

July 16, 1998

Mr. Don Lapidus  
Greystone Homes  
South Bay Division  
920 Hillview Court, # 280  
Milpitas, CA 95035

Re: Additional Environmental Services  
Shallow Soil Testing  
Meek Orchard Property, Hayward, CA  
Project No.: M174-EB

Etch Room:  
- Was drain trough / sump  
excavated and confirmation SS  
collected?

103 Orchard Ave  
Hayward

Dear Mr. Lapidus:

This letter presents the results of additional environmental services performed at the above-referenced site. The results of our Phase I preliminary site assessment (PSA), dated July 1, 1998, indicated the potential for soil contamination due to historical site use in the areas of the rail spur, old orchard area, and etching room area. This investigation was conducted to evaluate the potential presence for soil contamination in these areas. Shallow soil samples were collected around the northern and southern rail spur for analysis of hydrocarbons; in the central portion of the site for analysis of volatile organic compounds (VOCs), organochlorine pesticides, lead, and arsenic; and in the area of the etching room for analysis of VOCs, chromium, copper, lead, nickel, silver, and zinc.

## SITE LOCATION

The site is located in Hayward, California, and is shown on the attached Site Vicinity Map, Figure 1. The approximately nine-acre site is bounded by Southern Pacific Railroad tracks to the west, Orchard Avenue to the north, Berry Avenue to the south, residences along Lucien Way to the northeast, and a concrete-lined flood control channel to the southeast.

## SOIL SAMPLING AND ANALYSIS

On July 7, 1998, Harza collected shallow soil samples from across the site in the areas identified in Figure 2, Meek Orchard Soil Sample Locations. A brief description of each sampling area follows.

Harza Engineering Company, Western Division  
425 Roland Way Oakland, California 94621  
Tel: (510) 568-4001 Fax: (510) 568-2205

M174EBRP.001  
07-16-98

Etching Room: In order to identify the existence of hazardous materials in the area of the former etching room, a sample of the concrete lined trench (Drain-1) was collected and analyzed for VOCs using EPA method 8240 and select metals using EPA Series 6000/7000.

Central Portion (Old Orchard Area): Soil samples were collected at depths of approximately 12 inches below ground surface (bgs) from four locations (C-1,C-2,C-3,C-4) in the central area of the site. Based on the historical use of this area as an orchard, soil samples were analyzed for VOCs using EPA Method 8240, pesticides using EPA Method 8080, and arsenic and lead using EPA Method Series 6000/7000.

Rail Spurs: As indicated in our previous investigation, railroad spurs are present on the western portion of the site. It has been our experience that old railroad spurs can be a potential source of contamination. In order to evaluate this area, one soil sample from the southern spur (RS-1) was collected from a depth of 12 inches bgs, and soil samples were collected from the northern rail spur (RS-2) at depths of 12 and 36 inches bgs. All samples were analyzed for diesel and motor oil range hydrocarbons using EPA Method 8015M.

All soil samples were collected using hand tools, stored in glass containers, labeled and placed in a cooler for transport to the analytical laboratory. Sampling tools were cleaned between collection locations to minimize the potential for cross-contamination.

Samples were analyzed by Columbia Analytical Services, Inc. (CAS) of Santa Clara, California. CAS is certified by the State of California for the analyses performed.

## ANALYTICAL RESULTS

Analytical results are summarized on Table 1, and laboratory analytical reports are attached to this letter.

### Etching Room

In the area of the etching room, VOCs were below laboratory method reporting limits (MRLs). With the exception of total chromium reported at a concentration of 950 parts per million (ppm), all other metals were reported at levels below stated regulated limits in the sample collected from the etching room (Drain-1).

### Central Portion (Old Orchard Area)

Arsenic and lead were reported at low levels in all soil samples collected from the central portion of the site. Concentrations of these constituents were reported at or below state regulated preliminary remediation goals (PRGs). VOCs were reported below laboratory MRLs in samples C-1 and C-2. Laboratory results indicated low levels of acetone and methylene-chloride in soil samples collected from locations C-3 and C-4. The laboratory indicated that dieldrin was present at a concentration slightly above PRGs in sample C-1. Pesticides were not reported above laboratory MRLs in any other soil samples collected from the central portion of the site.

### Railroad Spurs

In the area of the northern and southern rail spur, diesel and motor oil range hydrocarbons were below laboratory reporting limits.

## **DISCUSSION**

Concentrations of constituents detected in soil samples were compared to PRGs for residential site use. PRGs are health risk-based concentrations developed by the Region IX U.S. Environmental Protection Agency (EPA). Although they are non-binding, they are typically used at sites such as this to provide a preliminary evaluation of contaminant levels. PRGs for compounds of concern for this investigation are shown of Table 1.

The chromium level in the concrete sample collected from the etching room drain trough was reported above the residential PRG. In our reconnaissance of this area, we did not find evidence of cracking in the concrete of the trough or sump. Due to the lack of other metals and VOCs in the concrete, it is our opinion that the chromium value is localized to the immediate area of the trough and sump. During construction activities we would recommend proper disposal of the concrete debris and shallow soil surrounding this area.

In sample C-1 collected from the central portion of the site, dieldrin was detected in a concentration slightly above PRGs. This should not present a concern for future development of the property as it will be dispersed during normal construction activities and was not detected in the other soil samples collected from this area.

In conclusion, other than the aforementioned chromium and its proper disposal, our field investigation did not reveal the presence of any significant environmental concern that would preclude development of the site.

## LIMITATIONS

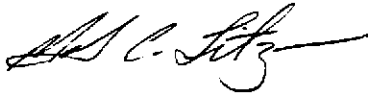
No investigation is thorough enough to absolutely rule out the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the investigation, such a finding should not therefore be construed as a guarantee of the absence of such materials on the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

Environmental conditions may exist at the site that cannot be identified by visual observation. Our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Should you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

**Harza Engineering Company of California**



Mark C. Litzau  
Manager, Environmental and Regulatory Services

ML:rl/encl.  
Copies: Addressee (2)

*R. Kelly*

TABLE

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HARZA

**TABLE 1**  
**Soil Analytical Results**  
**Meek Orchard**  
**Hayward, California**

Sample Location	Drain-1	RS-1	RS-2	RS-2	C-1	C-2	C-3	C-4	PRG
Depth	12"	12"	12"	36"	12"	12"	12"	12"	
Description	concrete	native soil	native soil	native soil	native soil	native soil	native soil	native soil	
<b>Petroleum Hydrocarbons</b>									
Diesel		ND	ND	ND					none
Motor Oil		ND	ND	ND					none
<b>Pesticides</b>									
DDD					ND	ND	ND	ND	1.9
DDE					ND	ND	ND	ND	1.3
DDT					ND	ND	ND	ND	1.3
Dieldrin					0.03	ND	ND	ND	0.028
<b>Metals</b>									
Arsenic					17	16	22	21	22
Lead	78				62	11	39	17	130
Chromium	950								210
Copper	28								2800
Nickel	19								150
Silver	ND								380
Zinc	760								23000

**NOTES**

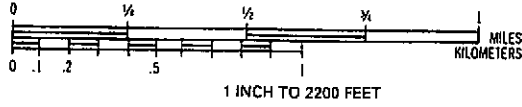
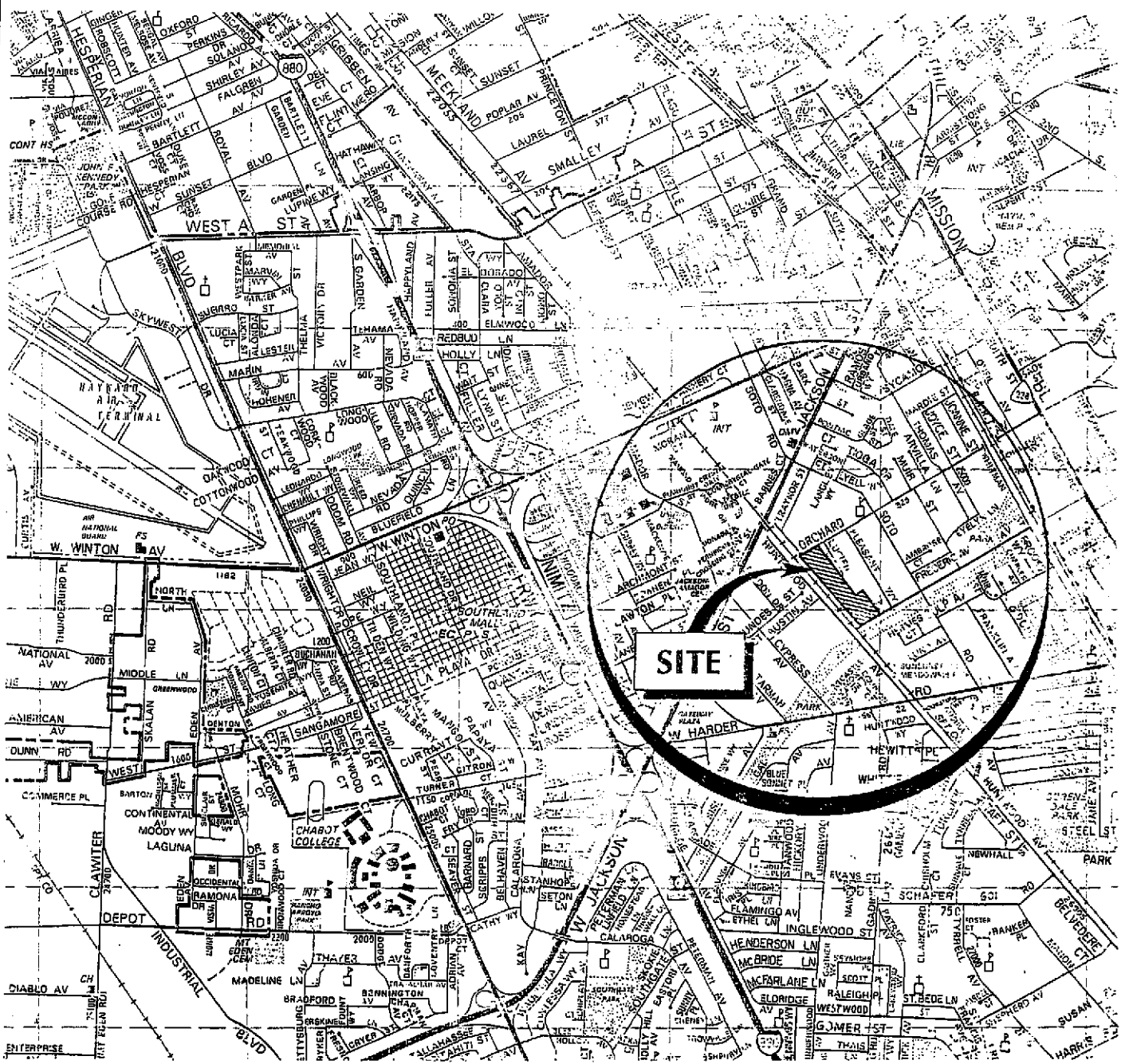
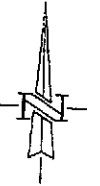
All results in parts per million, or milligrams per kilogram

PRG: Preliminary Remediation Goal for residential use (U.S. EPA Region IX, August 1, 1996)

**FIGURES**

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HARZA



BASE: THOMAS BROS. MAP GUIDE, ALAMEDA/CONTRA COSTA COUNTIES, 1994

G:\USERS\ACAD\CADWORK\98-6-1

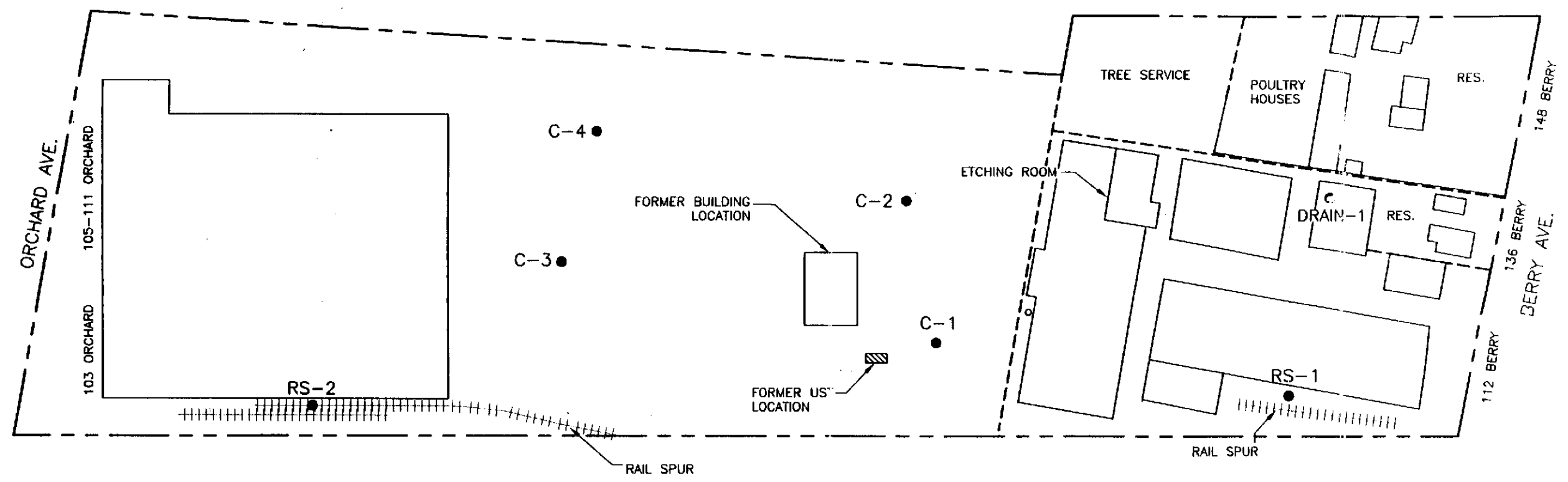
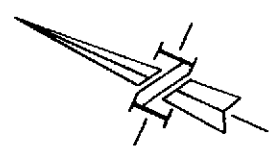
Rev.	Drawn By	Chk'd By	Date
0	H.H.	M.L.	06/24/98

**HARZA**

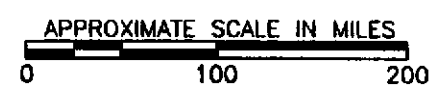
SITE VICINITY MAP  
 MEEK ORCHARD PSA  
 Hayward, California

Figure  
**1**  
 Project No.  
 M174-EB





*Env Sampling*



BASE: ENVIRONMENTAL RISK INFORMATION & IMAGING SERVICES, Herndon, VA, dated 1998.

G:\USERS\ACADWORK\M174EB\98-7-2

Rev.	Drawn By	Chk'd By	Date
0	H.H.	M.L.	6/25/98
1	H.H.	M.L.	7/15/98

**HARZA**

SITE PLAN	Figure
MEEK ORCHARD SOIL SAMPLE LOCATIONS	<b>2</b>
Hayward, California	Project No.
	M174-EB

**LABORATORY ANALYTICAL REPORTS**

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HARZA



July 9, 1998

Service Request No.: S9801785

Mark Litzau  
Harza Consulting Engineers and Scientists  
425 Roland Way  
Oakland, CA 94621

**RE: MEEK ORCHARD/M174-EB**

Dear Mr. Litzau:

The following pages contain analytical results for sample(s) received by the laboratory on July 7, 1998. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above. To help expedite our service, please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 15, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely,

Steven L. Green  
Project Chemist

**COLUMBIA ANALYTICAL SERVICES, Inc.**

**Acronyms**

<b>A2LA</b>	American Association for Laboratory Accreditation
<b>ASTM</b>	American Society for Testing and Materials
<b>BOD</b>	Biochemical Oxygen Demand
<b>BTEX</b>	Benzene, Toluene, Ethylbenzene, Xylenes
<b>CAM</b>	California Assessment Metals
<b>CARB</b>	California Air Resources Board
<b>CAS Number</b>	Chemical Abstract Service registry Number
<b>CFC</b>	Chlorofluorocarbon
<b>CFU</b>	Colony-Forming Unit
<b>COD</b>	Chemical Oxygen Demand
<b>DEC</b>	Department of Environmental Conservation
<b>DEQ</b>	Department of Environmental Quality
<b>DHS</b>	Department of Health Services
<b>DLCS</b>	Duplicate Laboratory Control Sample
<b>DMS</b>	Duplicate Matrix Spike
<b>DOE</b>	Department of Ecology
<b>DOH</b>	Department of Health
<b>EPA</b>	U. S. Environmental Protection Agency
<b>ELAP</b>	Environmental Laboratory Accreditation Program
<b>GC</b>	Gas Chromatography
<b>GC/MS</b>	Gas Chromatography/Mass Spectrometry
<b>IC</b>	Ion Chromatography
<b>ICB</b>	Initial Calibration Blank sample
<b>ICP</b>	Inductively Coupled Plasma atomic emission spectrometry
<b>ICV</b>	Initial Calibration Verification sample
<b>J</b>	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
<b>LCS</b>	Laboratory Control Sample
<b>LUFT</b>	Leaking Underground Fuel Tank
<b>M</b>	Modified
<b>MBAS</b>	Methylene Blue Active Substances
<b>MCL</b>	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
<b>MDL</b>	Method Detection Limit
<b>MPN</b>	Most Probable Number
<b>MRL</b>	Method Reporting Limit
<b>MS</b>	Matrix Spike
<b>MTBE</b>	Methyl tert-Butyl Ether
<b>NA</b>	Not Applicable
<b>NAN</b>	Not Analyzed
<b>NC</b>	Not Calculated
<b>NCASI</b>	National Council of the paper industry for Air and Stream Improvement
<b>ND</b>	Not Detected at or above the method reporting/detection limit (MRL/MDL)
<b>NIOSH</b>	National Institute for Occupational Safety and Health
<b>NTU</b>	Nephelometric Turbidity Units
<b>ppb</b>	Parts Per Billion
<b>ppm</b>	Parts Per Million
<b>PQL</b>	Practical Quantitation Limit
<b>QA/QC</b>	Quality Assurance/Quality Control
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>RPD</b>	Relative Percent Difference
<b>SIM</b>	Selected Ion Monitoring
<b>SM</b>	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
<b>STLC</b>	Solubility Threshold Limit Concentration
<b>SW</b>	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>TDS</b>	Total Dissolved Solids
<b>TPH</b>	Total Petroleum Hydrocarbons
<b>tr</b>	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
<b>TRPH</b>	Total Recoverable Petroleum Hydrocarbons
<b>TSS</b>	Total Suspended Solids
<b>TTLC</b>	Total Threshold Limit Concentration
<b>VOA</b>	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: HARZA  
Project: MEEK ORCHARD/M174-EB  
Sample Matrix: Solid

Service Request: S9801785  
Date Collected: 7/7/98  
Date Received: 7/7/98

Total Metals

Sample Name: DRAIN-1  
Lab Code: S9801785-001  
Test Notes:

Units: mg/Kg (ppm)  
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Chromium	EPA 3050BM	6010A	1	5	7/7/98	7/8/98	950	
Copper	EPA 3050BM	6010A	1	1	7/7/98	7/7/98	28	
Lead	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	78	
Nickel	EPA 3050BM	6010A	2	1	7/7/98	7/7/98	19	
Silver	EPA 3050BM	6010A	2	1	7/7/98	7/7/98	ND	
Zinc	EPA 3050BM	6010A	2	1	7/7/98	7/7/98	760	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Solid

**Service Request:** S9801785  
**Date Collected:** NA  
**Date Received:** NA

**Total Metals**

**Sample Name:** Method Blank  
**Lab Code:** S980707-MB  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Chromium	EPA 3050BM	6010A	1	1	7/7/98	7/7/98	ND	
Copper	EPA 3050BM	6010A	1	1	7/7/98	7/7/98	ND	
Lead	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	ND	
Nickel	EPA 3050BM	6010A	2	1	7/7/98	7/7/98	ND	
Silver	EPA 3050BM	6010A	2	1	7/7/98	7/7/98	ND	
Zinc	EPA 3050BM	6010A	2	1	7/7/98	7/7/98	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** 7/7/98  
**Date Received:** 7/7/98

**Total Metals**

**Sample Name:** C-1/1'  
**Lab Code:** S9801785-002  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Arsenic	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	17	
Lead	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	62	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** 7/7/98  
**Date Received:** 7/7/98

**Total Metals**

**Sample Name:** C-2/1'  
**Lab Code:** S9801785-003  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Arsenic	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	16	
Lead	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	11	



**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** 7/7/98  
**Date Received:** 7/7/98

**Total Metals**

**Sample Name:** C-3/1'  
**Lab Code:** S9801785-004  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Arsenic	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	22	
Lead	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	39	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: HARZA  
Project: MEEK ORCHARD/M174-EB  
Sample Matrix: Soil

Service Request: S9801785  
Date Collected: 7/7/98  
Date Received: 7/7/98

Total Metals

Sample Name: C-4/1'  
Lab Code: S9801785-005  
Test Notes:

Units: mg/Kg (ppm)  
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result	Notes
Arsenic	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	21		
Lead	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	17		

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** NA  
**Date Received:** NA

**Total Metals**

**Sample Name:** Method Blank  
**Lab Code:** S980707-MB  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Arsenic	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	ND	
Lead	EPA 3050BM	6010A	5	1	7/7/98	7/7/98	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** 7/7/98  
**Date Received:** 7/7/98

**Hydrocarbon Scan**

**Sample Name:** RS-1/1'  
**Lab Code:** S9801785-006  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Diesel	LUFT	Modified EPA 8015	1	1	7/7/98	7/7/98	ND	
Motor Oil	LUFT	Modified EPA 8015	5	1	7/7/98	7/7/98	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** 7/7/98  
**Date Received:** 7/7/98

**Hydrocarbon Scan**

**Sample Name:** RS-2/1'  
**Lab Code:** S9801785-007  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Diesel	LUFT	Modified EPA 8015	1	1	7/7/98	7/8/98	ND	
Motor Oil	LUFT	Modified EPA 8015	5	1	7/7/98	7/8/98	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** 7/7/98  
**Date Received:** 7/7/98

**Hydrocarbon Scan**

**Sample Name:** RS-2/3'  
**Lab Code:** S9801785-008  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Diesel	LUFT	Modified EPA 8015	1	1	7/7/98	7/8/98	ND	
Motor Oil	LUFT	Modified EPA 8015	5	1	7/7/98	7/8/98	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** NA  
**Date Received:** NA

**Hydrocarbon Scan**

**Sample Name:** Method Blank  
**Lab Code:** S980707-MB  
**Test Notes:**

**Units:** mg/Kg (ppm)  
**Basis:** Wet

<b>Analyte</b>	<b>Prep Method</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Result</b>	<b>Result Notes</b>
Diesel	LUFT	Modified EPA 8015	1	1	7/7/98	7/8/98	ND	
Motor Oil	LUFT	Modified EPA 8015	5	1	7/7/98	7/8/98	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.**

**QA/QC Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801785  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** NA  
**Date Analyzed:** NA

**Surrogate Recovery Summary  
Hydrocarbon Scan**

**Prep Method:** LUFT  
**Analysis Method:** Modified EPA 8015

**Units:** PERCENT  
**Basis:** NA

<b>Sample Name</b>	<b>Lab Code</b>	<b>Test Notes</b>	<b>Percent Recovery p-Terphenyl</b>
RS-1/1'	S9801785-006		47
RS-2/1'	S9801785-007		63
RS-2/3'	S9801785-008		52
Method Blank	S980707-MB		71

**CAS Acceptance Limits:**

41-140





July 14, 1998

Service Request No.: S9801786

Mr. Mark Litzau  
Harza Consulting Engineers and Scientists  
425 Roland Way  
Oakland, CA 94621

**RE: MEEK ORCHARD/M174-EB**

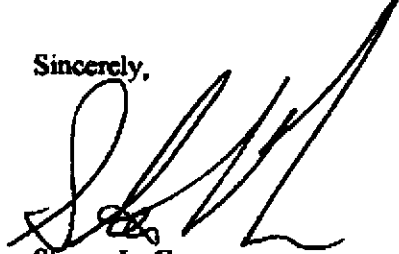
Dear Mr. Litzau:

The following pages contain analytical results for sample(s) received by the laboratory on July 7, 1998. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above. To help expedite our service, please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 9, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely,



Steven L. Green  
Project Chemist

## COLUMBIA ANALYTICAL SERVICES, Inc.

## Acronyms

AZLA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
D LCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICS	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTL	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

ACRONLST.DOC 7/14/95

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

Client: HARZA  
 Project: MEEK ORCHARD/M174-EB  
 Sample Matrix: Soil

Service Request: S9801786  
 Date Collected: 7/7/98  
 Date Received: 7/7/98

## Organochlorine Pesticides

Sample Name: C-1/1'  
 Lab Code: S9801786-001  
 Test Notes:

Units: mg/Kg (ppm)  
 Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Alpha-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Gamma-BHC (Lindane)	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Beta-BHC	EPA 3550	8080	0.03	1	7/7/98	7/12/98	ND	
Heptachlor	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Delta-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Aldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Heptachlor Epoxide	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan I	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDE	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Dieldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	0.03	
Endrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDD	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan II	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDT	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin Aldehyde	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan Sulfate	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Methoxychlor	EPA 3550	8080	0.02	1	7/7/98	7/12/98	ND	
Toxaphene	EPA 3550	8080	0.3	1	7/7/98	7/12/98	ND	
Chlordane	EPA 3550	8080	0.1	1	7/7/98	7/12/98	ND	

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

Client: HARZA  
 Project: MEEK ORCHARD/M174-EB  
 Sample Matrix: Soil

Service Request: S9801786  
 Date Collected: 7/7/98  
 Date Received: 7/7/98

## Organochlorine Pesticides

Sample Name: C-2/1'  
 Lab Code: S9801786-002  
 Test Notes:

Units: mg/Kg (ppm)  
 Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Alpha-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Gamma-BHC (Lindane)	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Beta-BHC	EPA 3550	8080	0.03	1	7/7/98	7/12/98	ND	
Heptachlor	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Delta-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Aldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Heptachlor Epoxide	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan I	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDE	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Dieldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDD	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan II	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDT	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin Aldehyde	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan Sulfate	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Methoxychlor	EPA 3550	8080	0.02	1	7/7/98	7/12/98	ND	
Toxaphene	EPA 3550	8080	0.3	1	7/7/98	7/12/98	ND	
Chlordane	EPA 3550	8080	0.1	1	7/7/98	7/12/98	ND	

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

Client: HARZA  
 Project: MEEK ORCHARD/M174-EB  
 Sample Matrix: Soil

Service Request: S9801786  
 Date Collected: 7/7/98  
 Date Received: 7/7/98

## Organochlorine Pesticides

Sample Name: C-3/1'  
 Lab Code: S9801786-003  
 Test Notes:

Units: mg/Kg (ppm)  
 Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Alpha-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Gamma-BHC (Lindane)	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Beta-BHC	EPA 3550	8080	0.03	1	7/7/98	7/12/98	ND	
Heptachlor	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Delta-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Aldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Heptachlor Epoxide	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan I	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDE	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Dieldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDD	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan II	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDT	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin Aldehyde	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan Sulfate	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Methoxychlor	EPA 3550	8080	0.02	1	7/7/98	7/12/98	ND	
Toxaphene	EPA 3550	8080	0.3	1	7/7/98	7/12/98	ND	
Chlordane	EPA 3550	8080	0.1	1	7/7/98	7/12/98	ND	

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

Client: HARZA  
 Project: MEEK ORCHARD/M174-EB  
 Sample Matrix: Soil

Service Request: S9801786  
 Date Collected: 7/7/98  
 Date Received: 7/7/98

## Organochlorine Pesticides

Sample Name: C-4/1'  
 Lab Code: S9801786-004  
 Test Notes:

Units: mg/Kg (ppm)  
 Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Alpha-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Gamma-BHC (Lindane)	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Beta-BHC	EPA 3550	8080	0.03	1	7/7/98	7/12/98	ND	
Heptachlor	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Delta-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Aldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Heptachlor Epoxide	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan I	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDE	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Dieldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDD	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan II	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDT	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin Aldehyde	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan Sulfate	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Methoxychlor	EPA 3550	8080	0.02	1	7/7/98	7/12/98	ND	
Toxaphene	EPA 3550	8080	0.3	1	7/7/98	7/12/98	ND	
Chlordane	EPA 3550	8080	0.1	1	7/7/98	7/12/98	ND	

## COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

Client: HARZA  
 Project: MEEK ORCHARD/M174-EB  
 Sample Matrix: Soil

Service Request: S9801786  
 Date Collected: NA  
 Date Received: NA

## Organochlorine Pesticides

Sample Name: Method Blank  
 Lab Code: S980707-MB  
 Test Notes:

Units: mg/Kg (ppm)  
 Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Alpha-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Gamma-BHC (Lindane)	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Beta-BHC	EPA 3550	8080	0.03	1	7/7/98	7/12/98	ND	
Heptachlor	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Delta-BHC	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Aldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Heptachlor Epoxide	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan I	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDE	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Dieldrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDD	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan II	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
4,4'-DDT	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endrin Aldehyde	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Endosulfan Sulfate	EPA 3550	8080	0.01	1	7/7/98	7/12/98	ND	
Methoxychlor	EPA 3550	8080	0.02	1	7/7/98	7/12/98	ND	
Toxaphene	EPA 3550	8080	0.3	1	7/7/98	7/12/98	ND	
Chlordane	EPA 3550	8080	0.1	1	7/7/98	7/12/98	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.****QA/QC Report**

**Client:** HARZA  
**Project:** MEEK ORCHARD/M174-EB  
**Sample Matrix:** Soil

**Service Request:** S9801786  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** NA  
**Date Analyzed:** NA

**Surrogate Recovery Summary**  
**Organochlorine Pesticides**

**Prep Method:** EPA 3550  
**Analysis Method:** 8080

**Units:** PERCENT  
**Basis:** NA

<b>Sample Name</b>	<b>Lab Code</b>	<b>Test Notes</b>	<b>Percent Recovery</b> Decachlorobiphenyl
C-1/1'	S9801786-001		97
C-2/1'	S9801786-002		106
C-3/1'	S9801786-003		104
C-4/1'	S9801786-004		105
Method Blank	S980707-MB		119

**CAS Acceptance Limits:** 53-120





3334 Victor Court • Santa Clara, CA 95054  
(408) 437-2400 • FAX (408) 437-9356

**S9801786**

**CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM**

SERVICE REQUEST NO. **S9801786 due 7/1/98**

PAGE 1 OF 1

PROJECT NAME **MEEK OAKHURD - M174-EB**  
 PROJECT MGR. **MARK LITZAV**  
 COMPANY **HARZA**  
 ADDRESS \_\_\_\_\_  
 PHONE **510/636-2140**  
 FAX **510/568-2205**  
 SAMPLER'S SIGNATURE \_\_\_\_\_

PRESERVATIVE	ANALYSIS REQUESTED													REMARKS		
	HCl	HCl	HCl	NP	NP	NP	HCl	HCl	W/D <sub>3</sub>	NP	H <sub>2</sub> SO <sub>4</sub>	H <sub>2</sub> SO <sub>4</sub>	H <sub>2</sub> SO <sub>4</sub>		140H	
<del>Volatile Organics GC/MS Benzene Method</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<b>ANALYSIS REQUESTED</b> <b>GC/MS Benzene Method</b> <b>GC/MS Benzene Method</b> <b>GC/MS Benzene Method</b> <b>GC/MS Benzene Method</b> <b>GC/MS Benzene Method</b> <b>GC/MS Benzene Method</b>
<del>Halogenated or Aromatic Volatiles 107/1070 T 802/8020 T</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>TPH in Gas/BTEX DMS LUFT/8020</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>TPH in Dissolved Phase</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>Base/Neutral Organics GC/MS 802/8020</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>Acidic Organics GC/MS 802/8020</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>TPH - 418.1</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>Oil and Grease Method</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>Metals Total Dissolved Lead Method</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>pH Cond. Cl SO<sub>4</sub> TDS Air NO<sub>3</sub> NO<sub>2</sub> (circle) NH<sub>4</sub>-N CO<sub>2</sub> (circle) NO<sub>3</sub> / NO<sub>2</sub> (circle) Total Organic Carbon TOC</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
<del>Total Phenols Cyanide</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS
<b>DRAW-1</b>	<b>7/1/98</b>		<b>1</b>	<b>Soil</b>	<b>1</b>
<b>C-1/1'</b>			<b>1</b>		<b>1</b>
<b>C-2/1'</b>			<b>2</b>		<b>1</b>
<b>C-3/1'</b>			<b>3</b>		<b>1</b>
<b>C-4/1'</b>			<b>4</b>		<b>1</b>
<b>RS-1/1'</b>			<b>5</b>		<b>1</b>
<b>RS-2/1'</b>			<b>6</b>		<b>1</b>
<b>RS-2/3'</b>			<b>7</b>		<b>1</b>

RELINQUISHED BY:  
 Signature: *[Signature]*  
 Printed Name: **DEBRA ARRENTAVIS**  
 Firm: **HARZA**  
 Date/Time: **7/1/98 12:30**

RECEIVED BY:  
 Signature: *[Signature]*  
 Printed Name: **S V RAYHAN**  
 Firm: **Columbia**  
 Date/Time: **7/1/98 12:30**

RELINQUISHED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

RECEIVED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

TURNAROUND REQUIREMENTS  
 1 day     2 day     3 day  
 5 day     Other  
 Standard (10 working days)  
 Results Due \_\_\_\_\_

REPORT REQUIREMENTS  
 I Review Report  
 II Report includes MS  
 USD as required, may be  
 changed as required  
 III Data Validation Report  
 includes A7 Risk Data  
 MDLs PQLs Trace  
 Electronic Data Delivery

RELINQUISHED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

RECEIVED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

SAMPLE RECEIPT: Condition \_\_\_\_\_ Custody Seals \_\_\_\_\_  
 SPECIAL INSTRUCTIONS/COMMENTS:  
 Circle which metals are to be analyzed:  
 Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn  
 As Pb Se Ti Hg  
**Due 7/8/98 24-hour on VOCs, TPH, METALS - S9801785-R11/02**  
**Due 7/1/98 5-DAY ON 8080 - S9801786 R11/02**

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# Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

July 8, 1998

Steve Green  
Columbia Analytical Services  
3334 Victor Court  
Santa Clara, CA 95054

Subject: 1 Concrete Sample and 4 Soil Samples  
Lab #'s: E12730 - E12734  
Project Name:  
Project Number: S9801785  
Method(s): EPA 8240

Dear Steve Green,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2224). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,



Michael N. Golden  
Lab Director

# Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

## Certified Analytical Report Volatile Organic Compounds by EPA Method 8240

Client: Columbia Analytical  
 Sample Matrix: Concrete  
 Sample Date/Time: 7/7/98  
 Lab #: E12730  
 Client ID: DRAIN-1

Date Reported: 7/8/98  
 Date Received: 7/7/98  
 Date Analyzed: 7/7/98  
 Dilution Factor: 1

Compound	Value	PQL	DLR	Compound	Value	PQL	DLR
Acetone	ND	20	20	1,1-Dichloroethene	ND	5	5
Allyl Chloride	ND	20	20	trans-1,2-Dichloroethene	ND	5	5
Benzene	ND	5	5	1,2-Dichloropropane	ND	5	5
Benzyl Chloride	ND	20	20	cis-1,3-Dichloropropane	ND	5	5
Bromodichloromethane	ND	5	5	trans-1,3-Dichloropropane	ND	5	5
Bromoform	ND	5	5	Ethyl Benzene	ND	5	5
Bromomethane	ND	5	5	2-Hexanone	ND	20	20
2-Butanone	ND	20	20	Iodomethane	ND	5	5
Carbon Disulfide	ND	5	5	Methylene Chloride	ND	5	5
Carbon Tetrachloride	ND	5	5	4-Methyl-2-Pentanone	ND	20	20
Chlorobenzene	ND	5	5	Styrene	ND	5	5
Chloroethane	ND	5	5	1,1,1,2-Tetrachloroethane	ND	5	5
Chloroform	ND	5	5	1,1,2,2-Tetrachloroethane	ND	5	5
Chloromethane	ND	5	5	Tetrachloroethene	ND	5	5
Dibromochloromethane	ND	5	5	Toluene	ND	5	5
1,2-Dibromo 3-Chloropropan	ND	5	5	1,1,1-Trichloroethane	ND	5	5
1,2-Dibromoethane (EDB)	ND	5	5	1,1,2-Trichloroethane	ND	5	5
Dichlorodifluoromethane	ND	5	5	Trichloroethene	ND	5	5
1,2-Dichlorobenzene	ND	5	5	Trichlorofluoromethane	ND	5	5
1,3-Dichlorobenzene	ND	5	5	1,2,3-Trichloropropane	ND	5	5
1,4-Dichlorobenzene	ND	5	5	Vinyl Acetate	ND	10	10
1,1-Dichloroethane	ND	5	5	Vinyl Chloride	ND	5	5
cis-1,2-Dichloroethene	ND	5	5	Xylenes	ND	5	5
1,2-Dichloroethane	ND	5	5				

Surrogate	Recovery (%)
Dibromofluoromethane	102
Toluene-d8	90
4-Bromofluorobenzene	92

- Results are reported in ug/kg (ppb).
- DLR= DF x PQL
- Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

  
 Michael N. Golden, Lab Director

ND: None Detected at or above DLR  
 DLR: Detection Reporting Limit

PQL: Practical Quantitation Limit  
 DF: Dilution Factor

Environmental Analysis Since 1983

# Entech Analytical Labs, Inc.

CA ELAP# 2224

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## Certified Analytical Report Volatile Organic Compounds by EPA Method 8240

Client: Columbia Analytical  
 Sample Matrix: Soil  
 Sample Date/Time: 7/7/98  
 Lab #: E12731  
 Client ID: C-1/1

Date Reported: 7/8/98  
 Date Received: 7/7/98  
 Date Analyzed: 7/8/98  
 Dilution Factor: 1

Compound	Value	PQL	DLR	Compound	Value	PQL	DLR
Acetone	ND	20	20	1,1-Dichloroethene	ND	5	5
Allyl Chloride	ND	20	20	trans-1,2-Dichloroethene	ND	5	5
Benzene	ND	5	5	1,2-Dichloropropane	ND	5	5
Benzyl Chloride	ND	20	20	cis-1,3-Dichloropropane	ND	5	5
Bromodichloromethane	ND	5	5	trans-1,3-Dichloropropane	ND	5	5
Bromoform	ND	5	5	Ethyl Benzene	ND	5	5
Bromomethane	ND	5	5	2-Heptanone	ND	20	20
2-Butanone	ND	20	20	Iodomethane	ND	5	5
Carbon Disulfide	ND	5	5	Methylene Chloride	ND	5	5
Carbon Tetrachloride	ND	5	5	4-Methyl-2-Pentanone	ND	20	20
Chlorobenzene	ND	5	5	Styrene	ND	5	5
Chloroethane	ND	5	5	1,1,1,2-Tetrachloroethane	ND	5	5
Chloroform	ND	5	5	1,1,2,2-Tetrachloroethane	ND	5	5
Chloromethane	ND	5	5	Tetrachloroethene	ND	5	5
Dibromochloromethane	ND	5	5	Toluene	ND	5	5
1,2-Dibromo 3-Chloropropan	ND	5	5	1,1,1-Trichloroethane	ND	5	5
1,2-Dibromoethane (EDB)	ND	5	5	1,1,2-Trichloroethane	ND	5	5
Dichlorodifluoromethane	ND	5	5	Trichloroethene	ND	5	5
1,2-Dichlorobenzene	ND	5	5	Trichlorofluoromethane	ND	5	5
1,3-Dichlorobenzene	ND	5	5	1,2,3-Trichloropropane	ND	5	5
1,4-Dichlorobenzene	ND	5	5	Vinyl Acetate	ND	10	10
1,1-Dichloroethane	ND	5	5	Vinyl Chloride	ND	5	5
cis-1,2-Dichloroethene	ND	5	5	Xylenes	ND	5	5
1,2-Dichloroethane	ND	5	5				

Surrogate	Recovery (%)
Dibromofluoromethane	98
Toluene-d8	113
4-Bromofluorobenzene	83

- Results are reported in ug/kg (ppb)
- DLR= DF x PQL
- Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

  
 Michael N. Golden, Lab Director

ND: None Detected at or above DLR  
 DLR: Detection Reporting Limit

PQL: Practical Quantitation Limit  
 DF: Dilution Factor

# Entech Analytical Labs, Inc.

CA ELAP# 2224

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## Certified Analytical Report Volatile Organic Compounds by EPA Method 8240

Client: Columbia Analytical  
 Sample Matrix: Soil  
 Sample Date/Time: 7/7/98  
 Lab #: E12732  
 Client ID: C-2/1'

Date Reported: 7/8/98  
 Date Received: 7/7/98  
 Date Analyzed: 7/8/98  
 Dilution Factor: 1

Compound	Value	PQL	DLR	Compound	Value	PQL	DLR
Acetone	ND	20	20	1,1-Dichloroethane	ND	5	5
Allyl Chloride	ND	20	20	trans-1,2-Dichloroethane	ND	5	5
Benzene	ND	5	5	1,2-Dichloropropane	ND	5	5
Benzyl Chloride	ND	20	20	cis-1,3-Dichloropropane	ND	5	5
Bromodichloromethane	ND	5	5	trans-1,3-Dichloropropane	ND	5	5
Bromoform	ND	5	5	Ethyl Benzene	ND	5	5
Bromomethane	ND	5	5	2-Hexanone	ND	20	20
2-Butanone	ND	20	20	Iodomethane	ND	5	5
Carbon Disulfide	ND	5	5	Methylene Chloride	ND	5	5
Carbon Tetrachloride	ND	5	5	4-Methyl-2-Pentanone	ND	20	20
Chlorobenzene	ND	5	5	Styrene	ND	5	5
Chloroethane	ND	5	5	1,1,1,2-Tetrachloroethane	ND	5	5
Chloroform	ND	5	5	1,1,2,2-Tetrachloroethane	ND	5	5
Chloromethane	ND	5	5	Tetrachloroethene	ND	5	5
Dibromochloromethane	ND	5	5	Toluene	ND	5	5
1,2-Dibromo 3-Chloropropane	ND	5	5	1,1,1-Trichloroethane	ND	5	5
1,2-Dibromoethane (EDB)	ND	5	5	1,1,2-Trichloroethane	ND	5	5
Dichlorodifluoromethane	ND	5	5	Trichloroethene	ND	5	5
1,2-Dichlorobenzene	ND	5	5	Trichlorofluoromethane	ND	5	5
1,3-Dichlorobenzene	ND	5	5	1,2,3-Trichloropropane	ND	5	5
1,4-Dichlorobenzene	ND	5	5	Vinyl Acetate	ND	10	10
1,1-Dichloroethane	ND	5	5	Vinyl Chloride	ND	5	5
cis-1,2-Dichloroethane	ND	5	5	Xylenes	ND	5	5
1,2-Dichloroethane	ND	5	5				

Surrogate	Recovery (%)
Dibromofluoromethane	100
Toluene-d8	114
4-Bromofluorobenzene	76

1. Results are reported in ug/kg (ppb).
2. DLR= DF x PQL
3. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

  
 Michael N. Golden, Lab Director

ND: None Detected at or above DLR  
 DLR: Detection Reporting Limit

PQL: Practical Quantitation Limit  
 DF: Dilution Factor

# Entech Analytical Labs, Inc.

CA ELAP# 2224

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## Certified Analytical Report Volatile Organic Compounds by EPA Method 8240


Client: Columbia Analytical  
 Sample Matrix: Soil  
 Sample Date/Time: 7/7/98  
 Lab #: E12733  
 Client ID: C-3/1'

Date Reported: 7/8/98  
 Date Received: 7/7/98  
 Date Analyzed: 7/7/98  
 Dilution Factor: 1

Compound	Value	PQL	DLR	Compound	Value	PQL	DLR
Acetone	30	20	20	1,1-Dichloroethane	ND	5	5
Allyl Chloride	ND	20	20	trans-1,2-Dichloroethane	ND	5	5
Benzene	ND	5	5	1,2-Dichloropropane	ND	5	5
Benzyl Chloride	ND	20	20	cis-1,3-Dichloropropane	ND	5	5
Bromodichloromethane	ND	5	5	trans-1,3-Dichloropropane	ND	5	5
Bromoform	ND	5	5	Ethyl Benzene	ND	5	5
Bromomethane	ND	5	5	2-Hexanone	ND	20	20
2-Butanone	ND	20	20	Iodomethane	ND	5	5
Carbon Disulfide	ND	5	5	Methylene Chloride	7.0	5	5
Carbon Tetrachloride	ND	5	5	4-Methyl-2-Pentanone	ND	20	20
Chlorobenzene	ND	5	5	Styrene	ND	5	5
Chloroethane	ND	5	5	1,1,1,2-Tetrachloroethane	ND	5	5
Chloroform	ND	5	5	1,1,2,2-Tetrachloroethane	ND	5	5
Chloromethane	ND	5	5	Tetrachloroethene	ND	5	5
Dibromochloromethane	ND	5	5	Toluene	ND	5	5
1,2-Dibromo 3-Chloropropane	ND	5	5	1,1,1-Trichloroethane	ND	5	5
1,2-Dibromoethane (EDB)	ND	5	5	1,1,2-Trichloroethane	ND	5	5
Dichlorodifluoromethane	ND	5	5	Trichloroethene	ND	5	5
1,2-Dichlorobenzene	ND	5	5	Trichlorofluoromethane	ND	5	5
1,3-Dichlorobenzene	ND	5	5	1,2,3-Trichloropropane	ND	5	5
1,4-Dichlorobenzene	ND	5	5	Vinyl Acetate	ND	10	10
1,1-Dichloroethane	ND	5	5	Vinyl Chloride	ND	5	5
cis-1,3-Dichloroethane	ND	5	5	Xylenes	ND	5	5
1,2-Dichloroethane	ND	5	5				

Surrogate	Recovery (%)
Dibromofluoromethane	112
Toluene-d8	110
4-Bromofluorobenzene	83

1. Results are reported in ug/kg (ppb).
2. DLR= DF x PQL
3. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

  
 Michael N. Golden, Lab Director

ND: None Detected at or above DLR  
 DLR: Detection Reporting Limit

PQL: Practical Quantitation Limit  
 DF: Dilution Factor

# Entech Analytical Labs, Inc.

CA ELAP# 2224

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## Certified Analytical Report Volatile Organic Compounds by EPA Method 8240

Client: Columbia Analytical  
 Sample Matrix: Soil  
 Sample Date/Time: 7/7/98  
 Lab #: E12734  
 Client ID: C-4/1'

Date Reported: 7/8/98  
 Date Received: 7/7/98  
 Date Analyzed: 7/7/98  
 Dilution Factor: 1

Compound	Value	PQL	DLR	Compound	Value	PQL	DLR
Acetone	ND	20	20	1,1-Dichloroethane	ND	5	5
Allyl Chloride	ND	20	20	trans-1,2-Dichloroethane	ND	5	5
Benzene	ND	5	5	1,2-Dichloropropane	ND	5	5
Benzyl Chloride	ND	20	20	cis-1,3-Dichloropropene	ND	5	5
Bromodichloromethane	ND	5	5	trans-1,3-Dichloropropene	ND	5	5
Bromoform	ND	5	5	Ethyl Benzene	ND	5	5
Bromomethane	ND	5	5	2-Hexanone	ND	20	20
2-Butanone	ND	20	20	Iodomethane	ND	5	5
Carbon Disulfide	ND	5	5	Methylene Chloride	6.3	5	5
Carbon Tetrachloride	ND	5	5	4-Methyl-2-Pentanone	ND	20	20
Chlorobenzene	ND	5	5	Styrene	ND	5	5
Chloroethane	ND	5	5	1,1,1,2-Tetrachloroethane	ND	5	5
Chloroform	ND	5	5	1,1,2,2-Tetrachloroethane	ND	5	5
Chloromethane	ND	5	5	Tetrachloroethene	ND	5	5
Dibromochloromethane	ND	5	5	Toluene	ND	5	5
1,2-Dibromo-3-Chloropropan	ND	5	5	1,1,1-Trichloroethane	ND	5	5
1,2-Dibromoethane (EDB)	ND	5	5	1,1,2-Trichloroethane	ND	5	5
Dichlorodifluoromethane	ND	5	5	Trichloroethene	ND	5	5
1,2-Dichlorobenzene	ND	5	5	Trichlorofluoromethane	ND	5	5
1,3-Dichlorobenzene	ND	5	5	1,2,3-Trichloropropane	ND	5	5
1,4-Dichlorobenzene	ND	5	5	Vinyl Acetate	ND	10	10
1,1-Dichloroethane	ND	5	5	Vinyl Chloride	ND	5	5
cis-1,2-Dichloroethene	ND	5	5	Xylenes	ND	5	5
1,2-Dichloroethane	ND	5	5				

Surrogate	Recovery (%)
Dibromofluoromethane	110
Toluene-d8	114
4-Bromofluorobenzene	85

- Results are reported in ug/kg (ppb).
- DLR = DF x PQL
- Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

  
 Michael N. Golden, Lab Director

ND: None Detected at or above DLR  
 DLR: Detection Reporting Limit

PQL: Practical Quantitation Limit  
 DF: Dilution Factor



