN
Chlordane	2.24	20	0.16	mg/Kg	07/18/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/18/02	QN
Dieldrin	0.141	20	0.06	mg/Kg	07/18/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/18/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/18/02	QN
Endrin	ND	20	0.08	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/18/02	QN
Heptachlor	0.040	20	0.04	mg/Kg	07/18/02	QN
Heptachlor epoxide	0.035	20	0.06	mg/Kg	07/18/02	QN
Lindane	ND	20	0.06	mg/Kg	07/18/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/18/02	QN
Toxaphene	ND	20	4.8	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	144	%	55 - 130
TCMX (Sur1)	80	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360816 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM9-2
Date Sampled: 06/21/2002
Time Sampled: 10:08
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	94	%	55 - 130
TCMX (Sur1)	70	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360817 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM9-4
Date Sampled: 06/21/2002
Time Sampled: 10:15
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	89	%	55 - 130
TCMX (Sur1)	77	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360818
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 10:00
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM10-0.5

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.046 J	20	0.08	mg/Kg	07/18/02	QN
4,4'-DDE	1.16	20	0.06	mg/Kg	07/18/02	QN
4,4'-DDT	3.18	20	0.06	mg/Kg	07/18/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/18/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/18/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/18/02	QN
Chlordane	1.3	20	0.16	mg/Kg	07/18/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/18/02	QN
Dieldrin	0.061	1	0.003	mg/Kg	07/18/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/18/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/18/02	QN
Endrin	ND	20	0.08	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/18/02	QN
Heptachlor	ND	20	0.04	mg/Kg	07/18/02	QN
Heptachlor epoxide	ND	20	0.06	mg/Kg	07/18/02	QN
Lindane	ND	20	0.06	mg/Kg	07/18/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/18/02	QN
Toxaphene	ND	20	4.8	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	267	%	55 - 130
TCMX (Sur1)	83	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360819 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM10-2
Date Sampled: 06/21/2002
Time Sampled: 10:05
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.010	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	0.061	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	0.137	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	0.078	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	100	%	55 - 130
TCMX (Sur1)	64	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360820
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 10:10
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM10-4

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.068	5	0.02	mg/Kg	07/18/02	QN
4,4'-DDE	0.209	5	0.015	mg/Kg	07/18/02	QN
4,4'-DDT	0.486	5	0.015	mg/Kg	07/18/02	QN
Aldrin	ND	5	0.01	mg/Kg	07/18/02	QN
Alpha BHC	ND	5	0.01	mg/Kg	07/18/02	QN
Beta BHC	ND	5	0.015	mg/Kg	07/18/02	QN
Chlordane	0.14	5	0.04	mg/Kg	07/18/02	QN
Delta BHC	ND	5	0.025	mg/Kg	07/18/02	QN
Dieldrin	ND	5	0.015	mg/Kg	07/18/02	QN
Endosulfan I	ND	5	0.02	mg/Kg	07/18/02	QN
Endosulfan II	ND	5	0.015	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	5	0.015	mg/Kg	07/18/02	QN
Endrin	ND	5	0.02	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	5	0.02	mg/Kg	07/18/02	QN
Heptachlor	ND	5	0.01	mg/Kg	07/18/02	QN
Heptachlor epoxide	ND	5	0.015	mg/Kg	07/18/02	QN
Lindane	ND	5	0.015	mg/Kg	07/18/02	QN
Methoxychlor	ND	5	0.125	mg/Kg	07/18/02	QN
Toxaphene	ND	5	1.2	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	116	%	55 - 130
TCMX (Sur1)	71	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor,

Order #: 360821 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM18-0.5
Date Sampled: 06/21/2002
Time Sampled: 10:13
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.247	20	0.08	mg/Kg	07/18/02	QN
4,4'-DDE	ND	20	0.06	mg/Kg	07/18/02	QN
4,4'-DDT	0.127	20	0.06	mg/Kg	07/18/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/18/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/18/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/18/02	QN
Chlordane	1.58	20	0.16	mg/Kg	07/18/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/18/02	QN
Dieldrin	2.72	20	0.06	mg/Kg	07/18/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/18/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/18/02	QN
Endrin	ND	20	0.08	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/18/02	QN
Heptachlor	ND	20	0.04	mg/Kg	07/18/02	QN
Heptachlor epoxide	ND	20	0.06	mg/Kg	07/18/02	QN
Lindane	ND	20	0.06	mg/Kg	07/18/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/18/02	QN
Toxaphene	ND	20	4.8	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	128	%	55 - 130
TCMX (Sur1)	51	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor,

Order #: 360822 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM11-0.5
Date Sampled: 06/21/2002
Time Sampled: 10:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.377	20	0.08	mg/Kg	07/18/02	QN
4,4'-DDE	0.307	20	0.06	mg/Kg	07/18/02	QN
4,4'-DDT	1.11	20	0.06	mg/Kg	07/18/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/18/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/18/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/18/02	QN
Chlordane	1.84	20	0.16	mg/Kg	07/18/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/18/02	QN
Dieldrin	0.052	20	0.06	mg/Kg	07/18/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/18/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/18/02	QN
Endrin	ND	20	0.08	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/18/02	QN
Heptachlor	0.030	20	0.04	mg/Kg	07/18/02	QN
Heptachlor epoxide	0.075	20	0.06	mg/Kg	07/18/02	QN
Lindane	ND	20	0.06	mg/Kg	07/18/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/18/02	QN
Toxaphene	ND	20	4.8	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	121	%	55 - 130
TCMX (Sur1)	81	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360823
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 10:25
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM11-2

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	20	0.08	mg/Kg	07/18/02	QN
4,4'-DDE	ND	20	0.06	mg/Kg	07/18/02	QN
4,4'-DDT	0.235	20	0.06	mg/Kg	07/18/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/18/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/18/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/18/02	QN
Chlordane	ND	20	0.16	mg/Kg	07/18/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/18/02	QN
Dieldrin	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/18/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/18/02	QN
Endrin	ND	20	0.08	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/18/02	QN
Heptachlor	ND	20	0.04	mg/Kg	07/18/02	QN
Heptachlor epoxide	ND	20	0.06	mg/Kg	07/18/02	QN
Lindane	ND	20	0.06	mg/Kg	07/18/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/18/02	QN
Toxaphene	ND	20	4.8	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	92	%	55 - 130
TCMX (Sur1)	56	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360824
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 10:25
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM12-0.5

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.56	20	0.08	mg/Kg	07/18/02	QN
4,4'-DDE	0.478	20	0.06	mg/Kg	07/18/02	QN
4,4'-DDT	0.308	20	0.06	mg/Kg	07/18/02	QN
Aldrin	ND	20	0.04	mg/Kg	07/18/02	QN
Alpha BHC	ND	20	0.04	mg/Kg	07/18/02	QN
Beta BHC	ND	20	0.06	mg/Kg	07/18/02	QN
Chlordane	4.57	20	0.16	mg/Kg	07/18/02	QN
Delta BHC	ND	20	0.1	mg/Kg	07/18/02	QN
Dieldrin	0.089	20	0.06	mg/Kg	07/18/02	QN
Endosulfan I	ND	20	0.08	mg/Kg	07/18/02	QN
Endosulfan II	ND	20	0.06	mg/Kg	07/18/02	QN
Endosulfan sulfate	ND	20	0.06	mg/Kg	07/18/02	QN
Endrin	ND	20	0.08	mg/Kg	07/18/02	QN
Endrin aldehyde	ND	20	0.08	mg/Kg	07/18/02	QN
Heptachlor	0.059	20	0.04	mg/Kg	07/18/02	QN
Heptachlor epoxide	0.071	20	0.06	mg/Kg	07/18/02	QN
Lindane	ND	20	0.06	mg/Kg	07/18/02	QN
Methoxychlor	ND	20	0.5	mg/Kg	07/18/02	QN
Toxaphene	ND	20	4.8	mg/Kg	07/18/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	148	%	55 - 130
TCMX (Sur1)	85	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360825 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM12-2
Date Sampled: 06/21/2002
Time Sampled: 10:35
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/08/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/08/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/08/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/08/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/08/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/08/02	QN
Chlordane	0.088	1	0.008	mg/Kg	07/08/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/08/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/08/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/08/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/08/02	QN
Endrin	ND	1	0.004	mg/Kg	07/08/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/08/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/08/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/08/02	QN
Lindane	ND	1	0.003	mg/Kg	07/08/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/08/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/08/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	96	%	55 - 130
TCMX (Sur1)	63	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360826 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM12-4
Date Sampled: 06/21/2002
Time Sampled: 10:36
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/17/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/17/02	QN
4,4'-DDT	0.005	1	0.003	mg/Kg	07/17/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/17/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/17/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/17/02	QN
Chlordane	0.031	1	0.008	mg/Kg	07/17/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/17/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/17/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/17/02	QN
Endrin	ND	1	0.004	mg/Kg	07/17/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/17/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/17/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/17/02	QN
Lindane	ND	1	0.003	mg/Kg	07/17/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/17/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/17/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	65	%	55 - 130
TCMX (Sur1)	92	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360827 **Client:** Dept of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM19-0 5
Date Sampled: 06/21/2002
Time Sampled: 11:03
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.015	1	0.004	mg/Kg	07/17/02	QN
4,4'-DDE	0.009	1	0.003	mg/Kg	07/17/02	QN
4,4'-DDT	0.097	1	0.003	mg/Kg	07/17/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/17/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/17/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/17/02	QN
Chlordane	0.017	1	0.008	mg/Kg	07/17/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/17/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/17/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/17/02	QN
Endrin	ND	1	0.004	mg/Kg	07/17/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/17/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/17/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/17/02	QN
Lindane	ND	1	0.003	mg/Kg	07/17/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/17/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/17/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	101	%	55 - 130
TCMX (Sur1)	75	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360828 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM13-0.5
Date Sampled: 06/21/2002
Time Sampled: 10:47
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.008	1	0.004	mg/Kg	07/17/02	QN
4,4'-DDE	0.011	1	0.003	mg/Kg	07/17/02	QN
4,4'-DDT	0.066	1	0.003	mg/Kg	07/17/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/17/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/17/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/17/02	QN
Chlordane	0.014	1	0.008	mg/Kg	07/17/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/17/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/17/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/17/02	QN
Endrin	ND	1	0.004	mg/Kg	07/17/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/17/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/17/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/17/02	QN
Lindane	ND	1	0.003	mg/Kg	07/17/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/17/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/17/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	98	%	55 - 130
TCMX (Sur1)	68	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360829
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 10:50
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM13-2

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	108	%	55 - 130
TCMX (Sur1)	78	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360830
Matrix: SOLID
Date Sampled: 06/21/2002
Time Sampled: 11:00
Sampled By:

Client: Dept. of Toxic Substances
Client Sample ID: WEM13-4

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	91	%	55 - 130
TCMX (Sur1)	71	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360831 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM14-0.5
Date Sampled: 06/21/2002
Time Sampled: 10:45
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.013	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	0.008	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	0.133	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	0.027	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	104	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360832 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM14-2
Date Sampled: 06/21/2002
Time Sampled: 10:52
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	101	%	55 - 130
TCMX (Sur1)	73	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor.

Order #: 360833 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM14-4
Date Sampled: 06/21/2002
Time Sampled: 10:56
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	96	%	55 - 130
TCMX (Sur1)	79	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360834 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM16-0.5
Date Sampled: 06/21/2002
Time Sampled: 11:03
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.025	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	0.066	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	0.13	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	0.019	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	0.031	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	118	%	55 - 130
TCMX (Sur1)	125	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor.

Order #: 360835 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM16-2
Date Sampled: 06/21/2002
Time Sampled: 11:07
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	0.005	1	0.004	mg/Kg	07/17/02	QN
4,4'-DDE	0.009	1	0.003	mg/Kg	07/17/02	QN
4,4'-DDT	0.036	1	0.003	mg/Kg	07/17/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/17/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/17/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/17/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/17/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/17/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/17/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/17/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/17/02	QN
Endrin	ND	1	0.004	mg/Kg	07/17/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/17/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/17/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/17/02	QN
Lindane	ND	1	0.003	mg/Kg	07/17/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/17/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/17/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	107	%	55 - 130
TCMX (Sur1)	66	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360836 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM16-4
Date Sampled: 06/21/2002
Time Sampled: 11:12
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	96	%	55 - 130
TCMX (Sur1)	72	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360837 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** WEM16-2DUP
Date Sampled: 06/21/2002
Time Sampled: 11:07
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/10/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/10/02	QN
4,4'-DDT	0.005	1	0.003	mg/Kg	07/10/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/10/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/10/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/10/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/10/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/10/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/10/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/10/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/10/02	QN
Endrin	ND	1	0.004	mg/Kg	07/10/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/10/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/10/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/10/02	QN
Lindane	ND	1	0.003	mg/Kg	07/10/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/10/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/10/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	105	%	55 - 130
TCMX (Sur1)	66	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360838 **Client:** Dept. of Toxic Substances
Matrix: WATER **Client Sample ID:** WEM-R
Date Sampled: 06/21/2002
Time Sampled: 11:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0 06	ug/L	06/29/02	QN
4,4'-DDE	ND	1	0.04	ug/L	06/29/02	QN
4,4'-DDT	ND	1	0 05	ug/L	06/29/02	QN
Aldrin	ND	1	0.03	ug/L	06/29/02	QN
Alpha BHC	ND	1	0.03	ug/L	06/29/02	QN
Beta BHC	ND	1	0.05	ug/L	06/29/02	QN
Chlordane	ND	1	0.12	ug/L	06/29/02	QN
Delta BHC	ND	1	0.07	ug/L	06/29/02	QN
Dieldrin	ND	1	0 05	ug/L	06/29/02	QN
Endosulfan I	ND	1	0.06	ug/L	06/29/02	QN
Endosulfan II	ND	1	0.05	ug/L	06/29/02	QN
Endosulfan sulfate	ND	1	0.05	ug/L	06/29/02	QN
Endrin	ND	1	0.06	ug/L	06/29/02	QN
Endrin aldehyde	ND	1	0.06	ug/L	06/29/02	QN
Heptachlor	ND	1	0.03	ug/L	06/29/02	QN
Heptachlor epoxide	ND	1	0.04	ug/L	06/29/02	QN
Lindane	ND	1	0.17	ug/L	06/29/02	QN
Methoxychlor	ND	1	0.38	ug/L	06/29/02	QN
Toxaphene	ND	1	3 54	ug/L	06/29/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	31	%	55 - 125
TCMX (Sur1)	62	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360839 **Client:** Dept. of Toxic Substances
Matrix: SOLID **Client Sample ID:** Laboratory Method Blank-S
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.004	mg/Kg	07/06/02	QN
4,4'-DDE	ND	1	0.003	mg/Kg	07/06/02	QN
4,4'-DDT	ND	1	0.003	mg/Kg	07/06/02	QN
Aldrin	ND	1	0.002	mg/Kg	07/06/02	QN
Alpha BHC	ND	1	0.002	mg/Kg	07/06/02	QN
Beta BHC	ND	1	0.003	mg/Kg	07/06/02	QN
Chlordane	ND	1	0.008	mg/Kg	07/06/02	QN
Delta BHC	ND	1	0.005	mg/Kg	07/06/02	QN
Dieldrin	ND	1	0.003	mg/Kg	07/06/02	QN
Endosulfan I	ND	1	0.004	mg/Kg	07/06/02	QN
Endosulfan II	ND	1	0.003	mg/Kg	07/06/02	QN
Endosulfan sulfate	ND	1	0.003	mg/Kg	07/06/02	QN
Endrin	ND	1	0.004	mg/Kg	07/06/02	QN
Endrin aldehyde	ND	1	0.004	mg/Kg	07/06/02	QN
Heptachlor	ND	1	0.002	mg/Kg	07/06/02	QN
Heptachlor epoxide	ND	1	0.003	mg/Kg	07/06/02	QN
Lindane	ND	1	0.003	mg/Kg	07/06/02	QN
Methoxychlor	ND	1	0.025	mg/Kg	07/06/02	QN
Toxaphene	ND	1	0.24	mg/Kg	07/06/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	94	%	55 - 130
TCMX (Sur1)	70	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 360860 **Client:** Dept. of Toxic Substances
Matrix: WATER **Client Sample ID:** Laboratory Method Blank-W
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8081A - Organochlorine Pesticides by GC						
4,4'-DDD	ND	1	0.06	ug/L	06/29/02	QN
4,4'-DDE	ND	1	0.04	ug/L	06/29/02	QN
4,4'-DDT	ND	1	0.05	ug/L	06/29/02	QN
Aldrin	ND	1	0.03	ug/L	06/29/02	QN
Alpha BHC	ND	1	0.03	ug/L	06/29/02	QN
Beta BHC	ND	1	0.05	ug/L	06/29/02	QN
Chlordane	ND	1	0.12	ug/L	06/29/02	QN
Delta BHC	ND	1	0.07	ug/L	06/29/02	QN
Dieldrin	ND	1	0.05	ug/L	06/29/02	QN
Endosulfan I	ND	1	0.06	ug/L	06/29/02	QN
Endosulfan II	ND	1	0.05	ug/L	06/29/02	QN
Endosulfan sulfate	ND	1	0.05	ug/L	06/29/02	QN
Endrin	ND	1	0.06	ug/L	06/29/02	QN
Endrin aldehyde	ND	1	0.06	ug/L	06/29/02	QN
Heptachlor	ND	1	0.03	ug/L	06/29/02	QN
Heptachlor epoxide	ND	1	0.04	ug/L	06/29/02	QN
Lindane	ND	1	0.17	ug/L	06/29/02	QN
Methoxychlor	ND	1	0.38	ug/L	06/29/02	QN
Toxaphene	ND	1	3.54	ug/L	06/29/02	QN

Surrogates		Units	Control Limits
DCB(Sur2)	94	%	55 - 125
TCMX (Sur1)	71	%	50 - 125

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES
QA REPORT FORM

Method : EPA 8081

QC Sample: 95063-360809

Matrix: SOLID

Date Analyzed : 06/26/02

Batch Date: 6/26/02 (pest 062602s)

Applies to: LR 95063(360809-360828) QC # 2

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS

REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered		% Rec		RPD	QC Limits	
			MS	MSD	MS	MSD		RPD	% Rec
gamma-BHC (Lindane)	0.090	0.100	0.173	0.173	83	84	0	35	50-135
Heptachlor	ND	0.100	0.104	0.101	104	101	3	35	50-135
Aldrin	ND	0.100	0.093	0.090	93	90	3	35	50-135
Dieldrin	0.062	0.100	0.167	0.174	105	112	4	35	50-135
Endrin	ND	0.100	0.095	0.074	95	74	25	35	50-135
DDT	0.229	0.100	0.407	0.351	177*	122	15	35	50-135

**Matrix Interference*
ND = "U" - Not Detected
% Rec - MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate Recoveries

LAB CONTROL SPIKE / LAB CONTROL SPIKE DUPLICATE RESULTS

REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered	% Rec LCS	QC Limits % Rec
gamma-BHC (Lindane)	ND	0.100	0.067	67	60-130
Heptachlor	ND	0.100	0.082	82	60-130
Aldrin	ND	0.100	0.068	68	60-130
Dieldrin	ND	0.100	0.091	91	60-130
Endrin	ND	0.100	0.091	91	60-130
DDT	ND	0.100	0.106	106	60-130

ND = "U" - Not Detected
% Rec - LCS = Percent Recovery of Lab Control Spike

METHOD BLANK = ALL ND

ASSOCIATED LABORATORIES
QA REPORT FORM

Method : EPA 8081

QC Sample: 95063-360798

Matrix: SOLID

Date Analyzed : 07/08/02

Batch Date: 6/25/02 (pest 062502s)

Applies to: LR 95063 (360789 to 360808)

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS

REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered		% Rec		RPD	QC Limits	
			MS	MSD	MS	MSD		RPD	% Rec
gamma-BHC (Lindane)	ND	0.100	0.092	0.094	92	94	2	35	50-135
Heptachlor	ND	0.100	0.109	0.093	109	93	16	35	50-135
Aldrin	ND	0.100	0.077	0.080	77	80	4	35	50-135
Dieldrin	ND	0.100	0.109	0.111	109	111	2	35	50-135
Endrin	ND	0.100	0.106	0.107	106	107	1	35	50-135
DDT	0.013	0.100	0.118	0.118	105	105	0	35	50-135

ND = "U" - Not Detected
% Rec - MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate Recoveries

LAB CONTROL SPIKE / LAB CONTROL SPIKE DUPLICATE RESULTS

REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered	% Rec LCS	QC Limits % Rec
gamma-BHC (Lindane)	ND	0.100	0.080	80	60-130
Heptachlor	ND	0.100	0.093	93	60-130
Aldrin	ND	0.100	0.078	78	60-130
Dieldrin	ND	0.100	0.096	96	60-130
Endrin	ND	0.100	0.088	88	60-130
DDT	ND	0.100	0.100	100	60-130

ND = "U" - Not Detected
% Rec - LCS = Percent Recovery of Lab Control Spike

METHOD BLANK = ALL ND

ASSOCIATED LABORATORIES
QA REPORT FORM

Method : EPA 8081

QC Sample: 95063-368836

Matrix: SOLID

Date Analyzed : 07/10/02

Batch Date: 6/26/02 (pest 062602s-2)

Applies to: LR 95063 (360829-360837)

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS

REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered		% Rec		RPD	QC Limits	
			MS	MSD	MS	MSD		RPD	% Rec
gamma-BHC (Lindane)	ND	0.100	0.075	0.084	75	84	11	35	50-135
Heptachlor	ND	0.100	0.096	0.101	96	101	5	35	50-135
Aldrin	ND	0.100	0.073	0.075	73	75	3	35	50-135
Dieldrin	ND	0.100	0.106	0.108	106	108	2	35	50-135
Endrin	ND	0.100	0.108	0.110	108	110	2	35	50-135
DDT	ND	0.100	0.128	0.126	128	126	2	35	50-135

ND = "U" - Not Detected
% Rec - MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate Recoveries

LAB CONTROL SPIKE / LAB CONTROL SPIKE DUPLICATE RESULTS

REPORTING UNITS = mg/Kg

Test	Sample Result	Spike Added	Spike Recovered	% Rec LCS	QC Limits % Rec
gamma-BHC (Lindane)	ND	0.100	0.085	85	60-130
Heptachlor	ND	0.100	0.088	88	60-130
Aldrin	ND	0.100	0.078	78	60-130
Dieldrin	ND	0.100	0.097	97	60-130
Endrin	ND	0.100	0.093	93	60-130
DDT	ND	0.100	0.108	108	60-130

ND = "U" - Not Detected
% Rec - LCS = Percent Recovery of Lab Control Spike

METHOD BLANK = ALL ND

ASSOCIATED LABORATORIES

QA REPORT FORM

Method : EPA 8081/608

QC Sample: 95063-360838

Matrix: WATER

Date Analyzed : 07/02/02

Batch Date: 06/26/02 (pest 062602w)

Applies to: LR 95063 (360838 only) and LR 95127

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

REPORTING UNITS = ug/L

Test	Sample Result	Spike Added	Matrix Spike	Matrix Spk. Dup	% Rec MS	% Rec MSD	RPD	QC Limits RPD	QC Limits % Rec
gamma-BHC (Lindane)	ND	2.50	2.20	2.18	88	87	1	35	55-130
Heptachlor *	ND	2.50	2.44	**1.56**	97	**62**	**44**	35	55-130
Aldrin *	ND	2.50	2.02	**1.00**	81	**40**	**67**	35	55-130
Dieldrin	ND	2.50	2.31	2.06	92	82	11	35	55-130
Endrin	ND	2.50	2.40	2.20	96	88	9	35	55-130
DDT *	ND	2.50	2.35	**1.04**	94	**41**	**77**	35	55-130

**** MSD outside control limits - Due to prep error sample went dry.***

ND = "U" - Not Detected

% Rec - MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate Recoveries

LAB CONTROL SPIKE RECOVERY / METHOD BLANK

Test	Spike Added	LCS Result	LCS % Rec	Limits % Rec
gamma-BHC (Lindane)	2.50	2.11	84	55-130
Heptachlor	2.50	2.23	89	55-130
Aldrin	2.50	1.99	80	55-130
Dieldrin	2.50	2.28	91	55-130
Endrin	2.50	2.23	89	55-130
DDT	2.50	2.31	93	55-130

Method Blank = All ND

Associated Laboratories
Contract No. 98-T1655

DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC)
TASK ORDER INVOICE APPROVAL FORM

1. Name of Contractor: ASSOCIATED LABORATORIES
2. Address (For remitting payment): 806 N. Batavia ORANGE, CA. 92868
3. Name, Title, & Phone # of Contact person: BILL UHER 714-771-6900
4. Invoice No. 271878
5. Contract No. 98-T1655
6. Task Order No. 2-655-3.0
7. Site Name: _____
8. Is this the final Invoice for Task Order (YES) NO ____
9. Period of Billing: _____
10. Lab # 95063 Invoice # 271878
11. Subtotal of Subtasks
    (Amount from attached Contractors Invoice) $ 4,512.00
12. Less Retention this Invoice: _____
13. Net payment due this Invoice $ 4,512.00
14. I hereby certify under penalty of perjury that I'am the official in and for said Contractor responsible for examination and settlement of accounts; that I have not violated any of the provisions of Section 1090 and 1096 inclusive of the Government Code; that the costs claimed are in accordance with the task order issued and the Zone Contract; that warrants, therefore, have been issued or expenditures otherwise incurred according to law; and that the Contractor assumes financial responsibility and accountability for all funds transferred via this Invoice Form, including any audit exceptions that may arise.

    7/24/02
    Signature of Authorized Contract Agent / Date

15. I certify to the best of my knowledge that the contractor has completed the work described on this invoice.

    _____
    Signature of DTSC Contract Manager / Date

16. DTSC Amount Approved for: $ _____
    Less Retention: $ _____
    DTSC Approved Net Payment $ _____

Cooler Receipt Form

Client: DTSC Project: Weemes Chlordane Project #1
Cooler Received: 6-21-02 Cooler Opened: 6-21-02 By: Ken Wolfe
Signed:

Was cooler scanned for presence of radioactivity, and noted if found? Yes / No

Were custody seals present on outside of cooler? Yes / No
a: If Yes, were they intact? Yes / No
b: Were signature and date correct? Yes / No

Were custody papers completely filled out? Yes / No

Did you sign and date the custody papers in the appropriate place? Yes / No

Was a shippers packing slip attached to the cooler? Yes / No

What kind of packing material was used? ice

Was sufficient ice used? Yes / No Temperature: 0.2°C Date: 6-21-02

Were all bottles sealed in plastic bags? Yes / No

Did all bottles arrive intact? Yes / No

Were all bottles labeled correctly? (ID, Analysis, Dates, Times) Yes / No

Were the correct containers included for the tests required? Yes / No

Were all VOA vials checked for headspace? NA / Yes / No

Was sufficient volume of sample sent in all containers? Yes / No

Were correct preservatives used? Yes / No

Approved by: Date: 6-21-02
If not approved: Name of person contacted Date:

ASSOCIATED LABORATORIES
806 N. Batavia • Orange, CA 92868
(714) 771-6900 • Fax: (714) 538-1209

95063

CHAIN OF CUSTODY RECORD

Date 6-21-02 Page 1 of 4

CLIENT DTSC
ADDRESS 1011 N. Grandview Ave. Glendale, CA 91201
PROJECT NAME Weemes Chlordane Project #1

PROJECT MANAGER Jennifer Jones
PHONE NUMBER (818) 551-2973
SAMPLERS: (Signature)

Samples Intact Yes ✓ No ___
County Seals Intact Yes ___ No ✓
Sample Ambient ___ Cooled ✓ Frozen ___
Same Day ___ 24 Hr. ___
Regular ✓ 48 Hr. ___

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE WATER	AIR	SOLID	NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
WEM 01-0.5	1215 37th Str SW corner	6/21/02	8:21			X	1		8081A
WEM 01-2	" " "		8:26			X	1		"
WEM 01-4	" " "		8:29			X	1		"
WEM 02-0.5	" " SE corner		8:15			X	1		"
WEM 02-2	" " "	6/21/02	8:20			X	1		"
WEM 02-4	" " "		8:25			X	1		"
WEM 03-0.5	" " NE corner		8:40			X	1		"
WEM 03-2	" " "		8:50			X	1		"
WEM 03-4	" " "	6/21/02	9:00			X	1		"
WEM 17-0.5	" " crawl space		9:05			X	1		"
WEM 4-0.5	" " NW corner		8:45			X	1		"
WEM 4-2	" " "		8:50			X	1		"
WEM 4-4	" " "		8:52			X	1		"

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]	[signature]	6/21/02 3:50
Relinquished by: (Signature) [signature]	Received by Laboratory for analysis: (Signature) [signature] Ken Kersey	Date/Time 1725 6-21-02

Special Instructions:

I hereby authorize the performance of the above indicated work.
[signature]

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CHAIN OF CUSTODY RECORD

Date 6-21-02 Page 2 of 4

CLIENT DTSC
ADDRESS 1011 N. Grandview Ave
Glendale, CA 91201
PROJECT NAME Weemes Chlordane Project #1

PROJECT MANAGER Jennifer Jones
PHONE NUMBER (818) 551-2973
SAMPLERS: (Signature)

Samples Intact Yes ✓ No ___
County Seals Intact Yes ___ No ✓
Sample Ambient ___ Cooled ✓ Frozen ___
Same Day ___ 24 Hr. ___
Regular ✓ 48 Hr. ___

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE WATER	AIR	SOLID	NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
WEM06-0.5	1207 W. 37th Str. SE corner	6/21/02	9:10			X	1		8081A
WEM 06-2	" "	6/21/02	9:15			X	1		8081A
WEM 06-4	" "	6/21/02	9:20			X	1		
WEM06-4DUP	" "	6/21/02	9:20			X	1		
WEM05-0.5	" SW corner	6/21/02	9:13			X	1		
WEM05-2	" "	6/21/02	9:15			X	1		
WEM05-4	" "	6/21/02	9:20			X	1		
WEM 07-0.5	" NE corner	6/21/02	9:29			X	1		
WEM 07-2	" "		9:33			X	1		
WEM07-4	" "		9:37			X	1		
WEM08-0.5	" NW corner		9:38			X	1		
WEM08-2	" "		9:42			X	1		
WEM08-4	" "		9:50			X	1		

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]	[signature]	6-21-02 2:50
Relinquished by: (Signature) [signature]	Received by Laboratory for analysis: (Signature) [signature] Ken Hufsch	Date/Time 17:25 6-21-02

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CHAIN OF CUSTODY RECORD

Date 6-21-02 Page 3 of 4

CLIENT DTSC
ADDRESS 1011 N. Grandview Ave, Glendale, CA 91201
PROJECT NAME Weemes Chlordane Project #1

PROJECT MANAGER Jennifer Jones
PHONE NUMBER (818) 551-2973
SAMPLERS: (Signature)

Samples Intact Yes ✓ No ___
County Seals Intact Yes ___ No ✓
Sample Ambient ___ Cooled ✓ Frozen ___
Same Day ___ 24 Hr. ___
Regular ✓ 48 Hr. ___

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE WATER	AIR	SOLID	NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
~~WEM8A 0.5~~	~~1207 W 37th Street NW corner~~	6/21/02	9:32			X	1		~~8081A~~
WEM 9-0.5	1205 W 37th SW corner	6/21/02	9:58			X	1		8081A
WEM 9-2	" "	6/21/02	10:08			X	1		
WEM 9-4	" "	6/21/02	10:15			X	1		
WEM 10-0.5	1205 W 37th SE corner		10:00			X	1		
WEM 10-2	" "		10:05			X	1		
WEM 10-4	" "		10:10			X	1		
WEM 18-0.5	1205 W 37th crawl space		10:13			X	1		
WEM 11-0.5	1205 W 37th NE corner		10:20			X	1		
WEM 11-2	" "		10:25			X	1		
WEM 12-0.5	" NW corner		10:25			X	1		
WEM 12-2'		6/21/02	10:35			X	1		
WEM 12-4'		6/21/02	10:36			X	1		

Relinquished by: (Signature) [signature]
Received by: (Signature) [signature]
Date/Time 6-21-02 2:50

Relinquished by: (Signature) [signature]
Received by Laboratory for analysis: (Signature) [signature] Ken Hulsey
Date/Time 1720 6-21-02

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[signature]

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CHAIN OF CUSTODY RECORD

Date 6/21/02 Page 4 of 4

CLIENT DTSC
ADDRESS 1011 N. Grandview Ave
Glendale, CA 91201
PROJECT NAME Weemes Chlordane Project #1

PROJECT MANAGER Jennifer Jones
PHONE NUMBER (818) 551-2972
SAMPLERS: (Signature)

Samples Intact Yes ✓ No ___
County Seals Intact Yes ___ No ✓
Sample Ambient ___ Cooled ✓ Frozen ___
Same Day ___ 24 Hr. ___
Regular ✓ 48 Hr. ___

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE WATER	AIR	SOLID	NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
WEM 19-0.5	Crawl space	6/21/02	10:03			✓	1		8081A
WEM 13-0.5'	1201-1203 W. 37th St. SE Cor.	6/21/02	10:47			✓	1		
WEM 13-2'			10:50			✓	1		
WEM 13-4'			11:00			✓	1		
WEM 14-0.5'	1201-1203 W. 37th St. SW corner		10:45			✓	1		
WEM 14-2'			10:52			✓	1		
WEM 14-4'			10:56			✓	1		
WEM 16-0.5'	1201-1203 W. 37th St. NW corner		11:03			✓	1		
WEM 16-2'			11:07			✓	1		
WEM 16-4'			11:12			✓	1		
WEM 16-2' DUP			11:07			✓	1		
WEM-R	Rinsate sample		11:20	X			1		

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]	[signature]	6-21-02 2:50
Relinquished by: (Signature) [signature]	Received by Laboratory for analysis: (Signature) [signature] Kent Wisq	Date/Time 6-21-02 (7:25

Special Instructions:

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[signature]

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Appendix C

Detailed Risk and Hazard Calculations

Incidental Ingestion of Soil
(Surface Soils, 0- to 0.5-feet bgs.)

COPC	Representative Soil Concentration (mg/kg)	Residential Lifetime Average Daily Intake (mg/kg-day)	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$	Incremental Carcinogenic Risk		Residential Average Daily Intake (mg/kg-day)	Oral RfD (mg/kg-day)	Noncarcinogenic Hazard Quotient
Organochlorine Pesticides								
Chlordane	36	5.65E-05	1.30E+00	7.35E-05		4.61E-04	5.00E-04	9.22E-01
4,4'-DDD	1.1	1.73E-06	2.40E-01	4.14E-07		1.41E-05	5.00E-04	2.82E-02
4,4'-DDE	1.4	2.20E-06	3.40E-01	7.47E-07		1.79E-05	5.00E-04	3.58E-02
4,4'-DDT	16	2.51E-05	3.40E-01	8.54E-06		2.05E-04	5.00E-04	4.10E-01
Dieldrin	2.72	4.27E-06	1.60E+01	6.83E-05		3.48E-05	5.00E-05	6.96E-01
Endosulfan I	0.6	N/A	N/A	N/A		7.68E-06	6.00E-03	1.28E-03
Endrin	0.08	N/A	N/A	N/A		1.02E-06	3.00E-04	3.41E-03
Endrin aldehyde	0.5	N/A	N/A	N/A		6.40E-06	3.00E-04	2.13E-02
Heptachlor	0.5	7.85E-07	4.10E+00	3.22E-06		6.40E-06	5.00E-04	1.28E-02
Heptachlor epoxide	0.108	1.70E-07	5.50E+00	9.33E-07		1.38E-06	1.30E-05	1.06E-01
Lindane (γ–Hexachlorocyclohexane)	0.089	1.40E-07	1.10E+00	1.54E-07		1.14E-06	3.00E-04	3.80E-03
			Total Risk	**1.6E-04**			**Hazard Index**	**2.24E+00**

Dermal Contact with Soil
(Surface Soils, 0- to 0.5-feet bgs.)

COPC	Representative Soil Concentration (mg/kg)	Dermal Absorption Factor	Residential Lifetime Average Daily Intake (mg/kg-day)	Dermal Slope Factor $(mg/kg\text{-}day)^{-1}$	Incremental Carcinogenic Risk		Residential Average Daily Intake (mg/kg-day)	Dermal RfD (mg/kg-day)	Noncarcinogenic Hazard Quotient
Organochlorine Pesticides									
Chlordane	36	0.05	6.68E-06	1.30E+00	8.68E-06		6.95E-05	5.00E-04	1.39E-01
4,4'-DDD	1.1	0.05	2.04E-07	2.40E-01	4.90E-08		2.12E-06	5.00E-04	4.25E-03
4,4'-DDE	1.4	0.05	2.60E-07	3.40E-01	8.83E-08		2.70E-06	5.00E-04	5.40E-03
4,4'-DDT	16	0.05	2.97E-06	3.40E-01	1.01E-06		3.09E-05	5.00E-04	6.18E-02
Dieldrin	2.72	0.05	5.05E-07	1.60E+01	8.07E-06		5.25E-06	5.00E-05	1.05E-01
Endosulfan I	0.6	0.05	N/A	N/A	N/A		1.16E-06	6.00E-03	1.93E-04
Endrin	0.08	0.05	N/A	N/A	N/A		1.54E-07	3.00E-04	5.15E-04
Endrin aldehyde	0.5	0.05	N/A	N/A	N/A		9.65E-07	3.00E-04	3.22E-03
Heptachlor	0.5	0.05	9.28E-08	4.10E+00	3.80E-07		9.65E-07	5.00E-04	1.93E-03
Heptachlor epoxide	0.108	0.05	2.00E-08	5.50E+00	1.10E-07		2.08E-07	1.30E-05	1.60E-02
Lindane (γ–Hexachlorocyclohexane)	0.089	0.05	1.65E-08	1.10E+00	1.82E-08		1.72E-07	3.00E-04	5.73E-04
				Total Risk	**1.84E-05**			**Hazard Index**	**3.38E-01**

Inhalation of Suspended Soil Particulates
(Surface Soils, 0- to 0.5-feet bgs.)

COPC	Representative Soil Concentration (mg/kg)	Air Concentration of Suspended Particulate (mg/m^3)	Residential Lifetime Average Daily Intake (mg/kg-day)	Inhalation Slope Factor $(mg/kg\text{-}day)^{-1}$	Incremental Carcinogenic Risk		Residential Average Daily Intake (mg/kg-day)	Inhalation RfD (mg/kg-day)	Noncarcinogenic Hazard Quotient
Organochlorine Pesticides									
Chlordane	36	3.60E-08	5.36E-09	1.20E+00	6.44E-09		2.30E-08	2.00E-04	1.15E-04
4,4'-DDD	1.1	1.10E-09	1.64E-10	2.40E-01	3.93E-11		7.03E-10	5.00E-04	1.41E-06
4,4'-DDE	1.4	1.40E-09	2.09E-10	3.40E-01	7.09E-11		8.95E-10	5.00E-04	1.79E-06
4,4'-DDT	16	1.60E-08	2.38E-09	3.40E-01	8.11E-10		1.02E-08	5.00E-04	2.04E-05
Dieldrin	2.72	2.72E-09	4.05E-10	1.60E+01	6.48E-09		1.74E-09	5.00E-05	3.48E-05
Endosulfan I	0.6	6.00E-10	N/A	N/A	N/A		3.83E-10	6.00E-03	6.39E-08
Endrin	0.08	8.00E-11	N/A	N/A	N/A		5.11E-11	3.00E-04	1.70E-07
Endrin aldehyde	0.5	5.00E-10	N/A	N/A	N/A		3.20E-10	3.00E-04	1.07E-06
Heptachlor	0.5	5.00E-10	7.45E-11	4.10E+00	3.05E-10		3.20E-10	5.00E-04	6.39E-07
Heptachlor epoxide	0.108	1.08E-10	1.61E-11	5.50E+00	8.85E-11		6.90E-11	1.30E-05	5.31E-06
Lindane (γ–Hexachlorocyclohexane)	0.089	8.90E-11	1.33E-11	1.10E+00	1.46E-11		5.69E-11	3.00E-04	1.90E-07
				Total Risk	**1.43E-08**			**Hazard Index**	**1.81E-04**

Incidental Ingestion of Soil
(Subsurface Soils, 2- to 4-feet bgs.)

COPC	Representative Soil Concentration (mg/kg)	Residential Lifetime Average Daily Intake (mg/kg-day)	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$	Incremental Carcinogenic Risk		Residential Average Daily Intake (mg/kg-day)	Oral RfD (mg/kg-day)	Noncarcinogenic Hazard Quotient
Organochlorine Pesticides								
Chlordane	0.14	2.20E-07	1.30E+00	2.86E-07		1.79E-06	5.00E-04	3.58E-03
4,4'-DDD	0.096	1.51E-07	2.40E-01	3.62E-08		1.23E-06	5.00E-04	2.46E-03
4,4'-DDE	0.209	3.28E-07	3.40E-01	1.12E-07		2.68E-06	5.00E-04	5.35E-03
4,4'-DDT	0.486	7.63E-07	3.40E-01	2.59E-07		6.22E-06	5.00E-04	1.24E-02
			Total Risk	**6.9E-07**			**Hazard Index**	**2.38E-02**

Dermal Contact with Soil
(Subsurface Soils, 2- to 4-feet bgs.)

COPC	Representative Soil Concentration (mg/kg)	Dermal Absorption Factor	Residential Lifetime Average Daily Intake (mg/kg-day)	Dermal Slope Factor (mg/kg-day)$^{-1}$	Incremental Carcinogenic Risk		Residential Average Daily Intake (mg/kg-day)	Dermal RfD (mg/kg-day)	Noncarcinogenic Hazard Quotient
Organochlorine Pesticides									
Chlordane	0.14	0.05	2.60E-08	1.30E+00	3.38E-08		2.70E-07	5.00E-04	5.40E-04
4,4'-DDD	0.096	0.05	1.78E-08	2.40E-01	4.27E-09		1.85E-07	5.00E-04	3.71E-04
4,4'-DDE	0.209	0.05	3.88E-08	3.40E-01	1.32E-08		4.03E-07	5.00E-04	8.07E-04
4,4'-DDT	0.486	0.05	9.02E-08	3.40E-01	3.07E-08		9.38E-07	5.00E-04	1.88E-03
				Total Risk	**8.19E-08**			**Hazard Index**	**3.59E-03**

Inhalation of Suspended Soil Particulates
(Subsurface Soils, 2- to 4-feet bgs.)

COPC	Representative Soil Concentration (mg/kg)	Air Concentration of Suspended Particulate (mg/m^3)	Residential Lifetime Average Daily Intake (mg/kg-day)	Inhalation Slope Factor $(mg/kg\text{-}day)^{-1}$	Incremental Carcinogenic Risk		Residential Average Daily Intake (mg/kg-day)	Inhalation RfD (mg/kg-day)	Noncarcinogenic Hazard Quotient
Organochlorine Pesticides									
Chlordane	0.14	1.40E-10	2.09E-11	1.20E+00	2.50E-11		8.95E-11	2.00E-04	4.47E-07
4,4'-DDD	0.096	9.60E-11	1.43E-11	2.40E-01	3.43E-12		6.13E-11	5.00E-04	1.23E-07
4,4'-DDE	0.209	2.09E-10	3.11E-11	3.40E-01	1.06E-11		1.34E-10	5.00E-04	2.67E-07
4,4'-DDT	0.486	4.86E-10	7.24E-11	3.40E-01	2.46E-11		3.11E-10	5.00E-04	6.21E-07
				Total Risk	**6.37E-11**			**Hazard Index**	**1.46E-06**