**TRC**

*Customer-Focused Solutions*

April 26, 2000 Project No. 99-200

Ms. Chia Rin Yen
Hazardous Substances Scientist
Department of Toxic Substances Control
1011 North Grandview Avenue
Glendale, California 91201

Transmittal
Offsite Well Closure Report (Wells BL-5 through BL-8)
Former International Light Metals Facility
Lockheed Martin Corporation
Torrance, California

Dear Ms. Yen:

Pursuant to the Department of Toxic Substances Control's (DTSC's) request, enclosed is the report *Ground Water Sampling and Well Abandonment, Wells BL-5 through BL-8*, prepared by Harding Lawson Associates on behalf of Boeing Realty Corporation. The offsite wells were installed as part of the former International Light Metals (ILM) facility offsite ground water investigation. These wells were abandoned (closed) pursuant to TRC's "Request for Closure of Offsite Wells" letter dated December 28, 1999, the DTSC approval letter dated January 5, 2000, and the additional DTSC request on January 17, 2000 to eliminate the bentonite from the grout backfill.

Please call us if you have any questions.

Sincerely,

Ronald V. Giraudi, REA II 20054
Project Director

RECEIVED
APR 27 2000

RVG/RAL:rs
Enclosure

cc: William Rowe, DTSC
John Geroch, California RWQCB - Los Angeles Region
Robert McMullen, Lockheed Martin Corporation
Mario Stavale, Boeing Realty Corporation
Steve Shesthe, The Boeing Company
Derrick Willis, Integrated Environmental Services, Inc.
Charles Purcell, Kennedy Jenks Consultants

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**Harding Lawson Associates**
2171 Campus Drive, Suite 100
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Telephone: 949/224-0050
Fax: 949/224-0073

Engineering Environmental
and Construction Services

April 21, 2000

49380 2

Mr. Mario Stavale
Boeing Realty Corporation
4060 Lakewood Boulevard, 6th Floor
Long Beach, California 90808-1700

**Letter Report**
**Groundwater Sampling and Well Abandonment, Wells BL-5 through BL-8**
**International Light Metals (ILM) /Lockheed Martin Corporation Facility**
**Boeing Realty Corporation (BRC)/ Lockheed Martin Corporation Joint Investigation**
**Los Angeles, California**

Dear Mr. Stavale,

## INTRODUCTION

Harding Lawson Associates (HLA) is pleased to submit this letter report to Integrated Environmental Services (IES) regarding the gauging, sampling, and abandonment of temporary groundwater monitoring wells located at the Boeing C-6 facility, 19503 South Normandie Avenue, Los Angeles, California. The objectives of this project were to provide water level gauging of Monitoring Wells BL-1 through BL-8, and groundwater sampling and abandonment of Wells BL-5 through BL-8 according to the December 1998 Sampling and Analysis Plan approved by the California EPA, Department of Toxic Substances Control (DTSC) and guidelines of the Los Angeles Department of Health Services (DHS), respectively. Wells BL-5 through BL-8 were installed to evaluate the lateral and downgradient extent of ILM-derived contaminants at the BRC property. Due to ongoing redevelopment activities, DTSC approved a conditional offsite well closure plan dated January 5, 2000. This letter report describes the field activities that were performed and presents the analytical data for this project as outlined in HLA's proposal/workplan dated January 11, 2000.

## FIELD ACTIVITIES

The field activities included gauging and collecting the required groundwater samples, transporting the samples to the analytical laboratory, abandoning Monitoring Wells BL-5 through BL-8, and the storage, removal, and disposal of all wastes generated at the site. A description of the field activities is presented below.

### Groundwater gauging and sampling

Temporary monitoring wells BL-1 through BL-8 were gauged on January 14, 2000. Gauging was accomplished using an electronic water level meter. Air monitoring for volatile organic compounds (VOCs) was performed with a photoionization detector (PID) upon opening each well cap. Wells BL-5 through BL-8 were sampled on January 14, 2000. Approximately five well volumes of groundwater within the wells were purged using an electric submersible pump. The groundwater was monitored for field parameters including temperature, pH, turbidity, and electrical conductivity during purging. Field logs were maintained to document these parameters and are included in Appendix A.

Groundwater samples were collected for chemical analysis after purging each well. Samples were collected using new, disposable polyethylene bailers equipped with a low-flow bottom-emptying device. Samples were decanted into 40-ml VOA vials and 500-ml polyethylene bottles to be analyzed for trichloroethene (TCE) by EPA Method 8260 and for hexavalent chromium by EPA Method 7196, respectively. The fractions for Chromium VI analysis were prepared by filtering in the field using a peristaltic pump and disposable 0.45-micron filters.

The samples were transported for testing on the day of collection via courier to BC Analytical in Bakersfield, California, a state-certified laboratory, because the hexavalent chromium analysis has a holding time of 24 hours. The samples were transported under chain-of-custody protocol in a chilled ice chest accompanied with quality control samples (a trip blank, equipment rinsate blank, and a field blank). Laboratory test results and chain-of-custody documentation for the groundwater samples are included in Appendix B.

New drinking-water grade polyethylene tubing was used at each well for groundwater evacuation. All non-disposable sampling equipment was decontaminated before each use with an Alconox detergent wash and double rinsed with distilled water. The submersible pump was decontaminated by placing the pump in a container and pumping 20 gallons of potable water through it, and then rinsing again with distilled water. Decontamination fluids were stored in 55-gallon drums for disposal after profiling.

Well Abandonment

Temporary monitoring wells BL-5 through BL-8 were abandoned at the site from January 17 to 19, 2000. All four wells were abandoned by overdrilling the well casing, screen, grout, and sand pack using eight-inch diameter hollow stem auger equipment operated by THF Drilling of Fontana, California. All borings were pressure-backfilled through the augers in 20- to 30-foot lifts using a one-inch diameter tremie-pipe and a Portland cement/water mixture from total depth to approximately 15 feet below ground surface (bgs). The original plan to also use bentonite in the backfill mixture was abandoned at the request of Mr. Will Rowe of the DTSC who was onsite for the closure of the first well, BL-8. The upper 15 feet of each borehole was backfilled with ready-mix concrete. A steam cleaner was used to decontaminate all downhole drilling equipment before each use. An HLA geologist was present to supervise the destruction of each monitoring well. A PID was used for air monitoring for health and safety purposes during drilling. Field logs were maintained to document all field activities. A copy of the well abandonment permit issued by Los Angeles DHS is included in Appendix C. The following is a tabulation of overdrilling and backfilling observations for each of the abandoned wells:

| **Overdrilling Observations** | **BL-5** | **BL-6** | **BL-7** | **BL-8** |
|---|---|---|---|---|
| Depth of Well (height above surface), feet | 79 (1) | 79.5 (0.5) | 79 (1) | 81 (1) |
| Depth of Overdrilling, feet | 80 | 80 | 80 | 82 |
| Blank Casing Removed (condition), feet | 60 (intact) | 60 (intact) | 60 (intact) | 62 (intact) |
| Screened Casing Removed, feet | 20 (intact) | 20 (intact) | 20 (intact) | 20 (intact) |
| Auger Depth Before Cuttings Observed, feet bgs | 25 | 30 | 30 | 57 |
| Grout Removed, cubic yards | 1.5 | 1.05 | 1 | 1 |
| Bentonite - Grout/Sand Mix removed, cubic yards | 0.5 | 0.45 | 0.25 | 0.25 |
| **Backfilling Observations** | | | | |
| Backfill Mixture, Portland (bags)/Water (Gallons) | 4/30 | 4/30 | 4/30 | 4/30 |
| Total Quantity of Portland Used (bags) | 24 | 27 | 28 | 26 |

During overdrilling of each well, grout cuttings were not observed at the surface until the augers reached depths of 25 to 57 feet bgs (see above table). In discussions with the drilling contractor they maintained that for wells backfilled with bentonite grout, which does not set up like Portland cement, it is uncommon to observe cuttings at the surface until a significant portion of the well has been overdrilled. The reasons for this are the smaller relative volume of material being overdrilled (grout only occupies annular space between PVC casing and borehole wall) compared to drilling in undisturbed ground and that the fluidity of the grout does not allow it to readily travel up the

auger flights. Also, when drilling native soil the augers are periodically lifted up to clear the cuttings from the flights in order to reduce friction during drilling. Bentonite grout does not cause significant friction due to its fluidity.

Wells BL-5, BL-6, and BL-7 were each observed to have cuttings come to the surface at approximately the same auger depth (25 to 30 feet bgs). Well BL-8 was observed to have auger cuttings arrive at the surface at an approximate auger depth of 57 feet bgs. While overdrilling Well BL-8, no resistance was observed by the driller from 0 to 15 feet bgs, indicating that a void in the annular space may have existed at these depths. Settling of 15 feet would not have significantly impacted the seal between the surface and the groundwater because approximately 45 feet of seal remained. Settling of grout is usually attributed to seepage into native formations and does not imply faulty well installation. A HLA registered geologist observed and photographed remaining wells BL-1 through BL-4 to check if significant settlement of the grout had occurred. The photographs, included in Appendix A, show that there was little to no observable settlement of the grout at each of these wells.

Waste storage, sampling, hauling, and disposal

Purge and decontamination water from the groundwater sampling and well abandonment was stored in 55-gallon drums, and wastes from the well abandonment activities (well materials, sand pack, sealing materials) was contained in a roll-off bin. Three composite waste profile samples, two soil (SP-1 and SP-2) and one wastewater (WWP-1), were collected at the end of the investigation to be analyzed by EPA Method 8260, EPA Method 418.1, EPA Method 8082, and for Title 22 CAM Metals. The waste samples were transported via courier to BC Analytical in Bakersfield, California, for profiling on the day of collection (January 19, 2000). The samples were transported in a chilled ice chest under chain-of-custody protocol.

Upon receipt and evaluation of the analytical profiling test data, all wastes were removed from the property for disposal as non-hazardous material. The waste soil was disposed at Filter Recycling Services in Rialto by Consolidated Waste Industries, Montclair, California. The wastewater was disposed at the Crosby & Overton facility in Long Beach by Cameron Environmental, Torrance, California. Non-hazardous waste forms for disposal of the waste are included in Appendix C.

**RESULTS**

The following tables present the results of the groundwater level gauging activities, groundwater sample analyses, and waste disposal profile sample analyses.

Groundwater gauging and purging

| Well No. | Depth to Water (feet btoc) | Top of Casing Elevation (feet MSL) | Groundwater Elevation (feet MSL) | Volume of Water Purged (Gallons) | Headspace PID Readings (ppm) |
|---|---|---|---|---|---|
| BL-1 | 71.04 | 58.34 | -12.7 | NA | 0.0 |
| BL-2 | 71.55 | 58.15 | -13.4 | NA | 0.0 |
| BL-3 | 73.41 | 59.33 | -14.08 | NA | 0.0 |
| BL-4 | 70.56 | 55.45 | -15.11 | NA | 0.0 |

| Well No. | Depth to Water (feet btoc) | Top of Casing Elevation (feet MSL) | Groundwater Elevation (feet MSL) | Volume of Water Purged (Gallons) | Headspace PID Readings (ppm) |
|---|---|---|---|---|---|
| BL-5 | 68.05 | 55.18 | -12.87 | 8.0 | 0.0 |
| BL-6 | 67.85 | 54.70 | -13.15 | 8.1 | 0.0 |
| BL-7 | 69.60 | 55.19 | -14.41 | 10 | 82.3 |
| BL-8 | 71.68 | 57.13 | -14.55 | 7.0 | 0.0 |

Groundwater Sample Analyses

| Analyte (µg/L) | Monitoring Wells | | | |
|---|---|---|---|---|
| | BL-5 | BL-6 | BL-7 | BL-8 |
| Benzene | 0.18 | 0.50 | ND | ND |
| Bromodichloromethane | ND | 0.33 | ND | ND |
| n – Butylbenzene | 0.12 | ND | ND | ND |
| sec – Butylbenzene | 0.15 | ND | ND | ND |
| Carbon Tetrachloride | ND | 0.83 | 0.21 | 0.21 |
| Chloroform | 1.2 | 10 | 0.42 | 1.3 |
| 1,1 – Dichloroethane | 0.59 | ND | ND | ND |
| 1,1 – Dichloroethene | 0.27 | 0.43 | ND | ND |
| cis – 1,2 – Dichloroethene | 67 | 14 | ND | ND |
| trans – 1,2 – Dichloroethene | 1.0 | 16 | ND | ND |
| Hexachlorobutadiene | 0.18 | ND | ND | ND |
| p – Isopropyltoluene | 0.10 | ND | ND | ND |
| Naphthalene | 0.19 | ND | ND | ND |
| Tetrachloroethene | ND | 2.1 | ND | ND |
| Toluene | ND | ND | 0.50 | 0.11 |
| 1,1,2 – Trichloroethane | ND | 0.60 | ND | ND |
| Trichloroethene | 1.8 | 4800 | 12 | 14 |
| Hexavalent Chromium (filtered) | 3 | 230 | 20 | 19 |
| Hexavalent Chromium (non-filtered) | 3 | 230 | 24 | 22 |

Waste Disposal Profile Analyses

| Analyte (µg/L) | Soil (SP) and Wastewater (WWP) Profile | | |
|---|---|---|---|
| | SP-1 | SP-2 | WWP-1 |
| Bromodichloromethane | ND | ND | 0.32 |
| Chloroform | ND | ND | 3.2 |
| Dibromochloromethane | ND | ND | 0.49 |
| Ethly Benzene | ND | ND | 0.17 |
| Methylene Chloride | ND | ND | 0.43 |
| Naphthalene | ND | ND | 0.36 |
| Toluene | ND | ND | 3.6 |
| Trichloroethene | ND | ND | 2.0 |
| 1,2,4 – Trimethylbenzene | ND | ND | 0.11 |
| Total Xylenes | ND | ND | 0.84 |
| Methyl Tertiary Butyl Ether | ND | ND | 1.4 |

Thank you for the opportunity to provide our services to you. If you have any questions regarding this letter, please contact Mark Clardy at (949) 224-0050.

Very truly yours,
**Harding Lawson Associates**

Mark Clardy
Senior Geologist

David J. DeVries, R.G., C.H.G.
Senior Hydrogeologist

REGISTERED GEOLOGIST
DAVID J. DeVRIES
No. 6313
Exp. 4-30-01
STATE OF CALIFORNIA

Attachments:

| | | |
|---|---|---|
| | Plate 1 | Vicinity Map |
| | Plate 2 | Site Plan |
| | Appendix A | Field Logs and Photographs of Wells BL-1 through BL-4 |
| | Appendix B | Laboratory Results and Chain-of-Custody Forms – Groundwater and Waste Disposal Profile Samples |
| | Appendix C | Well Abandonment Permit and Non-Hazardous Waste Data Forms |

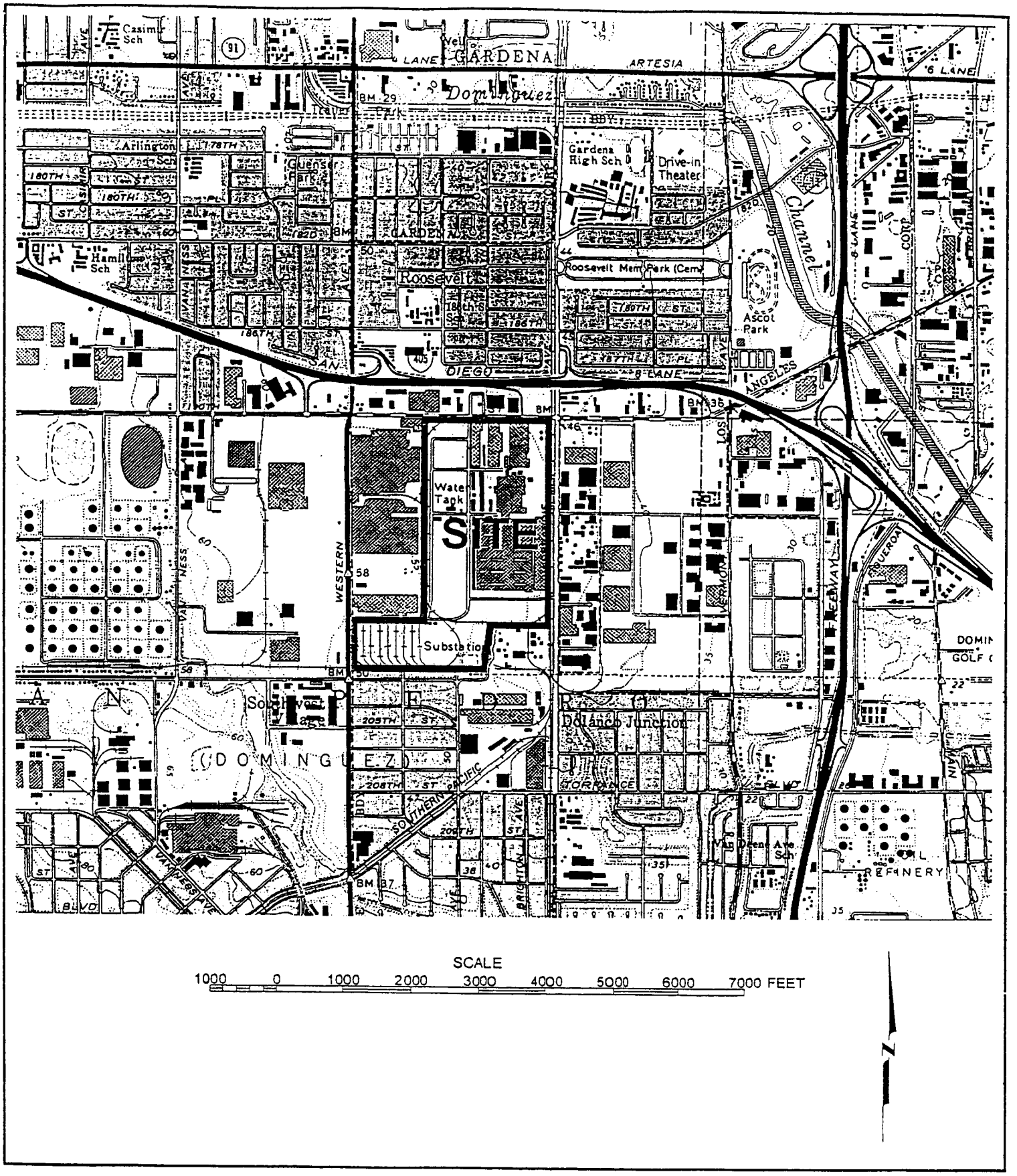
N:\Boeing\letter\BL_rpt.doc

cc: Mr. Ron Giraudi – TRC Environmental Solutions, Inc.
Mr. Tom Danaher – Integrated Environmental Services, Inc.

# PLATES

BOE-C6-0045996

# PLATES



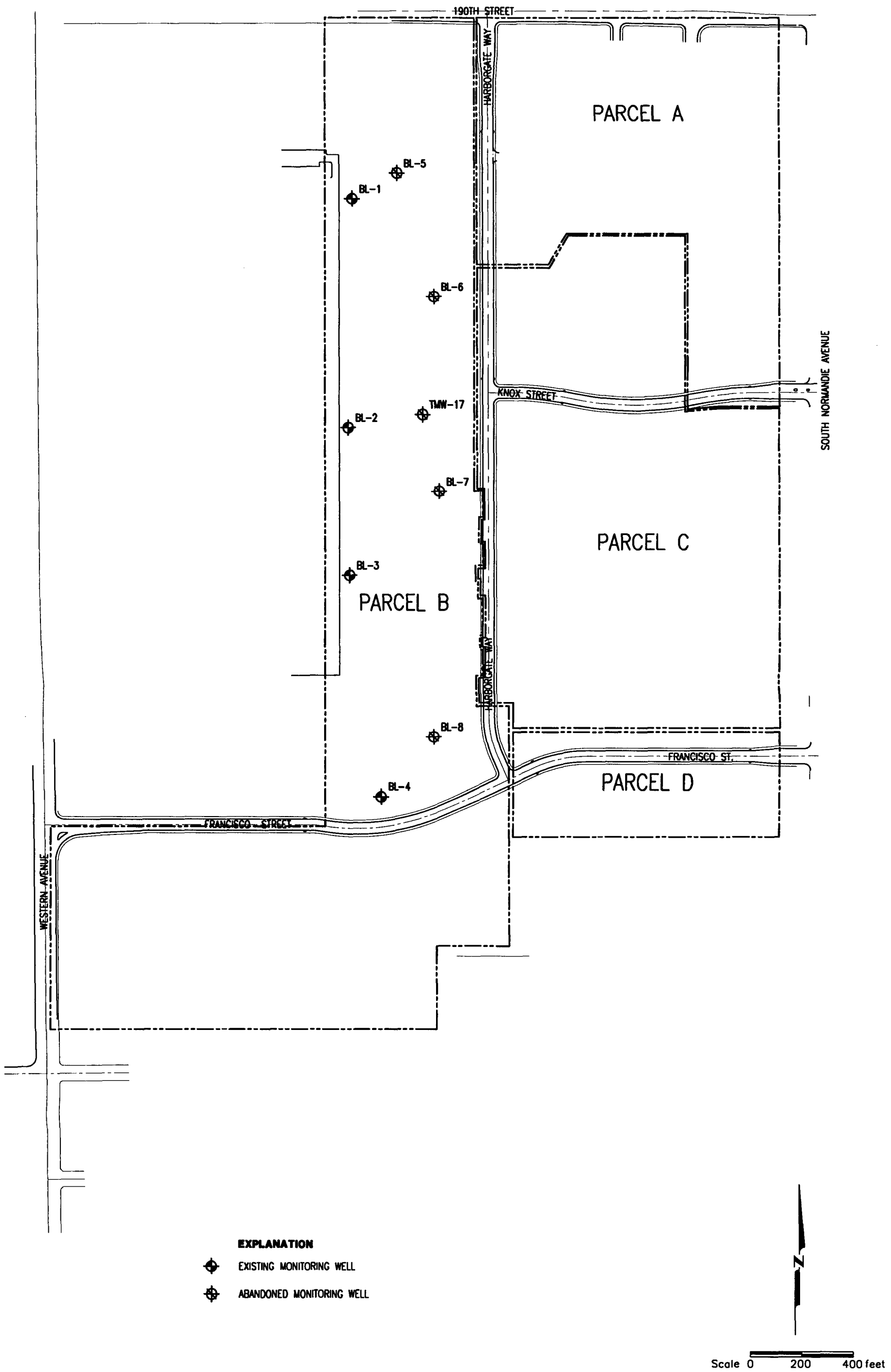

Harding Lawson Associates
Engineering and
Environmental Services

**VICINITY MAP**
Boeing Realty Corporation C-6 Facility
Los Angeles, California

PLATE
1

| DRAWN | PROJECT-TASK NUMBER | APPROVED | DATE | REVISED DATE |
|---|---|---|---|---|
| JTL | 40711-98.1 | | 3/98 | |

XREFS = X-PARCEL, X-ROADS, X-WELLS R14 PLOT 1 = 400 TO 4MV HOT\49380\2\200-S1




**Harding Lawson Associates**
Engineering and
Environmental Services

**SITE PLAN WITH MONITORING WELL LOCATIONS**
Boeing C-6 Facility
Los Angeles, California

PLATE **2**

| DRAWN | PROJECT-TASK NUMBER | APPROVED | DATE | REVISED DATE |
|---|---|---|---|---|
| JTL | 49380-2 | | 2/00 | |

# APPENDIX A

BOE-C6-0046000

# APPENDIX A
# FIELD LOGS AND PHOTOGRAPHS OF WELLS BL-1 THROUGH BL-4

Sheet COVER of

Project: BOEING - Job No.: 49380-1 49380-2

Subject: FIELD INVESTIGATION DAILY REPORT Date: 1-14-00

Equipment Rental: Company: To:

Equipment Hours: F.E. Time from: to: By: MP./BW

(outside service and expense record must be attached for any outside costs)

ACTIVITIES -

- REVIEW SITE INFO AND H.A.S.P.
- GAUGE V.O.C'S IN WELL HEAD SPACE
- MONITOR WATER LEVELS.
- PURGE AND SAMPLE WATER WELLS PER WORK PLAN
- COLLECT QA/QC SAMPLES PER WORK PLAN.

PERSONEL ON SITE DURING ACTIVITIES,

- MIKE PALMER (HLA)
- BRETT WILCOX (HLA)
- ANDERSON CHANG (IES)
- B.C. LAB COURIER.

SAMPLES COLLECTED

| SAMPLES | TYPE | LAB |
|---|---|---|
| TRAVEL BLANK | LAB | B.C. LAB |
| FB-9 / FB-9-NF | FIELD BLANK | " " |
| RB-9 / RB-9-NF | RINSATE BLANK | " " |
| BL-8 / BL-8-NF | WELL | " " |
| BL-7 / BL-7-NF | WELL | " " |
| BL-5 / BL-5-NF | WELL | " " |
| BL-6 / BL-6-NF | WELL | " " |
| TMW-17 / TMW-17-NF | WELL | ORANGE COAST LABS. |

Attachments:

Initial

FF1

**Harding Lawson Associates**

Sheet 1 of 3

Project: BOEING - WATER SAMPLING
Job No.: 49380-1 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 1-14-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: MIKE PALMER / BRETT WILCOX

(outside service and expense record must be attached for any outside costs)

0500 - LEFT TO MEET BRETT WILCOX AT OFFICE TO LOAD MATERIALS
0530 - LEAVING FOR SITE IN HLA #560 / 601
0610 - ARRIVED AT SITE.
- SETTING UP "QUAD" RINSE DECON STATION NEAR SOIL / WATER DRUMS STAGED NEAR TMW-17
- THOROUGHLY CLEANED PUMP / SOLINST / CHECK VALVE
- CALIBRATED P.I.D. AND HORIBA U-10 (PARAMETER METER)
- REVIEWED H.A.S.P. AND SITE INFO. W/ BRETT.
0730 - PREPARING TO MONITOR WATER LEVELS IN 8 BL WELLS AND 1 TMW-17 WELL. (ANDERSON IES CHANG ON SITE)
- P.I.D. READINGS WILL BE TAKEN AS SOON AS CAP IS REMOVED FROM WELL. I WILL INSERT P.I.D. HOSE INLET INTO WELL CASE THEN COVER TO AVOID AMBIENT AIR INTO WELL CASE. LOOK FOR P.I.D. READINGS ON WATER LEVEL DATA SHEET
0810 - FINISHED MONITORING WELLS
* A FIELD BLANK WAS COLLECTED AND LABELED FB-9 AND FB-9-NF (NF = NON-FILTERED ON ALL SAMPLES)
* A RINSATE BLANK WAS COLLECTED AND LABELED RB-9 AND RB-9-NF
0820 - MOBILIZING AT TMW-17 (ANDERSON IES CHANG ON SITE)
- SET UP EQUIPMENT
- INSTALLED NEW 1/2" HOSE PER WORK PLAN. AS PUMP WENT DOWN WELL.
- WELL PURGE 4 WELL VOLS AND MEASURE pH / TEMP / COND / TURB. PARAMETERS AND LOG ON FORM
- PURGED WATER INTO 55 GAL. DRUM
0855 - SAMPLED WELL PER WORK PLAN LABELED TMW-17 / TMW-17-NF

Attachments: - PUMP - HOSE WAS REMOVED FROM PUMP WHEN PULLED FROM WELL.
Initial

FF1

Harding Lawson Associates

Sheet 2 of 3

Project: BOEING
Job No.: 49380-1 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 1-14-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: MIKE PARNELL/B.W.

(outside service and expense record must be attached for any outside costs)

- DEMOBING TO DECON AREA TO CLEAN EQUIP AND TRANSFER WATER. DECON PER WORK PLAN
2930 - MOBILIZING AT BL-8
- INSTALLING NEW 1/2" HOSE AS PUMP IS LOWERED IN WELL
- SET UP EQUIP.
- PURGED 4 WELL VOLS MONITORING PARAMETERS
- REMOVED PUMP FROM WELL SEPERATING OLD HOSE.
1005 - COLLECTED SAMPLES LABELED BL-8/BL-8-NF
- DEMOBING TO DECON AREA FOR DECON PROCEEDURES.
1045 - MOBILIZING AT BL-7
- INSTALLED NEW 1/2" HOSE AS PUMP LOWERED INTO WELL
- PURGED ALMOST 5 WELL VOLS WAITING FOR TURB. TO BE INTO SPEC'S.
- REMOVED PUMP SEPERATING HOSE.
1115 - COLLECTED SAMPLES LABELED BL-7/BL-7-NF
- DEMOBING TO DECON AREA (ANDERSON CHANG ON SITE)
- PERFORMING DECON.
1145 - MOBILIZING ~~AT~~ BL-5
- INSTALLING NEW 1/2" HOSE INTO WELL WITH PUMP.
- PURGED 4 WELL VOLS. PARAMETERS STABILIZE.
- REMOVED PUMP AND SEPERATED HOSE.
1215 - COLLECTED SAMPLES FROM WELL LABELED BL-5/BL-5-NF
- DEMOBING TO DECON AREA FOR DECON PROCEEDURES.
1300 - MOBILIZING AT BL-6 (ANDERSON CHANG ON SITE)
- INSTALLED NEW 1/2" HOSE WITH PUMP INTO WELL.
- PURGED ~~6~~ WELL VOLS. UNTIL TURB. ~~REACHED~~ REACHED SPEC.
- REMOVED PUMP SEPERATING HOSE.
1335 - COLLECTED SAMPLE LABELED BL-6/BL-6-NF
- DEMOBING TO DECON AREA FOR JOB BREAKDOWN

Attachments: MARK CLARDY HAS INFORMED ME THAT LAB COURIER WILL BE IN AREA AROUND 2:00PM.
Initial:

FF1

Harding Lawson Associates

Project: BOEING.
Job No.: 49380-1 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 1-14-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: WP / BW.

(outside service and expense record must be attached for any outside costs)

- CLEANED ALL EQUIP.
* ALL GROUND WATER / DECON WATER WAS PLACED IN 55 GAL. DRUMS. THERE ARE 4 DRUMS LEFT AT SITE. THEY ARE LABELED W/ CAUTION LABELS
- THE DRUMS WILL BE LEFT NEAR TMW-17 AS PER ANDERSON CHANG (EES)

1415 - B.W. OFF SITE TO COURIER SAMPLES TO ORANGE COAST LABS UNDER C.O.C. AND DELIVER EQUIPMENT.
* I GAVE P.I.O. AND H.A.S.P. TO ANDERSON CHANG AS PER MARK CLARDY

1430 - COURIER FROM B.C. LABS ON SITE.
1435 - SIGNED OVER SAMPLES
- BEGAN PLACING CUSTODY STRIPS.

1510 - OFF SITE

Attachments:

Initial

FF1

**Harding Lawson Associates**

Harding Lawson Associates

WATER LEVEL DATA SHEET

INSTRUMENT/MODEL # : SOLINST 150

PROJECT: BOEING

JOB NUMBER: 49380-1 and -2

NAME: MIKE PALMER
BRETT WILCOX

DATE: 1-14-00

SHEET 1 OF 1

| WELL NUMBER | TIME | DEPTH TO WATER 1st READING | ~~DEPTH TO WATER 2nd READING~~ T.D. | DEPTH TO WATER 3rd READING | COMMENTS SECTION P.I.O. READINGS |
|---|---|---|---|---|---|
| TMW-17 | 0740 | 68.95 | 84.47 | | 0.0 p.p.m. |
| BL-2 | | 71.55 | ~~83.77~~ | MONITOR ONLY | 0.0 p.p.m. |
| BL-7 | | 64.60 | 80.20 | | 82.3 ppm. |
| BL-8 | | 71.68 | 82.50 | | 0.0 ppm |
| BL-4 | | 70.56 | — | MONITOR ONLY | 0.0 ppm |
| BL-3 | | 73.41 | — | MONITOR ONLY | 0.0 ppm |
| BL-6 | | 67.85 | 80.33 | | 0.0 ppm. |
| BL-5 | | 68.05 | 80.20 | | 0.0 ppm. |
| BL-1 | | 71.04 | — | MONITOR ONLY | 0.0 ppm |

**Harding Lawson Associates**
Engineering and Environmental Services

# GROUND-WATER SAMPLING FORM

Job Name: BOEING
Job Number: 49380-2
Recorded by: [signature] (Signature)

Well No.: BL-5
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 1-14-00 Time: 1145
Sampled by: MP/BW (Initials)

## WELL PURGING

### PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.20
Water Level Depth (WL in feet BTOC): 68.05
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

### PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

### PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 78 Screen Interval in Feet (BTOC) from ____ to ____

### PURGE VOLUME CALCULATION:

(80.20 - 68.05) X 2² X 4 X 0.0408 = 7.9 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

### PURGE TIME

1157 Start 1205 Stop 8 Elapsed

### PURGE RATE

Initial 1 gpm Final 1 gpm

### ACTUAL PURGE VOLUME

8.0 gallons

### FIELD PARAMETER MEASUREMENT

| ~~Minutes~~ GALLONS Since Pumping Began | pH | Cond. (µmhos/cm) | T ☒ °C ☐ °F | Other TURB |
|---|---|---|---|---|
| INITIAL | 6.91 | 2.03 | 22.8 | 536 |
| 3 | 6.99 | 2.02 | 23.0 | 107 |
| 6 | 7.18 | 2.02 | 23.3 | 91 |
| 7 | 7.19 | 2.01 | 23.3 | 12 |
| 8 | 7.21 | 2.02 | 23.3 | 1.8 |

| Minutes Since Pumping Began | pH | Cond. (µmhos/cm) | T ☐ °C ☐ °F | Other |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Meter Nos. | | | | |

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other 55 GAL. DRUM

## WELL SAMPLING

### SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

### SAMPLING DISTRIBUTION

Sample Series:

| Sample No. | Volume/Cont. | Analysis Requested | Preservatives | Lab | Comments |
|---|---|---|---|---|---|
| BL-5 | 2/40 ml 1/500 ml | 8260 CHROMIUM 6 (FILTERED) | HCL N/A | BC LABS | TIME: 1215 |
| BL-5-NF | 1/1 LTR POLY | CHROMIUM 6 (NON FILTERED) | N/A | " " | " |
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### QUALITY CONTROL SAMPLES

Duplicate Samples

| Original Sample No. | Duplicate Sample No. |
|---|---|
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Blank Samples

| Type | Sample No. |
|---|---|
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| | |

Other Samples

| Type | Sample No. |
|---|---|
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| | |

**Harding Lawson Associates**
Engineering and
Environmental Services

# GROUND-WATER SAMPLING FORM

Job Name BOEING
Job Number 49380-2
Recorded by [signature] (Signature)

Well No. BL-6
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 1-14-00 Time 1300
Sampled by MJ/BW (Initials)

## WELL PURGING

### PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 80.33
Water Level Depth (WL in feet BTOC):
Number of Well Volumes to be purged (# Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

### PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

### PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 78 Screen Interval in Feet (BTOC) from to

### PURGE VOLUME CALCULATION

(80.33 TD (feet) - 67.85 WL (feet)) X 2 D (inches)$^2$ X 4 # Vols X 0.0408 = 8.1 gallons Calculated Purge Volume

### PURGE TIME

1313 Start 1325 Stop 12 Elapsed

### PURGE RATE

Initial 1 gpm Final 1 gpm

### ACTUAL PURGE VOLUME

~~9.0~~ 12 gallons

### FIELD PARAMETER MEASUREMENT

| ~~Minutes~~ GALLONS Since Pumping Began | pH | Cond. (µmhos/cm) | T ☒ °C ☐ °F | Other TURB |
|---|---|---|---|---|
| ~~INITIAL~~ | 7.21 | 1.82 | 23.2 | 444+ |
| 3 | 7.21 | 1.77 | 23.4 | 404 |
| 7 | 7.19 | 1.78 | 23.5 | 122 |
| 8 | 7.18 | 1.78 | 23.6 | 48 |
| 9 | 7.16 | 1.78 | 23.6 | 23 |

| Minutes Since Pumping Began | pH | Cond. (µmhos/cm) | T ☒ °C ☐ °F | Other TURB |
|---|---|---|---|---|
| 11 | 7.16 | 1.77 | 23.6 | 16 |
| 12 | 7.16 | 1.77 | 23.6 | 3.2 |
| | | | | |
| | | | | |
| Meter Nos. | | | | |

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other 55 GAL. DRUM

## WELL SAMPLING

### SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

### SAMPLING DISTRIBUTION

Sample Series:

| Sample No. | Volume/Cont. | Analysis Requested | Preservatives | Lab | Comments |
|---|---|---|---|---|---|
| BL-6 | | | | | ~~55~~ TIME = 1335 |
| BL-6-NF | | | | | |
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### QUALITY CONTROL SAMPLES

Duplicate Samples

| Original Sample No. | Duplicate Sample No. |
|---|---|
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| | |

Blank Samples

| Type | Sample No. |
|---|---|
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| | |

Other Samples

| Type | Sample No. |
|---|---|
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**Harding Lawson Associates**
Engineering and Environmental Services

# GROUND-WATER SAMPLING FORM

Well No. BL-7

Job Name BOEING

Job Number 49380-2

Recorded by [signature] (Signature)

Well Type: ☒ Monitor ☐ Extraction ☐ Other

Well Material: ☒ PVC ☐ St. Steel ☐ Other

Date 1-14-00 Time 1045

Sampled by MP/BW (Initials)

## WELL PURGING

### PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC): 80.20

Water Level Depth (WL in feet BTOC): 69.60

Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

### PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

### PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 78 Screen Interval in Feet (BTOC) from ____ to ____

### PURGE VOLUME CALCULATION

(80.20 − 69.60) × 2² × 4 × 0.0408 = 6.9 gallons

TD (feet) − WL (feet) × D (inches)² × # Vols × 0.0408 = Calculated Purge Volume

### PURGE TIME

1056 Start 1106 Stop 10 Elapsed

### PURGE RATE

Initial 1 gpm Final 1 gpm

### ACTUAL PURGE VOLUME

10 gallons

### FIELD PARAMETER MEASUREMENT

| ~~Minutes~~ GALLONS Since Pumping Began | pH | Cond. (µmhos/cm) | T ☒ °C ☐ °F | Other TURB |
|---|---|---|---|---|
| INITIAL | 6.96 | 1.26 | 20.6 | 999+ |
| 3 | 7.20 | 1.12 | 23.0 | 999+ |
| 5 | 7.22 | 1.10 | 23.2 | 246 |
| 6 | 7.21 | 1.10 | 23.2 | 154 |
| 7 | 7.24 | 1.11 | 23.3 | 29 |

| ~~Minutes~~ GALLONS Since Pumping Began | pH | Cond. (µmhos/cm) | T ☒ °C ☐ °F | Other TURB |
|---|---|---|---|---|
| 9 | 7.25 | 1.11 | 23.3 | 13 |
| 10 | 7.24 | 1.11 | 23.3 | 4.8 |
| | | | | |
| | | | | |
| Meter Nos. | | | | |

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other 55 GAL. DRUM

## WELL SAMPLING

### SAMPLING METHOD

☒ Bailer - Type: DISP.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

### SAMPLING DISTRIBUTION

Sample Series:

| Sample No. | Volume/Cont. | Analysis Requested | Preservatives | Lab | Comments |
|---|---|---|---|---|---|
| BL-7 | 2/40ml 1/500 ml | 8260 6 CHROMIUM (FILTERED) | HCL N/A | BC LABS | TIME = 1115 |
| BL-7-NF | 1/1 LTR POLY | CHROMIUM 6 (NON FILTERED) | N/A | " " | " |
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### QUALITY CONTROL SAMPLES

Duplicate Samples

| Original Sample No. | Duplicate Sample No. |
|---|---|
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Blank Samples

| Type | Sample No. |
|---|---|
| | |
| | |
| | |
| | |

Other Samples

| Type | Sample No. |
|---|---|
| | |
| | |
| | |
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**Harding Lawson Associates**
Engineering and Environmental Services

# GROUND-WATER SAMPLING FORM

Job Name: BORING
Job Number: 49380-2
Recorded by: [signature] (Signature)

Well No.: BL-8
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 1-14-00 Time: 0930
Sampled by: MP/BW (Initials)

## WELL PURGING

### PURGE VOLUME

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 82.50
Water Level Depth (WL in feet BTOC): 71.68
Number of Well Volumes to be purged (# Vols)
☐ 3 ☒ 4 ☐ 5 ☐ 10 ☐ Other

### PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type: GRUNDFOS

### PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): 80'
Screen Interval in Feet (BTOC) from ____ to ____

### PURGE VOLUME CALCULATION:

(82.50 − 71.68) × 2² × 4 × 0.0408 = 7.1 gallons
TD (feet) − WL (feet); D (inches); # Vols; Calculated Purge Volume

### PURGE TIME

0943 Start 0952 Stop 9 Elapsed

### PURGE RATE

Initial .8 gpm Final ____ gpm

### ACTUAL PURGE VOLUME

7.0 gallons

### FIELD PARAMETER MEASUREMENT

| ~~Minutes Since~~ GALLONS Pumping Began | pH | Cond. (µmhos/cm) | T ☒ °C ☐ °F | Other TURB |
|---|---|---|---|---|
| INITIAL | 6.94 | 2.69 | 22.1 | 946 |
| 3 | 6.97 | 2.82 | 23.0 | 215 |
| 5 | 7.01 | 2.82 | 23.2 | 24 |
| 6 | 7.03 | 2.82 | 23.3 | 9 |
| 7 | 7.04 | 2.82 | 23.3 | 3.7 |

| Minutes Since Pumping Began | pH | Cond. (µmhos/cm) | T ☐ °C ☐ °F | Other ____ |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Meter Nos. | | | | |

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other 55 GAL DRUM

## WELL SAMPLING

### SAMPLING METHOD

☒ Bailer - Type: DISPOSABLE
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

### SAMPLING DISTRIBUTION

Sample Series:

| Sample No. | Volume/Cont. | Analysis Requested | Preservatives | Lab | Comments |
|---|---|---|---|---|---|
| BL-8 | 2/40ml 1/500ml | 8260 CHROMIUM 6 | HCL N/A | BC LABS | TIME=1005 |
| BL-8-NF | 1/1LTR POLY | CHROMIUM 6 | N/A | " " | " " |
| | | | | | |
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### QUALITY CONTROL SAMPLES

Duplicate Samples

| Original Sample No. | Duplicate Sample No. |
|---|---|
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| | |

Blank Samples

| Type | Sample No. |
|---|---|
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| | |

Other Samples

| Type | Sample No. |
|---|---|
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Boeing C-6 Facility
Hawthorne, Torrance, CA.



Project: BRC - WELL ABANDONMENT (BL-8) Job No.: 49311.06.1
Subject: FIELD INVESTIGATION DAILY REPORT Date: JAN-17-2000
Equipment Rental: _____ Company: _____ To: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____ By: CMA

(outside service and expense record must be attached for any outside costs)

0700 RPA onsite
TRC (Ron) @ back of lot
Consolidated to drop off bin (0715) wait for
Anderson (LES) to find location for bin
0730 DTSC (Will) from SAE. onsite
call THF office they are off of Normandie
0800 THF onsite (Errick / Dave)
soil bin (20 yard) will be stored inside
fence of Boeing facility
0815 Job to BL-08, Rep from Boeing to go over
their H&S requirements; tailgate meeting.
0845 tag well at 81' bgs. (≈ 2 foot stick-up)
pull well (snapped @ first joint.
0900 Begin overdrilling - no resistance till about
15' bgs. No cuttings up until ≈ 57' bgs
(volclay grout) - drilled to 82' bgs (1¼ yrds)
1000 Casing free, pull out (62' blank, 20' screen + cap)
1045 Mix grout; DTSC wants bentonite completely mixed,
hydrated before adding portland cement. Granular
bentonite too clumpy - don't use. Said to use
straight portland; if any problems w/ DEHS we'll
talk w/ them. Mix cement (3 bags / 25 gall)
80 Tremmie pipe clogged pull, re-lower
1200 Start slurry backfill. 1st batch to flip, make
as dry as possible. mixer / pump can't make
much thicker w/o clogging - burning motor.
got mixture to (4 bags / 280 gal)
8 batches total (26 bags of Portland used)
leave 15' open to cement later.

Attachments:

1600 Decon / clean area. (1 drum) Initial

FF1

Harding Lawson Associates

Boeing C-6 Facility
Hawthorne, Torrance, CA.



Project: BRC - WELL ABANDONMENT (BL-07) Job No.: 49311.00.1
Subject: FIELD INVESTIGATION DAILY REPORT Date: JAN 17, 2000
Equipment Rental: _____ Company: _____ To: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____ By: [illegible]

(outside service and expense record must be attached for any outside costs)

1700 mob to BL-07
TAG WELL to 79' bgs (1' stickup)
1715 BEGIN OVERDRILLING - cuttings up (GROUT) AT ABOUT 30' bgs.
DRILLED to 80' bgs (1 1/4 YARDS) INTACT
1815 CASING FREE, pull (60' BLANK, 20' SCREEN + cap)
pull AUGER UP OUT OF H2O (ABOUT 15')
CLEAN AROUND site
1900 OFFSITE FOR DAY →

JAN 18, 2000

0600 AT SITE w/ THF
0620 REDRILL to 80', CLEAN-OUT BORING
~~ANOTHER 1/2 YARDS~~ SAND / GROUT MIXTURE cuttings
0700 BEGIN BACKFILL - PER yesterdays conversation
will use 4 BAGS / 28-30 gal - AS THICK AS we can make it (THF). TREMMIE PIPE to 75' SO AS NOT to cling up like yesterday
1000 GROUT in (- 15' for CEMENT) 7 BATCHES - 28 bags
1/2 YARDS FROM AUGERS in HOPPER
DUMP HOPPER to BIN (2 3 YARDS total)
STEAM CLEAN AUGERS, CLEAN site, FILL TANKS FROM HYDRANT. DECON (1 DRUM)
1100 mob to BL-05.

3 YARDS FROM BL-08/07 to bin
80% VOLCLAY
20% BENT. / SAND (FILTER / FORMATION)

Attachments:

Initial

Harding Lawson Associates

FF1

Boeing C-6 Facility
Harborgate, Torrance, CA.



Project: BRC - WELL ABANDONMENT BL-05 Job No.: 49311.00.1
Subject: FIELD INVESTIGATION DAILY REPORT Date: JAN-18-2000
Equipment Rental: _____ Company: _____ To: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____ By: [illegible]

(outside service and expense record must be attached for any outside costs)

1115 tag BL-05 @ 79' bgs (1' stick-up.)
1120 Begin overdrilling - cuttings up (grout) at about 25' bgs.
1200 clean-out borehole (80' bgs)
1230 casing free, pull - 60' blank, 20' screen + cap intact
1315 mix first batch (4 bags 38 gal)
tremmie pipe as before (75' bgs)
1345 Sinclair dropped of 1½ pallets of portland.
1430 * per mark TRC needs

(1) depth of overdrill vs well depth
(2) footage of blank / casing
(3) rel. amounts of cuttings (materials)
(4) details of grout mixtures. as well as totals
(5) general proc; problems encountered.
waste handling.

545 slurry backfill in - 6 batches (24 bags used)
clean site, decon (1 drum)
dump cuttings to bin (2 yards)
75% vallcay
25% bent / sand (back + formation)
silty, olive gray / yellowish brn
1600 Anderson said we need to have area of BL-08 completely cleaned, they will begin grading in the morning. will need to mix / pour concrete downhole tonight.

Attachments: 1630 Mob to BL-06

Initial



Harding Lawson Associates

BOEING C-6 FACILITY
HARBORGATE, TORRANCE, CA.



Project: BRC - WELL ABANDONMENT (BL-06)
Job No.: 49311.00.1
Subject: FIELD INVESTIGATION DAILY REPORT
Date: JAN - 18 - 2000
Equipment Rental: _____ Company: _____ To: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____ By: RMA

(outside service and expense record must be attached for any outside costs)

1700 TAG BL-06 @ 79.5' bgs (0.5' stick-up.)
1705 BEGIN OVERDRILLING - cuttings up (GROUT) AT
- SMALL AMOUNT OF CHIPS UP w/ soil UNTIL
CUTTINGS UP AT ABOUT 30' bgs (GROUT [VOLUCLAY])
1810 TD to 80' bgs - CLEAN-OUT BOREHOLE
PULL UP ≈ 8' OVERNIGHT.
1830 OFFSITE FOR DAY - THF OVER to BL-08 to
MOVE DRUMS, SUPPLIES SO GRADING CAN START IN
THE MORNING

JAN 19, 2000

0630 ON SITE w/ THF
LOWER TREMMIE PIPE to ≈ 70' bgs. (GROUT - bentonite - SAND
MIXING ON HAMMER ABOUT 8'. MIX FIRST BATCH
PORTLAND (4 BAGS 320 GALLONS). BATCHES as fill
FLOWS OVER AUGERS - PULL AUGERS IN 25' lifts while
BACKFILLING to keep PORTLAND WITHIN AUGERS - FALLS
out of AUGERS while pulling out.
0900 SLURRY BACKFILL IN - 7 BATCHES (27 bags PORTLAND)
CLEAN SITE
DECON (1 DRUM)
DUMP cuttings to BIN - (1½ YARDS)
70% VOLCLAY
30% bentonite / SAND (filter pack + foundation)
0930 MOB to TMW-17

Attachments:

Initial

Harding Lawson Associates

(11)

JAN 18, 2000

NEED TO HAVE AREA CLEANED BY THE 19th A.M. (WED)
WILL COMPLETE BACKFILL TO SURFACE w/ CONCRETE (READY-MIX)
TAG TOP OF PORTLAND @ 13' BGS.

1530 DAVE OVER to complete to SURFACE
MATERIALS USED - 8 BAGS READY-MIX

1630 TAKE DECON DRUM, WELL CASING to AREA WHERE
DECON BIN is LOCATED. ~~BC~~ (TMW-17.)

Boeing C-6 Facility
Harborgate, Torrance, CA.



Project: BRC - WELL ABANDONMENT (TMW-17 | Job No.: 49312.00.1
Subject: FIELD INVESTIGATION DAILY REPORT | Date: JAN-19-2000
Equipment Rental: _____ Company: _____ | To: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____ | By: RAA

(outside service and expense record must be attached for any outside costs)

0940 tag TMW-17 to 82' bgs (2' stickup)
pull monument out 4' threaded piece came out
hand auger down about 2' to expose female end
clean threads, screw 3' section from previous well into TMW-17.
1010 Begin overdrilling TMW-17 - cuttings up (grat) @ 25' bgs
1100 *collect profile samples
Decon bailer: take WWP-1 (waste-water profile) from drum of purge/ decon water from 1-11.00 sampling drum and decon drum from BL-07.
1/3 from sampling drum
2/3 from decon drum
take SP-1/2 (soil profile) from bottom cuttings of BL-06 and top cuttings from TMW17.

(*tried to collect soil samples from two zones as seen from cuttings on augers)

1130 Finish boring to 83' bgs - clean-out
1145 Lower tremmie pipe to 75' bgs, take short cuttings
1215 Mix first batch slurry (4 bags/ 30 gal)
1255 BC labs picked up samples.
1500 Slurry backfill in - 7½ batches (30 bags)
Clean site decon (1 drum)
Dump cuttings to bin (2 yards)
70 % bentonite
30 % bentonite / sand (filter pack + formating)

* Michael Lui, DEHS, visited site @ 1200

Attachments:

Initial →

1-19-00

1600 tag top of Portland @ 12' bgs @ BL-07
mix Ready-mix concrete. 8 bags Ready-mix
in to surface.

take decon drums (4) + groundwater decon/purge
drums (4) to bin area. total 55-gal
drums.

Load well casing + trash put in
top of bin for disposal. Will go
to landfill so no need to seperate
cuttings. (grout) from trash. (per
Consolidated waste)

1700 Tag top of Portland @ 13' bgs @ BL-05
mix Ready-mix concrete 8 ½ bags in to complete
to surface.

1730 Tag top of Portland @ 12' bgs @ B-06
mix Ready-mix concrete 7 ½ bags in to surface

1800 Tag top of Portland @ 12' bgs @ TMW17
mix Ready-mix concrete 8 bags in to surface.

mixed concrete in wheel-barrell. Filled bottom
of barrel w/ water (≈ 2.5 gal) mixed in 2 bags
per batch. Poured downhole.

* Some of blank/screen casing were 20' lengths, so had
to break them to fit into bin.

1830 offsite for day!

Project: BRC- WELL ABANDONMENTS
Subject: FIELD INVESTIGATION DAILY REPORT
Equipment Rental: _____ Company: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____

Job No.: _____
Date: _____
To: _____
By: _____

(outside service and expense record must be attached for any outside costs)

GENERAL PROCEDURES.

THE GENERAL PROCEDURES ARE DESCRIBED IN THE SCOPE AND BRIEFLY OUTLINED HERE:

ABANDONED (5) 2" SCH. 40 PVC GROUNDWATER MONITORING WELLS ~~OF~~ APPROX 81' bgs. by OVERDRILLING w/ 8" HSA. WELLS WERE PULLED OUT INTACT IN GOOD - FAIR CONDITION. ALL BORINGS WERE BACKFILLED w/ PORTLAND CEMENT FROM T.O to APPROX 15' bgs, WITH THE REMAINING BOREHOLE BACKFILLED w/ READY MIX CONCRETE to SURFACE. WASTE (CUTTINGS / DECON $H_2O$) WERE STORED WITHIN THE BOEING FENCE UNTIL PROFILED AND DISPOSED.

with 1" tremmie pipe in 20-30' lifts

Attachments:

Initial

FF1

**Harding Lawson Associates**

# DIRECT READING INSTRUMENT LOG

**Project Name:** BRC
**Site Address:** HARBORGATE FIELD
**Name:** Rex Harry
**Date:** 1-17/19-2000
**Instrument:** MINI RAE
**Serial Number:** 102710
**Calibration Date and Time:** 1/11/2000 by RR

| Contaminant | Time | Reading | Contaminant | Time | Reading |
|---|---|---|---|---|---|
| BL-08 cuttings | 0930 | 0 | | | |
| OBZ | | 0 | | | |
| | | | | | |
| BL-07 cuttings | 1725 | 0 | | | |
| OBZ | | 0 | | | |
| | | | | | |
| BL-05 cuttings | 1145 | 0 | | | |
| OBZ | | 0 | | | |
| | | | | | |
| BL-06 cuttings | 1750 | 0 | | | |
| OBZ | | 0 | | | |
| | | | | | |
| TMW-17 cuttings | 1030 | 0 | | | |
| OBZ | | 0 | | | |
| | | | | | |
| | | | | | |
| Sol bin | 1400 | 0 | | | |

Sheet 1 of 1

Project: BOEING.
Job No.: 49380-2
Subject: FIELD INVESTIGATION DAILY REPORT
Date: 2-16-00
Equipment Rental: Company: To:
Equipment Hours: F.E. Time from: to: By: M. PALMER

(outside service and expense record must be attached for any outside costs)

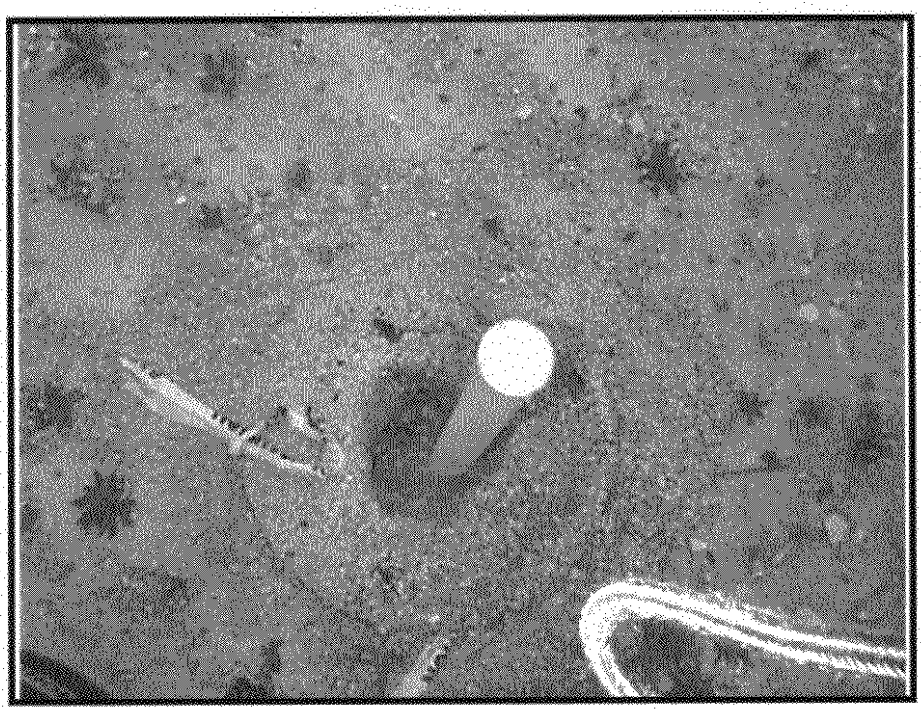
0800- LEFT FOR SITE IN HLA #560, IT'S RAINING
0815- MARK C. PAGED ME, EXITED FREEWAY TO CALL HIM.
- HE IS CALLING TO CHECK IF HAULING CONTRACTORS WILL BE GOING TO SITE
0845- GOT OK TO CONTINUE.
0930- AT HARBORGATE GATE LOCATING LOCATIONS OF DRUMS OF WATER AND SOIL BIN.
1015- CAMERON ENVIR. ON SITE. TAKING THEM ONTO FACILITY FOR WATER DRUMS.
*THERE ARE ONLY 8 DRUMS OF WATER LOCATED NEAR SOIL BIN IN DESCRIBED LOCATION AREA.
- WE LEFT FACILITY TO PICK UP 3 WATER DRUMS NEAR WELL #7 ACROSS FROM GAURD GATE.
*THESE DRUMS ARE IN A MUD LOT AND CAMERONS' TRUCK WILL NOT BE ABLE TO DRIVE TO DRUMS WE WILL HAVE BRING DRUMS TO TRUCK.
- CAMERON ENVIRN. HAS REMOVED 11 55 GAL DRUMS OF WATER. SEE MANIFEST.
1105- CONSOLIDATED WASTE AT GAURD GATE. LET HIM ONTO FACILITY TO REMOVE SOIL BIN.
- SEE MANIFEST.
1140- OFF SITE.
1230- BACK AT OFFICE.

Attachments:

Initial

FF1

**Harding Lawson Associates**



Well BL-1 showing approximately 4 inches of bentonite grout seal settlement.

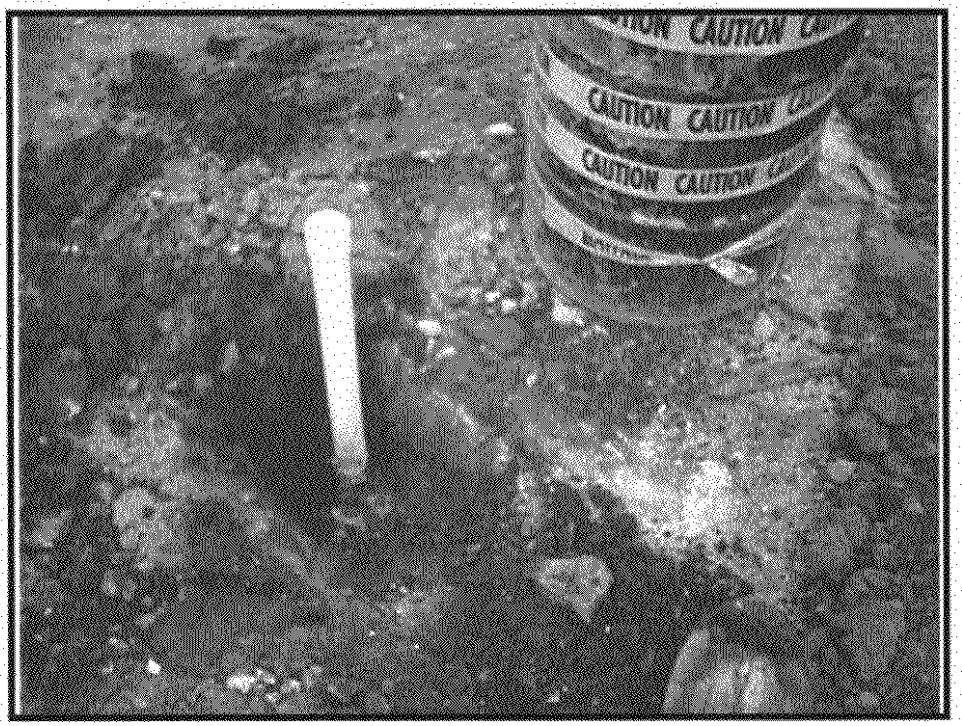
Well BL-2 with small hole in bentonite grout seal from previous metal stake. No settlement of grout.

**Harding Lawson Associates**
Engineering and Environmental Services
2171 Campus Drive, Suite 100
Irvine, California 92612 - (949) 224-0050

**SITE PHOTOGRAPHS**

BOEING

Well BL-3 with negligible grout settlement.




Well BL-4 with top of bentonite grout found at 1 foot below surface beneath soil backfill.

**Harding Lawson Associates**
**En**gineering and Environmental Services
2171 Campus Drive, Suite 100
Irvine, California 92612 - (949) 224-0050

**SITE PHOTOGRAPHS**

BOEING

APPENDIX B

# APPENDIX B
# LABORATORY RESULTS AND CHAIN-OF-CUSTODY FORMS – GROUNDWATER AND WASTE DISPOSAL PROFILE SAMPLING

BC Laboratories, Inc.



WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-2

Project Number: None
Sampling Location: BOEING
Sample ID: FB-9
Sampling Date/Time: 01/14/2000 @ 06:40
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | None Detected | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Sample was filtered thru 0.45 µ filter and acidified prior to metal analysis.

California D.O.H.S. Cert. #1186

Dan Schultz
Laboratory Director

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BC Laboratories, Inc.



WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-3

Project Number: None
Sampling Location: BOEING
Sample ID: FB-9-NF
Sampling Date/Time: 01/14/2000 @ 06:40
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | None Detected | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
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**BC Laboratories, Inc.**



WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-4

Project Number: None
Sampling Location: BOEING
Sample ID: RB-9
Sampling Date/Time: 01/14/2000 @ 07:00
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | None Detected | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Sample was filtered thru 0.45 µ filter and acidified prior to metal analysis.

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Dan Schultz
Laboratory Director

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WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-5

Project Number: None
Sampling Location: BOEING
Sample ID: RB-9-NF
Sampling Date/Time: 01/14/2000 @ 07:00
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | None Detected | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
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Dan Schultz
Laboratory Director

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WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-6

Project Number: None
Sampling Location: BOEING
Sample ID: BL-8
Sampling Date/Time: 01/14/2000 @ 10:05
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 19. | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Sample was filtered thru 0.45 µ filter and acidified prior to metal analysis.

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Dan Schultz
Laboratory Director

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BC Laboratories, Inc.



WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-7

Project Number: None
Sampling Location: BOEING
Sample ID: BL-8-NF
Sampling Date/Time: 01/14/2000 @ 10:05
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 22. | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
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Dan Schultz
Laboratory Director

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BC Laboratories, Inc.



WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-8

Project Number: None
Sampling Location: BOEING
Sample ID: BL-7
Sampling Date/Time: 01/14/2000 @ 11:15
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 20. | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Sample was filtered thru 0.45 µ filter and acidified prior to metal analysis.

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Dan Schultz
Laboratory Director

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WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-9

Project Number: None
Sampling Location: BOEING
Sample ID: BL-7-NF
Sampling Date/Time: 01/14/2000 @ 11:15
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 24. | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
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WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-10

Project Number: None
Sampling Location: BOEING
Sample ID: BL-5
Sampling Date/Time: 01/14/2000 @ 12:15
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 3. | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Sample was filtered thru 0.45 µ filter and acidified prior to metal analysis.

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Laboratory Director

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WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-11

Project Number: None
Sampling Location: BOEING
Sample ID: BL-5-NF
Sampling Date/Time: 01/14/2000 @ 12:15
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 3. | µg/L | 2. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
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Dan Schultz
Laboratory Director

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BC Laboratories, Inc.



WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-12

Project Number: None
Sampling Location: BOEING
Sample ID: BL-6
Sampling Date/Time: 01/14/2000 @ 13:35
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 230. | µg/L | 20. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Sample was filtered thru 0.45 µ filter and acidified prior to metal analysis.

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Dan Schultz
Laboratory Director

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BC Laboratories, Inc.



WATER ANALYSIS
(METALS)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/24/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-13

Project Number: None
Sampling Location: BOEING
Sample ID: BL-6-NF
Sampling Date/Time: 01/14/2000 @ 13:35
Sample Collected By: MIKE PALMER

| Constituents | Results | Units | P.Q.L. | Method |
|---|---|---|---|---|
| Hexavalent Chromium | 230. | µg/L | 20. | EPA-7196 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
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Dan Schultz
Laboratory Director

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-1TB

Project Number: None
Sampling Location: BOEING
Sample ID: TRAVEL BLANK
Sample Matrix: Blank Water
Sample Collected By: MIKE PALMER

Date Collected: 01/06/2000
Date Extracted: 01/20/2000
Date Analyzed: 01/20/2000 @ 06:17
Analyst: MGC
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit |
|---|---|---|---|
| Benzene | None Detected | µg/L | 0.5 |
| Bromobenzene | None Detected | µg/L | 0.5 |
| Bromochloromethane | None Detected | µg/L | 0.5 |
| Bromodichloromethane | None Detected | µg/L | 0.5 |
| Bromoform | None Detected | µg/L | 0.5 |
| Bromomethane | None Detected | µg/L | 0.5 |
| n-Butylbenzene | None Detected | µg/L | 0.5 |
| sec-Butylbenzene | None Detected | µg/L | 0.5 |
| tert-Butylbenzene | None Detected | µg/L | 0.5 |
| Carbon tetrachloride | None Detected | µg/L | 0.5 |
| Chlorobenzene | None Detected | µg/L | 0.5 |
| Chloroethane | None Detected | µg/L | 0.5 |
| Chloroform | None Detected | µg/L | 0.5 |
| Chloromethane | None Detected | µg/L | 0.5 |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 |
| Dibromochloromethane | None Detected | µg/L | 0.5 |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 |
| Dibromomethane | None Detected | µg/L | 0.5 |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 |
| 1,1-Dichloroethene | None Detected | µg/L | 0.5 |
| cis-1,2-Dichloroethene | None Detected | µg/L | 0.5 |
| trans-1,2-Dichloroethene | None Detected | µg/L | 0.5 |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 |
| Ethyl Benzene | None Detected | µg/L | 0.5 |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 |
| Isopropylbenzene | None Detected | µg/L | 0.5 |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 |
| Methylene Chloride | None Detected | µg/L | 1. |
| Naphthalene | None Detected | µg/L | 0.5 |
| n-Propylbenzene | None Detected | µg/L | 0.5 |

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-1TB

Sample Description: BOEING, TRAVEL BLANK, 01/06/2000, MIKE PALMER

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit |
|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| Tetrachloroethene | None Detected | µg/L | 0.5 |
| Toluene | None Detected | µg/L | 0.5 |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 |
| Trichloroethene | None Detected | µg/L | 0.5 |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 |
| Vinyl Chloride | None Detected | µg/L | 0.5 |
| Total Xylenes | None Detected | µg/L | 1. |
| Methyl-t-butylether | None Detected | µg/L | 0.5 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 110. | 76-114 |
| Toluene-d8 | 95. | 88-110 |
| 4-Bromofluorobenzene | 97. | 86-115 |

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-2

Project Number: None
Sampling Location: BOEING
Sample ID: FB-9
Sample Matrix: Groundwater
Sample Collected By: MIKE PALMER

Date Collected: 01/14/2000 @ 06:40
Date Extracted: 01/20/2000
Date Analyzed: 01/20/2000 @ 06:52
Analyst: MGC
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Benzene | None Detected | µg/L | 0.5 | |
| Bromobenzene | None Detected | µg/L | 0.5 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | |
| Bromodichloromethane | None Detected | µg/L | 0.5 | |
| Bromoform | None Detected | µg/L | 0.5 | |
| Bromomethane | None Detected | µg/L | 0.5 | |
| n-Butylbenzene | None Detected | µg/L | 0.5 | |
| sec-Butylbenzene | None Detected | µg/L | 0.5 | |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | |
| Carbon tetrachloride | None Detected | µg/L | 0.5 | |
| Chlorobenzene | None Detected | µg/L | 0.5 | |
| Chloroethane | None Detected | µg/L | 0.5 | |
| Chloroform | None Detected | µg/L | 0.5 | |
| Chloromethane | None Detected | µg/L | 0.5 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | |
| Dibromochloromethane | None Detected | µg/L | 0.5 | |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | |
| Dibromomethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethene | None Detected | µg/L | 0.5 | |
| cis-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| trans-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| Ethyl Benzene | None Detected | µg/L | 0.5 | |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 | |
| Isopropylbenzene | None Detected | µg/L | 0.5 | |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 | |
| Methylene Chloride | 0.19 | µg/L | 1. | *02 |
| Naphthalene | None Detected | µg/L | 0.5 | |
| n-Propylbenzene | None Detected | µg/L | 0.5 | |

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**BC Laboratories, Inc.**



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-2

Sample Description: BOEING, FB-9, 01/14/2000 @ 06:40, MIKE PALMER

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit |
|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| Tetrachloroethene | None Detected | µg/L | 0.5 |
| Toluene | None Detected | µg/L | 0.5 |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 |
| Trichloroethene | None Detected | µg/L | 0.5 |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 |
| Vinyl Chloride | None Detected | µg/L | 0.5 |
| Total Xylenes | None Detected | µg/L | 1. |
| Methyl-t-butylether | None Detected | µg/L | 0.5 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106. | 76-114 |
| Toluene-d8 | 98. | 88-110 |
| 4-Bromofluorobenzene | 98. | 86-115 |

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-4

Project Number: None
Sampling Location: BOEING
Sample ID: RB-9
Sample Matrix: Groundwater
Sample Collected By: MIKE PALMER

Date Collected: 01/14/2000 @ 07:00
Date Extracted: 01/20/2000
Date Analyzed: 01/20/2000 @ 07:28
Analyst: MGC
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Benzene | None Detected | µg/L | 0.5 | |
| Bromobenzene | None Detected | µg/L | 0.5 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | |
| Bromodichloromethane | None Detected | µg/L | 0.5 | |
| Bromoform | None Detected | µg/L | 0.5 | |
| Bromomethane | None Detected | µg/L | 0.5 | |
| n-Butylbenzene | None Detected | µg/L | 0.5 | |
| sec-Butylbenzene | None Detected | µg/L | 0.5 | |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | |
| Carbon tetrachloride | None Detected | µg/L | 0.5 | |
| Chlorobenzene | None Detected | µg/L | 0.5 | |
| Chloroethane | None Detected | µg/L | 0.5 | |
| Chloroform | None Detected | µg/L | 0.5 | |
| Chloromethane | None Detected | µg/L | 0.5 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | |
| Dibromochloromethane | None Detected | µg/L | 0.5 | |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | |
| Dibromomethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethene | None Detected | µg/L | 0.5 | |
| cis-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| trans-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| Ethyl Benzene | None Detected | µg/L | 0.5 | |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 | |
| Isopropylbenzene | None Detected | µg/L | 0.5 | |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 | |
| Methylene Chloride | 0.23 | µg/L | 1. | *02 |
| Naphthalene | None Detected | µg/L | 0.5 | |
| n-Propylbenzene | None Detected | µg/L | 0.5 | |

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Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-4

Sample Description: BOEING, RB-9, 01/14/2000 @ 07:00, MIKE PALMER

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit |
|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| Tetrachloroethene | None Detected | µg/L | 0.5 |
| Toluene | None Detected | µg/L | 0.5 |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 |
| Trichloroethene | None Detected | µg/L | 0.5 |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 |
| Vinyl Chloride | None Detected | µg/L | 0.5 |
| Total Xylenes | None Detected | µg/L | 1. |
| Methyl-t-butylether | None Detected | µg/L | 0.5 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107. | 76-114 |
| Toluene-d8 | 98. | 88-110 |
| 4-Bromofluorobenzene | 96. | 86-115 |

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-6

Project Number: None
Sampling Location: BOEING
Sample ID: BL-8
Sample Matrix: Groundwater
Sample Collected By: MIKE PALMER

Date Collected: 01/14/2000 @ 10:05
Date Extracted: 01/20/2000
Date Analyzed: 01/20/2000 @ 08:03
Analyst: MGC
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Benzene | None Detected | µg/L | 0.5 | |
| Bromobenzene | None Detected | µg/L | 0.5 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | |
| Bromodichloromethane | None Detected | µg/L | 0.5 | |
| Bromoform | None Detected | µg/L | 0.5 | |
| Bromomethane | None Detected | µg/L | 0.5 | |
| n-Butylbenzene | None Detected | µg/L | 0.5 | |
| sec-Butylbenzene | None Detected | µg/L | 0.5 | |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | |
| Carbon tetrachloride | 0.21 | µg/L | 0.5 | *02 |
| Chlorobenzene | None Detected | µg/L | 0.5 | |
| Chloroethane | None Detected | µg/L | 0.5 | |
| Chloroform | 1.3 | µg/L | 0.5 | |
| Chloromethane | None Detected | µg/L | 0.5 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | |
| Dibromochloromethane | None Detected | µg/L | 0.5 | |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | |
| Dibromomethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethene | None Detected | µg/L | 0.5 | |
| cis-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| trans-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| Ethyl Benzene | None Detected | µg/L | 0.5 | |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 | |
| Isopropylbenzene | None Detected | µg/L | 0.5 | |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 | |
| Methylene Chloride | None Detected | µg/L | 1. | |
| Naphthalene | None Detected | µg/L | 0.5 | |
| n-Propylbenzene | None Detected | µg/L | 0.5 | |

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Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-6

Sample Description: BOEING, BL-8, 01/14/2000 @ 10:05, MIKE PALMER

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 | |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 | |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 | |
| Tetrachloroethene | None Detected | µg/L | 0.5 | |
| Toluene | 0.11 | µg/L | 0.5 | *02 |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 | |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 | |
| Trichloroethene | 14. | µg/L | 0.5 | |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 | |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 | |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 | |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 | |
| Vinyl Chloride | None Detected | µg/L | 0.5 | |
| Total Xylenes | None Detected | µg/L | 1. | |
| Methyl-t-butylether | None Detected | µg/L | 0.5 | |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 113. | 76-114 |
| Toluene-d8 | 99. | 88-110 |
| 4-Bromofluorobenzene | 96. | 86-115 |

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-8

Project Number: None
Sampling Location: BOEING
Sample ID: BL-7
Sample Matrix: Groundwater
Sample Collected By: MIKE PALMER

Date Collected: 01/14/2000 @ 11:15
Date Extracted: 01/20/2000
Date Analyzed: 01/20/2000 @ 09:14
Analyst: MGC
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Benzene | None Detected | µg/L | 0.5 | |
| Bromobenzene | None Detected | µg/L | 0.5 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | |
| Bromodichloromethane | None Detected | µg/L | 0.5 | |
| Bromoform | None Detected | µg/L | 0.5 | |
| Bromomethane | None Detected | µg/L | 0.5 | |
| n-Butylbenzene | None Detected | µg/L | 0.5 | |
| sec-Butylbenzene | None Detected | µg/L | 0.5 | |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | |
| Carbon tetrachloride | 0.21 | µg/L | 0.5 | *02 |
| Chlorobenzene | None Detected | µg/L | 0.5 | |
| Chloroethane | None Detected | µg/L | 0.5 | |
| Chloroform | 0.42 | µg/L | 0.5 | *02 |
| Chloromethane | None Detected | µg/L | 0.5 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | |
| Dibromochloromethane | None Detected | µg/L | 0.5 | |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | |
| Dibromomethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethene | None Detected | µg/L | 0.5 | |
| cis-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| trans-1,2-Dichloroethene | None Detected | µg/L | 0.5 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| Ethyl Benzene | None Detected | µg/L | 0.5 | |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 | |
| Isopropylbenzene | None Detected | µg/L | 0.5 | |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 | |
| Methylene Chloride | None Detected | µg/L | 1. | |
| Naphthalene | None Detected | µg/L | 0.5 | |
| n-Propylbenzene | None Detected | µg/L | 0.5 | |

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-8

Sample Description: BOEING, BL-7, 01/14/2000 @ 11:15, MIKE PALMER

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit |
|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| Tetrachloroethene | None Detected | µg/L | 0.5 |
| Toluene | 0.50 | µg/L | 0.5 |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 |
| Trichloroethene | 12. | µg/L | 0.5 |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 |
| Vinyl Chloride | None Detected | µg/L | 0.5 |
| Total Xylenes | None Detected | µg/L | 1. |
| Methyl-t-butylether | None Detected | µg/L | 0.5 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 110. | 76-114 |
| Toluene-d8 | 94. | 88-110 |
| 4-Bromofluorobenzene | 98. | 86-115 |

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-10

Project Number: None
Sampling Location: BOEING
Sample ID: BL-5
Sample Matrix: Groundwater
Sample Collected By: MIKE PALMER

Date Collected: 01/14/2000 @ 12:15
Date Extracted: 01/20/2000
Date Analyzed: 01/20/2000 @ 17:01
Analyst: MGC
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Benzene | 0.18 | µg/L | 0.5 | *02 |
| Bromobenzene | None Detected | µg/L | 0.5 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | |
| Bromodichloromethane | None Detected | µg/L | 0.5 | |
| Bromoform | None Detected | µg/L | 0.5 | |
| Bromomethane | None Detected | µg/L | 0.5 | |
| n-Butylbenzene | 0.12 | µg/L | 0.5 | *02 |
| sec-Butylbenzene | 0.15 | µg/L | 0.5 | *02 |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | |
| Carbon tetrachloride | None Detected | µg/L | 0.5 | |
| Chlorobenzene | None Detected | µg/L | 0.5 | |
| Chloroethane | None Detected | µg/L | 0.5 | |
| Chloroform | 1.2 | µg/L | 0.5 | |
| Chloromethane | None Detected | µg/L | 0.5 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | |
| Dibromochloromethane | None Detected | µg/L | 0.5 | |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | |
| Dibromomethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethane | 0.59 | µg/L | 0.5 | |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethene | 0.27 | µg/L | 0.5 | *02 |
| cis-1,2-Dichloroethene | 67. | µg/L | 0.5 | |
| trans-1,2-Dichloroethene | 1.0 | µg/L | 0.5 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| Ethyl Benzene | None Detected | µg/L | 0.5 | |
| Hexachlorobutadiene | 0.18 | µg/L | 0.5 | *02 |
| Isopropylbenzene | None Detected | µg/L | 0.5 | |
| p-Isopropyltoluene | 0.10 | µg/L | 0.5 | *02 |
| Methylene Chloride | None Detected | µg/L | 1. | |
| Naphthalene | 0.19 | µg/L | 0.5 | *02 |
| n-Propylbenzene | None Detected | µg/L | 0.5 | |

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-10

Sample Description: BOEING, BL-5, 01/14/2000 @ 12:15, MIKE PALMER

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit |
|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 |
| Tetrachloroethene | None Detected | µg/L | 0.5 |
| Toluene | None Detected | µg/L | 0.5 |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 |
| Trichloroethene | 1.8 | µg/L | 0.5 |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 |
| Vinyl Chloride | None Detected | µg/L | 0.5 |
| Total Xylenes | None Detected | µg/L | 1. |
| Methyl-t-butylether | None Detected | µg/L | 0.5 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106. | 76-114 |
| Toluene-d8 | 100. | 88-110 |
| 4-Bromofluorobenzene | 98. | 86-115 |

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-12

Project Number: None
Sampling Location: BOEING
Sample ID: BL-6
Sample Matrix: Groundwater
Sample Collected By: MIKE PALMER

Date Collected: 01/14/2000 @ 13:35
Date Extracted: 01/20/2000
Date Analyzed: 01/20/2000 @ 17:37
Analyst: MGC
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Benzene | 0.50 | µg/L | 0.5 | |
| Bromobenzene | None Detected | µg/L | 0.5 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | |
| Bromodichloromethane | 0.33 | µg/L | 0.5 | *02 |
| Bromoform | None Detected | µg/L | 0.5 | |
| Bromomethane | None Detected | µg/L | 0.5 | |
| n-Butylbenzene | None Detected | µg/L | 0.5 | |
| sec-Butylbenzene | None Detected | µg/L | 0.5 | |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | |
| Carbon tetrachloride | 0.83 | µg/L | 0.5 | |
| Chlorobenzene | None Detected | µg/L | 0.5 | |
| Chloroethane | None Detected | µg/L | 0.5 | |
| Chloroform | 10. | µg/L | 0.5 | |
| Chloromethane | None Detected | µg/L | 0.5 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | |
| Dibromochloromethane | None Detected | µg/L | 0.5 | |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | |
| Dibromomethane | None Detected | µg/L | 0.5 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 | *02 |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloroethene | 0.43 | µg/L | 0.5 | |
| cis-1,2-Dichloroethene | 14. | µg/L | 50. | |
| trans-1,2-Dichloroethene | 16. | µg/L | 0.5 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | |
| Ethyl Benzene | None Detected | µg/L | 0.5 | |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 | |
| Isopropylbenzene | None Detected | µg/L | 0.5 | |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 | |
| Methylene Chloride | None Detected | µg/L | 1. | |
| Naphthalene | None Detected | µg/L | 0.5 | |
| n-Propylbenzene | None Detected | µg/L | 0.5 | |

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
Attn: REX HOVEY 909-888-1690

Date Reported: 01/27/2000
Date Received: 01/14/2000
Laboratory No.: 00-00601-12

Sample Description: BOEING, BL-6, 01/14/2000 @ 13:35, MIKE PALMER

| Constituents | Analysis Results | Reporting Units | Practical Quantitation Limit | |
|---|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 | |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 | |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 | |
| Tetrachloroethene | 2.1 | µg/L | 0.5 | |
| Toluene | None Detected | µg/L | 0.5 | |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 | |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 | |
| 1,1,2-Trichloroethane | 0.60 | µg/L | 0.5 | |
| Trichloroethene | 4800. | µg/L | 50. | *60 |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 | |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 | |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 | |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 | |
| Vinyl Chloride | None Detected | µg/L | 0.5 | |
| Total Xylenes | None Detected | µg/L | 1. | |
| Methyl-t-butylether | None Detected | µg/L | 0.5 | |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 110. | 76-114 |
| Toluene-d8 | 99. | 88-110 |
| 4-Bromofluorobenzene | 99. | 86-115 |

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
*60 = Dilution factor is 100
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 01/21/2000
Sample Matrix: Groundwater
QC Batch ID: 200000601-2*TTLC

Samples Affected: 00-00601-2 - 00-00601-9

| Constituents | QC Sample ID | Sample Result | Sample Duplicate | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Sample R.P.D. | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexavalent Chromium | 600-22 | < 2.000 | < 2.000 | 55.44 | 56.13 | 52.60 | 52.60 | µg/L | <PQL | 1. | 10 | 105. | 107. | 85 - 115 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 01/21/2000
Sample Matrix: Groundwater
QC Batch ID: 200000601-2*TTLC

Samples Affected: 00-00601-2 - 00-00601-9

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Hexavalent Chromium | < 2. | µg/L |

Quality Control Officer

Anthony Bonanno

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QUALITY CONTROL REPORT
(Laboratory Control Sample)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 01/21/2000
Sample Matrix: Groundwater
QC Batch ID: 200000601-2*TTLC

Samples Affected: 00-00601-2 - 00-00601-9

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Hexavalent Chromium | LCSW-1-14- | 1053. | 1000. | µg/L | 105. | 90 - 110 |

Quality Control Officer

Anthony Bonanno

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QUALITY CONTROL REPORT
(Precision & Accuracy)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 01/21/2000
Sample Matrix: Groundwater
QC Batch ID: 200000601-10*TTLC

Samples Affected: 00-00601-10 - 00-00601-13

| Constituents | QC Sample ID | Sample Result | Sample Duplicate | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Sample R.P.D. | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexavalent Chromium | 601-10 | 3.398 | 3.398 | 61.67 | 62.36 | 52.60 | 52.60 | µg/L | <PQL | 1. | 10 | 111. | 112. | 85 - 115 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

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B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 01/21/2000
Sample Matrix: Groundwater
QC Batch ID: 200000601-10*TTLC

Samples Affected: 00-00601-10 - 00-00601-13

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Hexavalent Chromium | < 2. | µg/L |

Quality Control Officer

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QUALITY CONTROL REPORT
(Laboratory Control Sample)

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 01/21/2000
Sample Matrix: Groundwater
QC Batch ID: 200000601-10*TTLC

Samples Affected: 00-00601-10 - 00-00601-13

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Hexavalent Chromium | LCSW-1-14- | 1053. | 1000. | µg/L | 105. | 90 - 110 |

Quality Control Officer

Anthony Bonanno

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B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 02/28/2000
Sample Matrix: Blank Water
QC Batch ID: 200000601-1TB*8260

Samples Affected: 00-00601-1TB, 00-00601-2, 00-00601-4, 00-00601-6, 00-00601-8, 00-00601-10, 00-00601-12

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Benzene | < 0.5 | µg/L |
| Bromobenzene | < 0.5 | µg/L |
| Bromochloromethane | < 0.5 | µg/L |
| Bromodichloromethane | < 0.5 | µg/L |
| Bromoform | < 0.5 | µg/L |
| Bromomethane | < 0.5 | µg/L |
| n-Butylbenzene | < 0.5 | µg/L |
| sec-Butylbenzene | < 0.5 | µg/L |
| tert-Butylbenzene | < 0.5 | µg/L |
| Carbon tetrachloride | < 0.5 | µg/L |
| Chlorobenzene | < 0.5 | µg/L |
| Chloroethane | < 0.5 | µg/L |
| Chloroform | < 0.5 | µg/L |
| Chloromethane | < 0.5 | µg/L |
| 2-Chlorotoluene | < 0.5 | µg/L |
| 4-Chlorotoluene | < 0.5 | µg/L |
| Dibromochloromethane | < 0.5 | µg/L |
| 1,2-Dibromo-3-Chloropropane | < 1. | µg/L |
| 1,2-Dibromoethane | < 0.5 | µg/L |
| Dibromomethane | < 0.5 | µg/L |
| 1,2-Dichlorobenzene | < 0.5 | µg/L |
| 1,3-Dichlorobenzene | < 0.5 | µg/L |
| 1,4-Dichlorobenzene | < 0.5 | µg/L |
| Dichlorodifluoromethane | < 0.5 | µg/L |
| 1,1-Dichloroethane | < 0.5 | µg/L |
| 1,2-Dichloroethane | < 0.5 | µg/L |
| 1,1-Dichloroethene | < 0.5 | µg/L |
| cis-1,2-Dichloroethene | < 0.5 | µg/L |
| trans-1,2-Dichloroethene | < 0.5 | µg/L |

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QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 02/28/2000
Sample Matrix: Blank Water
QC Batch ID: 200000601-1TB*8260

Samples Affected: 00-00601-1TB, 00-00601-2, 00-00601-4, 00-00601-6, 00-00601-8, 00-00601-10, 00-00601-12

| Constituents | Method Blank Readings | Units |
|---|---|---|
| 1,2-Dichloropropane | < 0.5 | µg/L |
| 1,3-Dichloropropane | < 0.5 | µg/L |
| 2,2-Dichloropropane | < 0.5 | µg/L |
| 1,1-Dichloropropene | < 0.5 | µg/L |
| cis-1,3-Dichloropropene | < 0.5 | µg/L |
| trans-1,3-Dichloropropene | < 0.5 | µg/L |
| Ethyl Benzene | < 0.5 | µg/L |
| Hexachlorobutadiene | < 0.5 | µg/L |
| Isopropylbenzene | < 0.5 | µg/L |
| p-Isopropyltoluene | < 0.5 | µg/L |
| Methylene Chloride | < 1. | µg/L |
| Naphthalene | < 0.5 | µg/L |
| n-Propylbenzene | < 0.5 | µg/L |
| Styrene | < 0.5 | µg/L |
| 1,1,1,2-Tetrachloroethane | < 0.5 | µg/L |
| 1,1,2,2-Tetrachloroethane | < 0.5 | µg/L |
| Tetrachloroethene | < 0.5 | µg/L |
| Toluene | < 0.5 | µg/L |
| 1,2,3-Trichlorobenzene | < 0.5 | µg/L |
| 1,2,4-Trichlorobenzene | < 0.5 | µg/L |
| 1,1,1-Trichloroethane | < 0.5 | µg/L |
| 1,1,2-Trichloroethane | < 0.5 | µg/L |
| Trichloroethene | < 0.5 | µg/L |
| Trichlorofluoromethane | < 0.5 | µg/L |
| 1,2,3-Trichloropropane | < 0.5 | µg/L |
| 1,2,4-Trimethylbenzene | < 0.5 | µg/L |
| 1,3,5-Trimethylbenzene | < 0.5 | µg/L |
| Vinyl Chloride | < 0.5 | µg/L |
| Total Xylenes | < 1. | µg/L |

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 02/28/2000
Sample Matrix: Blank Water
QC Batch ID: 200000601-1TB*8260

Samples Affected: 00-00601-1TB, 00-00601-2, 00-00601-4, 00-00601-6, 00-00601-8, 00-00601-10, 00-00601-12

| Constituents | Method Blank Readings | Units |
|---|---|---|
| m & p-Xylene | < 0.5 | µg/L |
| o-Xylene | < 0.5 | µg/L |
| Methyl-t-butylether | < 0.5 | µg/L |
| 1,2-Dichloroethane-d4 | 105. | % |
| Toluene-d8 | 100. | % |
| 4-Bromofluorobenzene | 98. | % |

The surrogate recoveries for the method blank analyzed on 01/20/00 affecting lab #00-00601-8,10,12 are as follows (the results are none detected):
1,2-Dichloroethane-d4 - 105%
Toluene-d8 - 102%
4-Bromofluorobenzene - 100%

Quality Control Officer

Anthony Bonanno

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QUALITY CONTROL REPORT
(Precision & Accuracy)
Method 8260

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 02/28/2000
Sample Matrix: Blank Water
QC Batch ID: 200000601-1TB*8260

Samples Affected: 00-00601-1TB, 00-00601-2, 00-00601-4, 00-00601-6, 00-00601-8, 00-00601-10, 00-00601-12

| Constituents | QC Sample ID | Sample Result | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 648-2 | < 0.5 | 25. | 25. | 25. | 25. | µg/L | 0. | 20 | 99. | 99. | 80 - 120 |
| Bromodichloromethane | 648-2 | < 0.5 | 22. | 22. | 25. | 25. | µg/L | 0. | 20 | 90. | 90. | 80 - 120 |
| Chlorobenzene | 648-2 | < 0.5 | 26. | 25. | 25. | 25. | µg/L | 1. | 20 | 103. | 102. | 80 - 120 |
| Chloroethane | 648-2 | < 0.5 | 25. | 25. | 25. | 25. | µg/L | 1. | 20 | 101. | 100. | 80 - 120 |
| 1,4-Dichlorobenzene | 648-2 | < 0.5 | 25. | 25. | 25. | 25. | µg/L | 1. | 20 | 101. | 100. | 80 - 120 |
| 1,1-Dichloroethane | 648-2 | < 0.5 | 25. | 25. | 25. | 25. | µg/L | 0. | 20 | 101. | 101. | 80 - 120 |
| 1,1-Dichloroethene | 648-2 | < 0.5 | 26. | 26. | 25. | 25. | µg/L | 0. | 20 | 106. | 106. | 80 - 120 |
| Toluene | 648-2 | < 0.5 | 25. | 25. | 25. | 25. | µg/L | 1. | 20 | 100. | 101. | 80 - 120 |
| Trichloroethene | 648-2 | < 0.5 | 24. | 24. | 25. | 25. | µg/L | 1. | 20 | 97. | 97. | 80 - 120 |
| 1,2-Dichloroethane-d4 | MS/MSD | | | | | | | | | 110. | 107. | 76 - 114 |
| Toluene-d8 | MS/MSD | | | | | | | | | 100. | 102. | 88 - 110 |
| 4-Bromofluorobenzene | MS/MSD | | | | | | | | | 100. | 97. | 86 - 115 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

BOE-C6-0046060

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8260

HARDING LAWSON ASSOCIATES
2171 CAMPUS DRIVE, SUITE 100
IRVINE, CA 92612
REX HOVEY

Date of Report: 02/28/2000
Sample Matrix: Blank Water
QC Batch ID: 200000601-1TB*8260

Samples Affected: 00-00601-1TB, 00-00601-2, 00-00601-4, 00-00601-6, 00-00601-8, 00-00601-10, 00-00601-12

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Benzene | CCV-15 | 23. | 25. | µg/L | 94. | 80 - 120 |
| Bromodichloromethane | CCV-15 | 26. | 25. | µg/L | 105. | 80 - 120 |
| Chlorobenzene | CCV-15 | 24. | 25. | µg/L | 98. | 80 - 120 |
| Chloroethane | CCV-15 | 23. | 25. | µg/L | 92. | 80 - 120 |
| 1,4-Dichlorobenzene | CCV-15 | 24. | 25. | µg/L | 97. | 80 - 120 |
| 1,1-Dichloroethane | CCV-15 | 24. | 25. | µg/L | 95. | 80 - 120 |
| 1,1-Dichloroethene | CCV-15 | 24. | 25. | µg/L | 97. | 80 - 120 |
| Toluene | CCV-15 | 24. | 25. | µg/L | 96. | 80 - 120 |
| Trichloroethene | CCV-15 | 25. | 25. | µg/L | 100. | 80 - 120 |
| 1,2-Dichloroethane-d4 | CCV-15 | | | | 106. | 76 - 114 |
| Toluene-d8 | CCV-15 | | | | 102. | 88 - 110 |
| 4-Bromofluorobenzene | CCV-15 | | | | 99. | 86 - 115 |

Quality Control Officer

Anthony Bonanno

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# CHAIN OF CUSTODY

**LABORATORIES, INC.** 4100 Atlas Court - Bakersfield, CA 93308 (805) 327-4911 - FAX (805) 327-1918

**Report To:**

Name: HARDING LAWSON ASSOC.
Address: 2171 CAMPUS STE 100
City: IRVINE
State: CA. Zip: 92626
Attn:
Phone:

Project: BOEING
Project #:
Sampler Name: MIKE PALMER

**Submission #** 00-00601

**Analysis Requested** / **MATRIX**

| Lab # | Sample Description | Date & Time Sampled | EPA-8260 | CHROMIUM 6 FILTER | CHROMIUM 6 NON FILTERED | MATRIX (DW - Drinking Water, GW - Ground Water, WW - Waste Water, S - Soil, O - Oil, SL - Sludge, M - Miscellaneous) | Turn Around Time Requested | Number and Container Type |
|---|---|---|---|---|---|---|---|---|
| -1TB | TRAVEL BLANK | 1-6-00 1-14-00 | X | | | GW | STD. | 2/40 ml |
| -2 | FB-9 | 1-14-00 0640 | X | X | | | | 2/40 ml 1/LTR POLY |
| -3 | FB-9-NF | 0640 | [illegible] | | X | | | 1/LTR. POLY |
| -4 | RB-9 | 0700 | X | X | | | | 2/40 ml 1/LTR POLY |
| -5 | RB9-NF | 0700 | [illegible] | | X | | | 1/LTR POLY |
| -6 | BL-8 | 1005 | X | X | | | | 2/40 ml 1/500 ml POLY |
| -7 | BL-8 NF | 1005 | [illegible] | | X | | | 1/1 LTR POLY |
| -8 | BL-7 | 1115 | X | X | | | | 2/40 ml 1/500 ml POLY |
| -9 | BL-7 NF | 1115 | [illegible] | | X | | | 1/1 LTR POLY |
| -10 | BL-5 | 1215 | X | X | | | | 2/40 ml 1/500 ml POLY |
| -11 | BL-5 NF | 1215 | [illegible] | | X | | | 1/1 LTR POLY |
| -12 | BL-6 | 1335 | X | X | | | | 2/40 ml 1/1 LTR POLY |
| -13 | BL-6 NF | 1335 | | | X | | | 1/1 LTR POLY |

DISTRIBUTION: MA TC SB BG

NUMBERING CHECKED BY: [illegible]

**Billing Information:**

Name:
Address:
City State Zip
Attention:
PO #

**BC Lab. Field Service**

Time : Miles:
Equipment: Flat Rate:

Report Drinking Water on State Form ? Y / N
Send Copy to State of Calif. Y / N

Comments: STANDARD TURN AROUND FOR 8260
* 24 HR. T.A.T ON CHROMIUM 6

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| [signature] | [signature] | 1-14-00 | 14:35 |
| [signature] | [signature] | 1.14.2000 | 2030 |
| | | | |
| | | | |

Revised 5/97.... Sample Disposal by BC Labs may be billed at $5.00 / sample for non-aqueous Samples

BOE-C6-0046062

**BC Laboratories, Inc.**



WATER ANALYSIS
(METALS)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

| Constituents | | Results | Units | P.Q.L. | M.D.L. | Method | Date Prepared | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total Antimony | *01 | None Detected | µg/L | 500. | 40. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Arsenic | | 160. | µg/L | 4. | 3. | EPA-7060 | 01/21/00 | 02/01/00 |
| Total Barium | *01 | 630. | µg/L | 100. | 5. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Beryllium | | None Detected | µg/L | 50. | 2. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Cadmium | | None Detected | µg/L | 50. | 20. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Chromium | *01 | 300. | µg/L | 50. | 20. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Cobalt | | None Detected | µg/L | 250. | 7. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Copper | | 110. | µg/L | 50. | 20. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Lead | | 28. | µg/L | 5. | 0.4 | EPA-7421 | 01/21/00 | 01/25/00 |
| Total Mercury | | None Detected | µg/L | 0.2 | 0.10 | EPA-7470 | 01/27/00 | 01/28/00 |
| Total Molybdenum | *06 | 130. | µg/L | 250. | 20. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Nickel | *06 | 30. | µg/L | 50. | 20. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Selenium | | 13. | µg/L | 2. | 1.0 | SM-3114B | 02/04/00 | 02/04/00 |
| Total Silver | *01 | None Detected | µg/L | 50. | 20. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Thallium | | 1. | µg/L | 1. | 0.7 | EPA-7841 | 01/21/00 | 01/25/00 |
| Total Vanadium | | 50. | µg/L | 50. | 20. | EPA-6010 | 02/09/00 | 02/09/00 |
| Total Zinc | *06 | 130. | µg/L | 250. | 4.45 | EPA-6010 | 02/09/00 | 02/09/00 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
M.D.L. = Method Detection Limit

Flag Explanations:
*01 = Note: PQL's and MDL's are raised due to matrix interferences.
*06 = Note: PQL and MDL are raised due to matrix interferences. Sample result is between the MDL AND PQL.

California D.O.H.S. Cert. #1186

Dan Schultz
Laboratory Director

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**BC Laboratories, Inc.**



# Total Petroleum Hydrocarbons

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

| Constituents | Results | Units | P.Q.L. | M.D.L. | Method | Date Prepared | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | None Detected | mg/L | 1.0 | 0.3 | EPA-418.1 | 01/21/00 | 01/21/00 |

Note: Sample received at pH=10.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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# TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1

Title 22 Waste Type: Type ii: Liquid with ≥ 0.5 % solids.
Sample Collected By: KEN

| Constituents | | Sample Results | Units | Method P.Q.L. | Method | Date Prepared | Date Analyzed | Regulatory Criteria STLC mg/L | Regulatory Criteria TTLC mg/kg |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | None Detected | mg/kg | 5. | SW-6010 | 01/25/00 | 02/04/00 | 15. | 500. |
| Arsenic | | 2. | mg/kg | 0.5 | SW-7060 | 01/25/00 | 01/28/00 | 5.0 | 500. |
| Barium | *31 | 130. | mg/kg | 0.5 | SW-6010 | 01/25/00 | 02/04/00 | 100. | 10000. |
| Beryllium | | None Detected | mg/kg | 0.5 | SW-6010 | 01/25/00 | 02/04/00 | 0.75 | 75. |
| Cadmium | *04 | None Detected | mg/kg | 0.5 | SW-6010 | 01/25/00 | 02/04/00 | 1.0 | 100. |
| Chromium | *05 | 4.3 | mg/kg | 0.5 | SW-6010 | 01/25/00 | 02/04/00 | 560. | 2500. |
| Cobalt | | None Detected | mg/kg | 2.5 | SW-6010 | 01/25/00 | 02/04/00 | 80. | 8000. |
| Copper | *05 | 2.4 | mg/kg | 0.5 | SW-6010 | 01/25/00 | 02/04/00 | 25. | 2500. |
| Lead | *05 | 8.8 | mg/kg | 2.5 | SW-6010 | 01/25/00 | 02/04/00 | 5.0 | 1000. |
| Mercury | ** | 0.66 | mg/kg | 0.2 | SW-7471 | 01/25/00 | 01/26/00 | 0.2 | 20. |
| Molybdenum | | None Detected | mg/kg | 2.5 | SW-6010 | 01/25/00 | 02/04/00 | 350. | 3500. |
| Nickel | *31 | 3.3 | mg/kg | 2.5 | SW-6010 | 01/25/00 | 02/04/00 | 20. | 2000. |
| Selenium | | None Detected | mg/kg | 0.5 | SW-7740 | 01/25/00 | 01/31/00 | 1.0 | 100. |
| Silver | *04 | None Detected | mg/kg | 1. | SW-6010 | 01/25/00 | 02/04/00 | 5.0 | 500. |
| Thallium | | None Detected | mg/kg | 5. | SW-6010 | 01/25/00 | 02/04/00 | 7.0 | 700. |
| Vanadium | *05 | 6.4 | mg/kg | 0.5 | SW-6010 | 01/25/00 | 02/04/00 | 24. | 2400. |
| Zinc | *05 | 15. | mg/kg | 2.5 | SW-6010 | 01/25/00 | 02/04/00 | 250. | 5000. |
| Total Petroleum Hydrocarbons | | None Detected | mg/kg | 20. | EPA-418.1 | 01/21/00 | 01/21/00 | | |

(See Last Page for Comments, Definitions, and References)

**BC Laboratories, Inc.**



TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Sample Description: 49311.00.1, BOEING, SP-1, 01/19/2000 @ 11:00, KEN

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Comment: All above constituents are reported on an as received (wet) sample basis. Results reported represent totals (TTLC) as sample subjected to appropriate techniques to determine total levels.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
STLC = Soluble Threshold Limit Concentration
TTLC = Total Threshold Limit Concentration

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846.

Flag Explanations:
** = Sample precision is not within established limits. Matrix spike recovery/precision not within established limits. Results may be biased.
*04 = Matrix spike recoveries not within established limits, results may be affected.
*05 = Sample precision is not within established limits.
*31 = Matrix spike recoveries not within established limits, results may be biased. Sample precision is not within established limits.

California D.O.H.S. Cert. #1186

Dan Schultz
Laboratory Director

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**BC Laboratories, Inc.**



TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sampling Date/Time: 01/19/2000 @ 11:00

Title 22 Waste Type: Type ii: Liquid with ≥ 0.5 % solids.
Sample Collected By: KEN

| Constituents | | Sample Results | Units | P.Q.L. | M.D.L. | Method | Date Prepared | Date Analyzed | Dilution Factor |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | None Detected | mg/kg | 5. | 0.5 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Arsenic | | 2.7 | mg/kg | 0.5 | 0.2 | SW-7060 | 01/25/00 | 01/28/00 | .990099 |
| Barium | *31 | 110. | mg/kg | 0.5 | 0.033 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Beryllium | | None Detected | mg/kg | 0.5 | 0.029 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Cadmium | *04 | None Detected | mg/kg | 0.5 | 0.040 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Chromium | *05 | 6.9 | mg/kg | 0.5 | 0.14 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Cobalt | | None Detected | mg/kg | 2.5 | 0.041 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Copper | *05 | 2.9 | mg/kg | 0.5 | 0.006 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Lead | *05 | 8.3 | mg/kg | 2.5 | 0.02 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Mercury | ** | None Detected | mg/kg | 0.2 | 0.074 | SW-7471 | 01/25/00 | 01/26/00 | .919117 |
| Molybdenum | | None Detected | mg/kg | 2.5 | 0.2 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Nickel | *31 | 4.5 | mg/kg | 2.5 | 0.17 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Selenium | | None Detected | mg/kg | 0.5 | 0.2 | SW-7740 | 01/25/00 | 01/31/00 | .990099 |
| Silver | *04 | None Detected | mg/kg | 1. | 0.047 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Thallium | | None Detected | mg/kg | 5. | 0.4 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Vanadium | *05 | 8.5 | mg/kg | 0.5 | 0.044 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |
| Zinc | *05 | 18. | mg/kg | 2.5 | 0.075 | SW-6010 | 01/25/00 | 02/04/00 | .990099 |

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**BC Laboratories, Inc.**



TOTAL CONCENTRATIONS
(California Code of Regulations, Title 22, Section 66261)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/10/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Sample Description: 49311.00.1, BOEING, SP-2, 01/19/2000 @ 11:00, KEN

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Comment: All above constituents are reported on an as received (wet) sample basis. Results reported represent totals (TTLC) as sample subjected to appropriate techniques to determine total levels.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).
STLC = Soluble Threshold Limit Concentration
TTLC = Total Threshold Limit Concentration

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846.

Flag Explanations:
** = Sample precision is not within established limits. Matrix spike recovery/precision not within established limits. Results may be biased.
*04 = Matrix spike recoveries not within established limits, results may be affected.
*05 = Sample precision is not within established limits.
*31 = Matrix spike recoveries not within established limits, results may be biased. Sample precision is not within established limits.

California D.O.H.S. Cert. #1186

Dan Schultz
Laboratory Director

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**BC Laboratories, Inc.**



# Total Petroleum Hydrocarbons

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

| Constituents | Results | Units | P.Q.L. | M.D.L. | Method | Date Prepared | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | None Detected | mg/kg | 20. | 10. | EPA-418.1 | 01/21/00 | 01/21/00 |

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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**BC Laboratories, Inc.**



# Total Petroleum Hydrocarbons

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sampling Date/Time: 01/19/2000 @ 11:00
Sample Collected By: KEN

| Constituents | Results | Units | P.Q.L. | M.D.L. | Method | Date Prepared | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | None Detected | mg/kg | 20. | 10. | EPA-418.1 | 01/21/00 | 01/21/00 |

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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**BC Laboratories, Inc.**



PCBs
(EPA Method 8082)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 01/26/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/21/2000
Date Analyzed: 01/21/2000 @ 21:22
Analyst: SPB
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | P.Q.L. | M.D.L. |
|---|---|---|---|---|
| PCB-1016 | None Detected | µg/L | 0.2 | 0.002 |
| PCB-1221 | None Detected | µg/L | 0.2 | 0.002 |
| PCB-1232 | None Detected | µg/L | 0.2 | 0.002 |
| PCB-1242 | None Detected | µg/L | 0.2 | 0.032 |
| PCB-1248 | None Detected | µg/L | 0.2 | 0.022 |
| PCB-1254 | None Detected | µg/L | 0.2 | 0.002 |
| PCB-1260 | None Detected | µg/L | 0.2 | 0.046 |
| Total PCB's (Summation) | None Detected | µg/L | 0.2 | 0.002 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| Decachlorobiphenyl | 63. | 60-140 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M.D.L. = Method Detection Limit
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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**BC Laboratories, Inc.**



PCBs
(EPA Method 8082)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1
Sample Matrix: soil
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/29/2000 @ 05:19

| Constituents | Analysis Results | Reporting Units | P.Q.L. | M.D.L. |
|---|---|---|---|---|
| PCB-1016 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1221 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1232 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1242 | None Detected | mg/kg | 0.01 | 0.00093 |
| PCB-1248 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1254 | None Detected | mg/kg | 0.01 | 0.00078 |
| PCB-1260 | None Detected | mg/kg | 0.01 | 0.0015 |
| Total PCB's (Summation) | None Detected | mg/kg | 0.01 | 0.005 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| Decachlorobiphenyl | 80. | 60-140 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M.D.L. = Method Detection Limit
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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**BC Laboratories, Inc.**



PCBs
(EPA Method 8082)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sample Matrix: soil
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/29/2000 @ 12:30

| Constituents | Analysis Results | Reporting Units | P.Q.L. | M.D.L. |
|---|---|---|---|---|
| PCB-1016 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1221 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1232 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1242 | None Detected | mg/kg | 0.01 | 0.00093 |
| PCB-1248 | None Detected | mg/kg | 0.01 | 0.005 |
| PCB-1254 | None Detected | mg/kg | 0.01 | 0.00078 |
| PCB-1260 | None Detected | mg/kg | 0.01 | 0.0015 |
| Total PCB's (Summation) | None Detected | mg/kg | 0.01 | 0.005 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| Decachlorobiphenyl | 53. | 60-140 |

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

M.D.L. = Method Detection Limit

Surrogate is low due to matrix interference. Interference verified through second extraction/analysis.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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**BC Laboratories, Inc.**



Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/24/2000 @ 17:16
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level | |
|---|---|---|---|---|---|
| Benzene | None Detected | µg/L | 0.5 | 0.062 | |
| Bromobenzene | None Detected | µg/L | 0.5 | 0.057 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | 0.095 | |
| Bromodichloromethane | 0.32 | µg/L | 0.5 | 0.10 | *02 |
| Bromoform | None Detected | µg/L | 0.5 | 0.079 | |
| Bromomethane | None Detected | µg/L | 0.5 | 0.11 | |
| n-Butylbenzene | None Detected | µg/L | 0.5 | 0.083 | |
| sec-Butylbenzene | None Detected | µg/L | 0.5 | 0.017 | |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | 0.081 | |
| Carbon tetrachloride | None Detected | µg/L | 0.5 | 0.065 | |
| Chlorobenzene | None Detected | µg/L | 0.5 | 0.047 | |
| Chloroethane | None Detected | µg/L | 0.5 | 0.086 | |
| Chloroform | 3.2 | µg/L | 0.5 | 0.11 | |
| Chloromethane | None Detected | µg/L | 0.5 | 0.13 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | 0.072 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | 0.061 | |
| Dibromochloromethane | 0.49 | µg/L | 0.5 | 0.056 | *02 |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | 0.40 | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | 0.035 | |
| Dibromomethane | None Detected | µg/L | 0.5 | 0.094 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | 0.096 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | 0.065 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | 0.065 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | 0.085 | *03 |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 | 0.065 | |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | 0.080 | |
| 1,1-Dichloroethene | None Detected | µg/L | 0.5 | 0.075 | |
| cis-1,2-Dichloroethene | None Detected | µg/L | 0.5 | 0.13 | |
| trans-1,2-Dichloroethene | None Detected | µg/L | 0.5 | 0.13 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | 0.074 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | 0.078 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | 0.32 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | 0.072 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | 0.053 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | 0.054 | |
| Ethyl Benzene | 0.17 | µg/L | 0.5 | 0.051 | *02 |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 | 0.073 | |
| Isopropylbenzene | None Detected | µg/L | 0.5 | 0.074 | |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 | 0.064 | |
| Methylene Chloride | 0.43 | µg/L | 1. | 0.15 | *02 |
| Naphthalene | 0.36 | µg/L | 0.5 | 0.11 | *02 |
| n-Propylbenzene | None Detected | µg/L | 0.5 | 0.059 | |

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**BC Laboratories, Inc.**



Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1

Sample Description: 49311.00.1, BOEING, WWP-1, 01/19/2000 @ 11:00, KEN

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level | |
|---|---|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 | 0.061 | |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 | 0.057 | |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 | 0.094 | |
| Tetrachloroethene | None Detected | µg/L | 0.5 | 0.059 | |
| Toluene | 3.6 | µg/L | 0.5 | 0.094 | |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 | 0.12 | |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 | 0.085 | |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 | 0.076 | |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 | 0.10 | |
| Trichloroethene | 2.0 | µg/L | 0.5 | 0.12 | |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 | 0.07 | |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 | 0.23 | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | None Detected | µg/L | 0.5 | 0.070 | |
| 1,2,4-Trimethylbenzene | 0.11 | µg/L | 0.5 | 0.062 | *02 |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 | 0.07 | |
| Vinyl Chloride | None Detected | µg/L | 0.5 | 0.050 | |
| Total Xylenes | 0.84 | µg/L | 1. | 0.16 | *02 |
| Methyl-t-butylether | 1.4 | µg/L | 0.5 | 0.14 | |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 98. | 76-114 |
| Toluene-d8 | 102. | 88-110 |
| 4-Bromofluorobenzene | 99. | 86-115 |

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
*03 = CCV recovery not within method limits.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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**BC Laboratories, Inc.**



Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1TB

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: WWP-1 TB
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/24/2000
Date Analyzed: 01/24/2000 @ 16:37
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level | |
|---|---|---|---|---|---|
| Benzene | None Detected | µg/L | 0.5 | 0.062 | |
| Bromobenzene | None Detected | µg/L | 0.5 | 0.057 | |
| Bromochloromethane | None Detected | µg/L | 0.5 | 0.095 | |
| Bromodichloromethane | None Detected | µg/L | 0.5 | 0.10 | |
| Bromoform | None Detected | µg/L | 0.5 | 0.079 | |
| Bromomethane | None Detected | µg/L | 0.5 | 0.11 | |
| n-Butylbenzene | None Detected | µg/L | 0.5 | 0.083 | |
| sec-Butylbenzene | None Detected | µg/L | 0.5 | 0.017 | |
| tert-Butylbenzene | None Detected | µg/L | 0.5 | 0.081 | |
| Carbon tetrachloride | None Detected | µg/L | 0.5 | 0.065 | |
| Chlorobenzene | None Detected | µg/L | 0.5 | 0.047 | |
| Chloroethane | None Detected | µg/L | 0.5 | 0.086 | |
| Chloroform | None Detected | µg/L | 0.5 | 0.11 | |
| Chloromethane | None Detected | µg/L | 0.5 | 0.13 | |
| 2-Chlorotoluene | None Detected | µg/L | 0.5 | 0.072 | |
| 4-Chlorotoluene | None Detected | µg/L | 0.5 | 0.061 | |
| Dibromochloromethane | None Detected | µg/L | 0.5 | 0.056 | |
| 1,2-Dibromo-3-Chloropropane | None Detected | µg/L | 1. | 0.40 | |
| 1,2-Dibromoethane | None Detected | µg/L | 0.5 | 0.035 | |
| Dibromomethane | None Detected | µg/L | 0.5 | 0.094 | |
| 1,2-Dichlorobenzene | None Detected | µg/L | 0.5 | 0.096 | |
| 1,3-Dichlorobenzene | None Detected | µg/L | 0.5 | 0.065 | |
| 1,4-Dichlorobenzene | None Detected | µg/L | 0.5 | 0.065 | |
| Dichlorodifluoromethane | None Detected | µg/L | 0.5 | 0.085 | *03 |
| 1,1-Dichloroethane | None Detected | µg/L | 0.5 | 0.065 | |
| 1,2-Dichloroethane | None Detected | µg/L | 0.5 | 0.080 | |
| 1,1-Dichloroethene | None Detected | µg/L | 0.5 | 0.075 | |
| cis-1,2-Dichloroethene | None Detected | µg/L | 0.5 | 0.13 | |
| trans-1,2-Dichloroethene | None Detected | µg/L | 0.5 | 0.13 | |
| 1,2-Dichloropropane | None Detected | µg/L | 0.5 | 0.074 | |
| 1,3-Dichloropropane | None Detected | µg/L | 0.5 | 0.078 | |
| 2,2-Dichloropropane | None Detected | µg/L | 0.5 | 0.32 | |
| 1,1-Dichloropropene | None Detected | µg/L | 0.5 | 0.072 | |
| cis-1,3-Dichloropropene | None Detected | µg/L | 0.5 | 0.053 | |
| trans-1,3-Dichloropropene | None Detected | µg/L | 0.5 | 0.054 | |
| Ethyl Benzene | None Detected | µg/L | 0.5 | 0.051 | |
| Hexachlorobutadiene | None Detected | µg/L | 0.5 | 0.073 | |
| Isopropylbenzene | None Detected | µg/L | 0.5 | 0.074 | |
| p-Isopropyltoluene | None Detected | µg/L | 0.5 | 0.064 | |
| Methylene Chloride | 0.22 | µg/L | 1. | 0.15 | *02 |
| Naphthalene | None Detected | µg/L | 0.5 | 0.11 | |
| n-Propylbenzene | None Detected | µg/L | 0.5 | 0.059 | |

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Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-1TB

Sample Description: 49311.00.1, BOEING, WWP-1 TB, 01/19/2000 @ 11:00, KEN

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level | |
|---|---|---|---|---|---|
| Styrene | None Detected | µg/L | 0.5 | 0.061 | |
| 1,1,1,2-Tetrachloroethane | None Detected | µg/L | 0.5 | 0.057 | |
| 1,1,2,2-Tetrachloroethane | None Detected | µg/L | 0.5 | 0.094 | |
| Tetrachloroethene | None Detected | µg/L | 0.5 | 0.059 | |
| Toluene | None Detected | µg/L | 0.5 | 0.094 | |
| 1,2,3-Trichlorobenzene | None Detected | µg/L | 0.5 | 0.12 | |
| 1,2,4-Trichlorobenzene | None Detected | µg/L | 0.5 | 0.085 | |
| 1,1,1-Trichloroethane | None Detected | µg/L | 0.5 | 0.076 | |
| 1,1,2-Trichloroethane | None Detected | µg/L | 0.5 | 0.10 | |
| Trichloroethene | None Detected | µg/L | 0.5 | 0.12 | |
| Trichlorofluoromethane | None Detected | µg/L | 0.5 | 0.07 | |
| 1,2,3-Trichloropropane | None Detected | µg/L | 0.5 | 0.23 | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | None Detected | µg/L | 0.5 | 0.070 | |
| 1,2,4-Trimethylbenzene | None Detected | µg/L | 0.5 | 0.062 | |
| 1,3,5-Trimethylbenzene | None Detected | µg/L | 0.5 | 0.07 | |
| Vinyl Chloride | None Detected | µg/L | 0.5 | 0.050 | |
| Total Xylenes | None Detected | µg/L | 1. | 0.16 | |
| Methyl-t-butylether | 0.17 | µg/L | 0.5 | 0.14 | *02 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 100. | 76-114 |
| Toluene-d8 | 102. | 88-110 |
| 4-Bromofluorobenzene | 98. | 86-115 |

Flag Explanations:
*02 = Sample result is between the MDL and PQL.
*03 = CCV recovery not within method limits.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc.



Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-1
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/21/2000
Date Analyzed: 01/21/2000 @ 23:59
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level |
|---|---|---|---|---|
| Benzene | None Detected | mg/kg | 0.005 | 0.00069 |
| Bromobenzene | None Detected | mg/kg | 0.005 | 0.00056 |
| Bromochloromethane | None Detected | mg/kg | 0.005 | 0.0004 |
| Bromodichloromethane | None Detected | mg/kg | 0.005 | 0.00059 |
| Bromoform | None Detected | mg/kg | 0.005 | 0.00050 |
| Bromomethane | None Detected | mg/kg | 0.005 | 0.0014 |
| n-Butylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| sec-Butylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| tert-Butylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| Carbon tetrachloride | None Detected | mg/kg | 0.005 | 0.0015 |
| Chlorobenzene | None Detected | mg/kg | 0.005 | 0.00052 |
| Chloroethane | None Detected | mg/kg | 0.005 | 0.00096 |
| Chloroform | None Detected | mg/kg | 0.005 | 0.00065 |
| Chloromethane | None Detected | mg/kg | 0.005 | 0.00089 |
| 2-Chlorotoluene | None Detected | mg/kg | 0.005 | 0.0003 |
| 4-Chlorotoluene | None Detected | mg/kg | 0.005 | 0.0006 |
| Dibromochloromethane | None Detected | mg/kg | 0.005 | 0.00045 |
| 1,2-Dibromo-3-Chloropropane | None Detected | mg/kg | 0.005 | 0.0019 |
| 1,2-Dibromoethane | None Detected | mg/kg | 0.005 | 0.0003 |
| Dibromomethane | None Detected | mg/kg | 0.005 | 0.0005 |
| 1,2-Dichlorobenzene | None Detected | mg/kg | 0.005 | 0.00045 |
| 1,3-Dichlorobenzene | None Detected | mg/kg | 0.005 | 0.0005 |
| 1,4-Dichlorobenzene | None Detected | mg/kg | 0.005 | 0.00048 |
| Dichlorodifluoromethane | None Detected | mg/kg | 0.005 | 0.0010 |
| 1,1-Dichloroethane | None Detected | mg/kg | 0.005 | 0.00078 |
| 1,2-Dichloroethane | None Detected | mg/kg | 0.005 | 0.00084 |
| 1,1-Dichloroethene | None Detected | mg/kg | 0.005 | 0.0011 |
| cis-1,2-Dichloroethene | None Detected | mg/kg | 0.005 | 0.00067 |
| trans-1,2-Dichloroethene | None Detected | mg/kg | 0.005 | 0.0010 |
| 1,2-Dichloropropane | None Detected | mg/kg | 0.005 | 0.00062 |
| 1,3-Dichloropropane | None Detected | mg/kg | 0.005 | 0.0005 |
| 2,2-Dichloropropane | None Detected | mg/kg | 0.005 | 0.0007 |
| 1,1-Dichloropropene | None Detected | mg/kg | 0.005 | 0.0005 |
| cis-1,3-Dichloropropene | None Detected | mg/kg | 0.005 | 0.00060 |
| trans-1,3-Dichloropropene | None Detected | mg/kg | 0.005 | 0.00040 |
| Ethyl Benzene | None Detected | mg/kg | 0.005 | 0.00074 |
| Hexachlorobutadiene | None Detected | mg/kg | 0.005 | 0.0007 |
| Isopropylbenzene | None Detected | mg/kg | 0.005 | 0.0003 |
| p-Isopropyltoluene | None Detected | mg/kg | 0.005 | 0.0003 |
| Methylene Chloride | None Detected | mg/kg | 0.01 | 0.0010 |
| Naphthalene | None Detected | mg/kg | 0.005 | 0.0006 |
| n-Propylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |

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Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-2

Sample Description: 49311.00.1, BOEING, SP-1, 01/19/2000 @ 11:00, KEN

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level |
|---|---|---|---|---|
| Styrene | None Detected | mg/kg | 0.005 | 0.0004 |
| 1,1,1,2-Tetrachloroethane | None Detected | mg/kg | 0.005 | 0.00033 |
| 1,1,2,2-Tetrachloroethane | None Detected | mg/kg | 0.005 | 0.00066 |
| Tetrachloroethene | None Detected | mg/kg | 0.005 | 0.0008 |
| Toluene | None Detected | mg/kg | 0.005 | 0.00055 |
| 1,2,3-Trichlorobenzene | None Detected | mg/kg | 0.005 | 0.0006 |
| 1,2,4-Trichlorobenzene | None Detected | mg/kg | 0.005 | 0.0006 |
| 1,1,1-Trichloroethane | None Detected | mg/kg | 0.005 | 0.0011 |
| 1,1,2-Trichloroethane | None Detected | mg/kg | 0.005 | 0.0006 |
| Trichloroethene | None Detected | mg/kg | 0.005 | 0.00064 |
| Trichlorofluoromethane | None Detected | mg/kg | 0.005 | 0.0012 |
| 1,2,3-Trichloropropane | None Detected | mg/kg | 0.005 | 0.00074 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | None Detected | mg/kg | 0.005 | 0.0012 |
| 1,2,4-Trimethylbenzene | None Detected | mg/kg | 0.005 | 0.0003 |
| 1,3,5-Trimethylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| Vinyl Chloride | None Detected | mg/kg | 0.005 | 0.0011 |
| Total Xylenes | None Detected | mg/kg | 0.01 | 0.0016 |
| Methyl-t-butylether | None Detected | mg/kg | 0.005 | 0.0025 |

Quality Control Data

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 121. | 70-121 |
| Toluene-d8 | 89. | 81-117 |
| 4-Bromofluorobenzene | 105. | 74-121 |

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Project Number: 49311.00.1
Sampling Location: BOEING
Sample ID: SP-2
Sample Matrix: Water
Sample Collected By: KEN

Date Collected: 01/19/2000 @ 11:00
Date Extracted: 01/21/2000
Date Analyzed: 01/21/2000 @ 22:43
Dilution Used: 1

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level |
|---|---|---|---|---|
| Benzene | None Detected | mg/kg | 0.005 | 0.00069 |
| Bromobenzene | None Detected | mg/kg | 0.005 | 0.00056 |
| Bromochloromethane | None Detected | mg/kg | 0.005 | 0.0004 |
| Bromodichloromethane | None Detected | mg/kg | 0.005 | 0.00059 |
| Bromoform | None Detected | mg/kg | 0.005 | 0.00050 |
| Bromomethane | None Detected | mg/kg | 0.005 | 0.0014 |
| n-Butylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| sec-Butylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| tert-Butylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| Carbon tetrachloride | None Detected | mg/kg | 0.005 | 0.0015 |
| Chlorobenzene | None Detected | mg/kg | 0.005 | 0.00052 |
| Chloroethane | None Detected | mg/kg | 0.005 | 0.00096 |
| Chloroform | None Detected | mg/kg | 0.005 | 0.00065 |
| Chloromethane | None Detected | mg/kg | 0.005 | 0.00089 |
| 2-Chlorotoluene | None Detected | mg/kg | 0.005 | 0.0003 |
| 4-Chlorotoluene | None Detected | mg/kg | 0.005 | 0.0006 |
| Dibromochloromethane | None Detected | mg/kg | 0.005 | 0.00045 |
| 1,2-Dibromo-3-Chloropropane | None Detected | mg/kg | 0.005 | 0.0019 |
| 1,2-Dibromoethane | None Detected | mg/kg | 0.005 | 0.0003 |
| Dibromomethane | None Detected | mg/kg | 0.005 | 0.0005 |
| 1,2-Dichlorobenzene | None Detected | mg/kg | 0.005 | 0.00045 |
| 1,3-Dichlorobenzene | None Detected | mg/kg | 0.005 | 0.0005 |
| 1,4-Dichlorobenzene | None Detected | mg/kg | 0.005 | 0.00048 |
| Dichlorodifluoromethane | None Detected | mg/kg | 0.005 | 0.0010 |
| 1,1-Dichloroethane | None Detected | mg/kg | 0.005 | 0.00078 |
| 1,2-Dichloroethane | None Detected | mg/kg | 0.005 | 0.00084 |
| 1,1-Dichloroethene | None Detected | mg/kg | 0.005 | 0.0011 |
| cis-1,2-Dichloroethene | None Detected | mg/kg | 0.005 | 0.00067 |
| trans-1,2-Dichloroethene | None Detected | mg/kg | 0.005 | 0.0010 |
| 1,2-Dichloropropane | None Detected | mg/kg | 0.005 | 0.00062 |
| 1,3-Dichloropropane | None Detected | mg/kg | 0.005 | 0.0005 |
| 2,2-Dichloropropane | None Detected | mg/kg | 0.005 | 0.0007 |
| 1,1-Dichloropropene | None Detected | mg/kg | 0.005 | 0.0005 |
| cis-1,3-Dichloropropene | None Detected | mg/kg | 0.005 | 0.00060 |
| trans-1,3-Dichloropropene | None Detected | mg/kg | 0.005 | 0.00040 |
| Ethyl Benzene | None Detected | mg/kg | 0.005 | 0.00074 |
| Hexachlorobutadiene | None Detected | mg/kg | 0.005 | 0.0007 |
| Isopropylbenzene | None Detected | mg/kg | 0.005 | 0.0003 |
| p-Isopropyltoluene | None Detected | mg/kg | 0.005 | 0.0003 |
| Methylene Chloride | None Detected | mg/kg | 0.01 | 0.0010 |
| Naphthalene | None Detected | mg/kg | 0.005 | 0.0006 |
| n-Propylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |

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**BC Laboratories, Inc.**



Volatile Organic Analysis
(EPA Method 8260)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
Attn: MARK CLARDY 909-888-1690

Date Reported: 02/02/2000
Date Received: 01/19/2000
Laboratory No.: 00-00785-3

Sample Description: 49311.00.1, BOEING, SP-2, 01/19/2000 @ 11:00, KEN

| Constituents | Analysis Results | Reporting Units | Method P.Q.L. | Method Detection Level |
|---|---|---|---|---|
| Styrene | None Detected | mg/kg | 0.005 | 0.0004 |
| 1,1,1,2-Tetrachloroethane | None Detected | mg/kg | 0.005 | 0.00033 |
| 1,1,2,2-Tetrachloroethane | None Detected | mg/kg | 0.005 | 0.00066 |
| Tetrachloroethene | None Detected | mg/kg | 0.005 | 0.0008 |
| Toluene | None Detected | mg/kg | 0.005 | 0.00055 |
| 1,2,3-Trichlorobenzene | None Detected | mg/kg | 0.005 | 0.0006 |
| 1,2,4-Trichlorobenzene | None Detected | mg/kg | 0.005 | 0.0006 |
| 1,1,1-Trichloroethane | None Detected | mg/kg | 0.005 | 0.0011 |
| 1,1,2-Trichloroethane | None Detected | mg/kg | 0.005 | 0.0006 |
| Trichloroethene | None Detected | mg/kg | 0.005 | 0.00064 |
| Trichlorofluoromethane | None Detected | mg/kg | 0.005 | 0.0012 |
| 1,2,3-Trichloropropane | None Detected | mg/kg | 0.005 | 0.00074 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | None Detected | mg/kg | 0.005 | 0.0012 |
| 1,2,4-Trimethylbenzene | None Detected | mg/kg | 0.005 | 0.0003 |
| 1,3,5-Trimethylbenzene | None Detected | mg/kg | 0.005 | 0.0004 |
| Vinyl Chloride | None Detected | mg/kg | 0.005 | 0.0011 |
| Total Xylenes | None Detected | mg/kg | 0.01 | 0.0016 |
| Methyl-t-butylether | None Detected | mg/kg | 0.005 | 0.0025 |

Quality Control Data

| Surrogates | % Recovery | Control Limits | |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 126. | 70-121 | *21 |
| Toluene-d8 | 90. | 81-117 | |
| 4-Bromofluorobenzene | 106. | 74-121 | |

Flag Explanations:
*21 = Surrogate recovery not within established limits.
California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TTLC

Samples Affected: 00-00785-1

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Total Antimony | <100. | µg/L |
| Total Arsenic | < 2. | µg/L |
| Total Barium | <100. | µg/L |
| Total Beryllium | <10. | µg/L |
| Total Cadmium | <10. | µg/L |
| Total Chromium | <10. | µg/L |
| Total Cobalt | <50. | µg/L |
| Total Copper | <10. | µg/L |
| Total Lead | < 5. | µg/L |
| Total Mercury | < 0.2 | µg/L |
| Total Molybdenum | <50. | µg/L |
| Total Nickel | <10. | µg/L |
| Total Selenium | < 2. | µg/L |
| Total Silver | <10. | µg/L |
| Total Thallium | < 1. | µg/L |
| Total Vanadium | <10. | µg/L |
| Total Zinc | 7.2 | µg/L |

The trace detection for zinc is an estimated value between the MDL and PQL.

Quality Control Officer

Anthony Bonanno

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**BC Laboratories, Inc**

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TTLC

Samples Affected: 00-00785-1

| Constituents | QC Sample ID | Sample Result | Sample Duplicate | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Sample R.P.D. | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Antimony | TOTAL-864-1 | <100. | <100. | 392.8 | 399.3 | 400.0 | 400.0 | µg/L | <PQL | 2. | 20 | 97. | 99. | 80 - 120 |
| Total Arsenic | TOTAL-789-1QC | 1.460 | 1.150 | 20.06 | 20.25 | 20.00 | 20.00 | µg/L | <PQL | 1. | 20 | 93. | 94. | 80 - 120 |
| Total Barium | TOTAL-864-1 | 354.1 | 363.7 | 555.9 | 561.2 | 200.0 | 200.0 | µg/L | <PQL | 1. | 20 | 101. | 104. | 80 - 120 |
| Total Beryllium | TOTAL-864-1 | < 10. | < 10. | 196.4 | 202.1 | 200.0 | 200.0 | µg/L | <PQL | 3. | 20 | 98. | 101. | 80 - 120 |
| Total Cadmium | TOTAL-864-1 | < 10. | < 10. | 183.2 | 188.0 | 200.0 | 200.0 | µg/L | <PQL | 3. | 20 | 93. | 95. | 80 - 120 |
| Total Chromium | TOTAL-864-1 | < 10. | < 10. | 200.2 | 203.5 | 200.0 | 200.0 | µg/L | <PQL | 2. | 20 | 102. | 103. | 80 - 120 |
| Total Cobalt | TOTAL-864-1 | < 50. | < 50. | 192.6 | 196.8 | 200.0 | 200.0 | µg/L | <PQL | 2. | 20 | 97. | 99. | 80 - 120 |
| Total Copper | TOTAL-864-1 | < 10. | < 10. | 188.0 | 191.8 | 200.0 | 200.0 | µg/L | <PQL | 2. | 20 | 98. | 100. | 80 - 120 |
| Total Lead | TOTAL-789-1 | < 5. | < 5. | 17.54 | 17.80 | 20.00 | 20.00 | µg/L | <PQL | 1. | 20 | 88. | 89. | 80 - 120 |
| Total Mercury | TOTAL-00747-1 | < 0.2 | < 0.2 | 1.125 | 1.023 | 1.000 | 1.000 | µg/L | <PQL | 10. | 20 | 105. | 95. | 70 - 130 |
| Total Molybdenum | TOTAL-864-1 | < 50. | < 50. | 206.1 | 213.2 | 200.0 | 200.0 | µg/L | <PQL | 3. | 20 | 103. | 107. | 80 - 120 |
| Total Nickel | TOTAL-864-1 | < 10. | 6.400 | 396.0 | 407.7 | 400.0 | 400.0 | µg/L | <PQL | 3. | 20 | 98. | 101. | 80 - 120 |
| Total Selenium | DISS-647-1 | < 2. | < 2. | 16.64 | 17.54 | 20.00 | 20.00 | µg/L | <PQL | 5. | 20 | 84. | 88. | 80 - 120 |
| Total Silver | TOTAL-864-1 | < 10. | < 10. | 194.3 | 194.6 | 200.0 | 200.0 | µg/L | <PQL | 0. | 20 | 98. | 98. | 80 - 120 |
| Total Thallium | TOTAL-789-1 | < 1. | < 1. | 23.33 | 23.25 | 20.00 | 20.00 | µg/L | <PQL | 0. | 20 | 117. | 117. | 80 - 120 |
| Total Vanadium | TOTAL-864-1 | < 10. | < 10. | 196.3 | 199.9 | 200.0 | 200.0 | µg/L | <PQL | 2. | 20 | 98. | 100. | 80 - 120 |
| Total Zinc | TOTAL-864-1 | 21.50 | 45.20 | 214.5 | 241.9 | 200.0 | 200.0 | µg/L | <PQL | 12. | 20 | 97. | 110. | 80 - 120 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Benanno

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**BC Laboratories, Inc**

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TTLC

Samples Affected: 00-00785-1

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Total Antimony | TOTAL-LCSW | 406.90 | 400. | µg/L | 102. | 85 - 115 |
| Total Arsenic | TOTAL-LCSW | 21.040 | 20. | µg/L | 105. | 80 - 120 |
| Total Barium | TOTAL-LCSW | 198.60 | 200. | µg/L | 99. | 85 - 115 |
| Total Beryllium | TOTAL-LCSW | 202.50 | 200. | µg/L | 101. | 85 - 115 |
| Total Cadmium | TOTAL-LCSW | 187.70 | 200. | µg/L | 94. | 85 - 115 |
| Total Chromium | TOTAL-LCSW | 207.70 | 200. | µg/L | 104. | 85 - 115 |
| Total Cobalt | TOTAL-LCSW | 199.30 | 200. | µg/L | 100. | 85 - 115 |
| Total Copper | TOTAL-LCSW | 200.00 | 200. | µg/L | 100. | 85 - 115 |
| Total Lead | TOTAL-LCSW | 20.520 | 20. | µg/L | 103. | 80 - 120 |
| Total Mercury | LCSW1-01-2 | 0.97678 | 1.0 | µg/L | 98. | 85 - 115 |
| Total Molybdenum | TOTAL-LCSW | 208.00 | 200. | µg/L | 104. | 85 - 115 |
| Total Nickel | TOTAL-LCSW | 406.70 | 400. | µg/L | 102. | 85 - 115 |
| Total Selenium | LCSW2-02-0 | 8.5600 | 10. | µg/L | 86. | 85 - 115 |
| Total Silver | TOTAL-LCSW | 196.50 | 200. | µg/L | 98. | 85 - 115 |
| Total Thallium | TOTAL-LCSW | 22.490 | 20. | µg/L | 112. | 80 - 120 |
| Total Vanadium | TOTAL-LCSW | 199.70 | 200. | µg/L | 100. | 85 - 115 |
| Total Zinc | TOTAL-LCSW | 208.90 | 200. | µg/L | 104. | 85 - 115 |

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Antimony | < 5. | mg/kg |
| Arsenic | < 0.5 | mg/kg |
| Barium | < 0.5 | mg/kg |
| Beryllium | < 0.5 | mg/kg |
| Cadmium | < 0.5 | mg/kg |
| Chromium | < 0.5 | mg/kg |
| Cobalt | < 2.5 | mg/kg |
| Copper | < 0.5 | mg/kg |
| Lead | < 2.5 | mg/kg |
| Mercury | < 0.1 | mg/kg |
| Molybdenum | < 2.5 | mg/kg |
| Nickel | < 2.5 | mg/kg |
| Selenium | < 0.5 | mg/kg |
| Silver | < 1. | mg/kg |
| Thallium | < 5. | mg/kg |
| Vanadium | < 0.5 | mg/kg |
| Zinc | < 2.5 | mg/kg |

Quality Control Officer

Anthony Bonanno

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**BC Laboratories, Inc**

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | Sample Duplicate | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Sample R.P.D. | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | HP-785-2 | < 5. | < 5. | 30.28 | 31.00 | 96.15 | 96.15 | mg/kg | <PQL | 2. | 20 | 31. | 32. | 16 - 119 |
| Arsenic | HP-785-2-X5 | 2.075 | 2.536 | 6.935 | 6.315 | 4.808 | 4.808 | mg/kg | <PQL | 9. | 20 | 101. | 88. | 75 - 125 |
| Barium | HP-785-2 | 116.0 | 152.7 | 256.8 | 227.8 | 96.15 | 96.15 | mg/kg | 27. | 12. | 20 | 146. | 116. | 75 - 125 |
| Beryllium | HP-785-2 | 0.3558 | 0.4663 | 8.736 | 8.062 | 9.615 | 9.615 | mg/kg | <PQL | 8. | 20 | 87. | 80. | 75 - 125 |
| Cadmium | HP-785-2 | < 0.5 | < 0.5 | 7.712 | 7.125 | 9.615 | 9.615 | mg/kg | <PQL | 8. | 20 | 78. | 72. | 75 - 125 |
| Chromium | HP-785-2 | 3.620 | 5.058 | 94.71 | 86.30 | 96.15 | 96.15 | mg/kg | 33. | 9. | 20 | 95. | 86. | 75 - 125 |
| Cobalt | HP-785-2 | < 2.5 | 1.442 | 83.85 | 77.12 | 96.15 | 96.15 | mg/kg | <PQL | 8. | 20 | 86. | 79. | 75 - 125 |
| Copper | HP-785-2 | 1.990 | 2.880 | 87.74 | 81.59 | 96.15 | 96.15 | mg/kg | 37. | 7. | 20 | 89. | 83. | 75 - 125 |
| Lead | HP-785-2 | 7.659 | 9.894 | 101.1 | 92.98 | 96.15 | 96.15 | mg/kg | <PQL | 8. | 20 | 97. | 89. | 75 - 125 |
| Mercury | 00785-2 | 0.6583 | 0.4338 | 1.117 | 0.8962 | 0.8333 | 0.7576 | mg/kg | 41. | 22. | 20 | 55. | 31. | 85 - 115 |
| Molybdenum | HP-785-2 | < 2.5 | < 2.5 | 88.12 | 81.15 | 96.15 | 96.15 | mg/kg | <PQL | 8. | 20 | 91. | 84. | 75 - 125 |
| Nickel | HP-785-2 | 2.817 | 3.726 | 78.51 | 71.83 | 96.15 | 96.15 | mg/kg | <PQL | 9. | 20 | 79. | 72. | 75 - 125 |
| Selenium | HP-785-2-X5 | < 0.5 | < 0.5 | 5.171 | 4.625 | 4.808 | 4.808 | mg/kg | <PQL | 11. | 20 | 105. | 93. | 75 - 125 |
| Silver | HP-785-2 | < 1. | < 1. | 3.774 | 7.880 | 9.615 | 9.615 | mg/kg | <PQL | 70. | 20 | 43. | 86. | 75 - 125 |
| Thallium | HP-785-2 | < 5. | < 5. | 89.62 | 81.44 | 96.15 | 96.15 | mg/kg | <PQL | 10. | 20 | 94. | 85. | 75 - 125 |
| Vanadium | HP-785-2 | 5.490 | 7.221 | 88.17 | 80.34 | 96.15 | 96.15 | mg/kg | 27. | 9. | 20 | 86. | 78. | 75 - 125 |
| Zinc | HP-785-2 | 13.23 | 16.54 | 106.4 | 96.30 | 96.15 | 96.15 | mg/kg | 22. | 10. | 20 | 97. | 86. | 75 - 125 |

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**BC Laboratories, Inc**

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

The sample RPDs for barium, chromium, copper, mercury, vanadium, and zinc the spike RPDs for mercury and silver, and the matrix spike recoveries for barium, cadmium, mercury, nickel, and silver are outside QC limits. The sample report is flagged accordingly.

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
STANDARD TTLC CONSTITUENTS

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TTLC

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Antimony | HP-LCSW1-1 | 2.1670 | 2. | mg/L | 108. | 80 - 120 |
| Arsenic | HP-LCSW-1- | 0.11605 | 0.1000 | mg/L | 116. | 80 - 120 |
| Barium | HP-LCSW1-1 | 2.0950 | 2.00 | mg/L | 105. | 80 - 120 |
| Beryllium | HP-LCSW1-1 | 0.19790 | 0.2000 | mg/L | 99. | 80 - 120 |
| Cadmium | HP-LCSW1-1 | 0.18390 | 0.2000 | mg/L | 92. | 80 - 120 |
| Chromium | HP-LCSW1-1 | 2.1690 | 2. | mg/L | 108. | 80 - 120 |
| Cobalt | HP-LCSW1-1 | 2.0080 | 2. | mg/L | 100. | 80 - 120 |
| Copper | HP-LCSW1-1 | 2.0040 | 2. | mg/L | 100. | 80 - 120 |
| Lead | HP-LCSW1-1 | 2.2220 | 2. | mg/L | 111. | 80 - 120 |
| Mercury | LCSW1-01-2 | 0.0049338 | 0.005 | mg/L | 99. | 85 - 115 |
| Molybdenum | HP-LCSW1-1 | 2.2710 | 2. | mg/L | 114. | 80 - 120 |
| Nickel | HP-LCSW1-1 | 1.8550 | 2. | mg/L | 93. | 80 - 120 |
| Selenium | HP-LCSW-1- | 0.11455 | 0.1000 | mg/L | 115. | 80 - 120 |
| Silver | HP-LCSW1-1 | 0.20950 | 0.2000 | mg/L | 105. | 80 - 120 |
| Thallium | HP-LCSW1-1 | 2.0900 | 2. | mg/L | 105. | 80 - 120 |
| Vanadium | HP-LCSW1-1 | 1.9800 | 2. | mg/L | 99. | 80 - 120 |
| Zinc | HP-LCSW1-1 | 2.1400 | 2. | mg/L | 107. | 80 - 120 |

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TPH

Samples Affected: 00-00785-1

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | < 1.0 | mg/L |

Quality Control Officer

Anthony Bonanno

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4100 Atlas Court * Bakersfield, CA 93308 * (661) 327-4911 * FAX (661) 327-1918 * www.bclabs.com

**BC Laboratories, Inc**

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TPH

Samples Affected: 00-00785-1

| Constituents | QC Sample ID | Sample Result | Sample Duplicate | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Sample R.P.D. | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | 781-1 | < 1.0 | < 1.0 | | | | | mg/L | <PQL | | 20 | | | |
| Total Recoverable Petroleum Hydrocarbons | OFW | < 1.0 | | 4.66 | 4.76 | 5.00 | 5.00 | mg/L | | 2. | 20 | 93. | 95. | 80 - 120 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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4100 Atlas Court * Bakersfield, CA 93308 * (661) 327-4911 * FAX (661) 327-1918 * www.bclabs.com

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*TPH

Samples Affected: 00-00785-1

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | LCSW | 4.81 | 5.00 | mg/L | 96. | 90 - 110 |

Quality Control Officer

Anthony Bonanno

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4100 Atlas Court * Bakersfield, CA 93308 * (661) 327-4911 * FAX (661) 327-1918 * www.bclabs.com

BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TPH

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | <20. | mg/kg |

Quality Control Officer

Anthony Bonanno

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**BC Laboratories, Inc**

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TPH

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | Sample Duplicate | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Sample R.P.D. | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | 843-2 | < 20. | < 20. | 87.50 | 87.50 | 100.00 | 100.00 | mg/kg | <PQL | 0. | 20 | 88. | 88. | 80 - 120 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
METHOD 418.1

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*TPH

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Total Recoverable Petroleum Hydrocarbons | LCSS | 86.54 | 100.00 | mg/kg | 87. | 80 - 120 |

Quality Control Officer

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8082

Samples Affected: 00-00785-1

| Constituents | Method Blank Readings | Units |
|---|---|---|
| PCB-1016 | < 0.2 | µg/L |
| PCB-1221 | < 0.2 | µg/L |
| PCB-1232 | < 0.2 | µg/L |
| PCB-1242 | < 0.2 | µg/L |
| PCB-1248 | < 0.2 | µg/L |
| PCB-1254 | < 0.2 | µg/L |
| PCB-1260 | < 0.2 | µg/L |
| Total PCB's (Summation) | < 0.2 | µg/L |
| Decachlorobiphenyl | 96. | % |

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B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8082

Samples Affected: 00-00785-1

| Constituents | QC Sample ID | Sample Result | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1260 | OFW 1/21 | < 0.2 | 2.607 | 2.385 | 2.500 | 2.500 | µg/L | 9. | 18 | 104. | 95. | 57 - 124 |
| Decachlorobiphenyl | MS/MSD | | | | | | | | | 104. | 99. | 60 - 140 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8082

Samples Affected: 00-00785-1

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| PCB-1260 | LCSW | 2.485 | 2.500 | µg/L | 99. | 57 - 124 |
| Decachlorobiphenyl | LCSW | | | | 108. | 60 - 140 |

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8082

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | Method Blank Readings | Units |
|---|---|---|
| PCB-1016 | < 0.01 | mg/kg |
| PCB-1221 | < 0.01 | mg/kg |
| PCB-1232 | < 0.01 | mg/kg |
| PCB-1242 | < 0.01 | mg/kg |
| PCB-1248 | < 0.01 | mg/kg |
| PCB-1254 | < 0.01 | mg/kg |
| PCB-1260 | < 0.01 | mg/kg |
| Total PCB's (Summation) | < 0.01 | mg/kg |
| Decachlorobiphenyl | 108. | % |

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Method 8082

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Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8082

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1260 | BS 1/24 | < 0.01 | 0.1005 | 0.0917 | 0.0836 | 0.0836 | mg/kg | 9. | 30 | 120. | 110. | 59 - 130 |
| Decachlorobiphenyl | MS/MSD | | | | | | | | | 113. | 100. | 60 - 140 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

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B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8082

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8082

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| PCB-1260 | LCSS | 0.0885 | 0.0836 | mg/kg | 106. | 59 - 130 |
| Decachlorobiphenyl | LCSS | | | | 94. | 60 - 140 |

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Instrumental & Blank Parameters)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Benzene | < 0.5 | µg/L |
| Bromobenzene | < 0.5 | µg/L |
| Bromochloromethane | < 0.5 | µg/L |
| Bromodichloromethane | < 0.5 | µg/L |
| Bromoform | < 0.5 | µg/L |
| Bromomethane | < 0.5 | µg/L |
| n-Butylbenzene | < 0.5 | µg/L |
| sec-Butylbenzene | < 0.5 | µg/L |
| tert-Butylbenzene | < 0.5 | µg/L |
| Carbon tetrachloride | < 0.5 | µg/L |
| Chlorobenzene | < 0.5 | µg/L |
| Chloroethane | < 0.5 | µg/L |
| Chloroform | < 0.5 | µg/L |
| Chloromethane | < 0.5 | µg/L |
| 2-Chlorotoluene | < 0.5 | µg/L |
| 4-Chlorotoluene | < 0.5 | µg/L |
| Dibromochloromethane | < 0.5 | µg/L |
| 1,2-Dibromo-3-Chloropropane | < 1. | µg/L |
| 1,2-Dibromoethane | < 0.5 | µg/L |
| Dibromomethane | < 0.5 | µg/L |
| 1,2-Dichlorobenzene | < 0.5 | µg/L |
| 1,3-Dichlorobenzene | < 0.5 | µg/L |
| 1,4-Dichlorobenzene | < 0.5 | µg/L |
| Dichlorodifluoromethane | < 0.5 | µg/L |
| 1,1-Dichloroethane | < 0.5 | µg/L |
| 1,2-Dichloroethane | < 0.5 | µg/L |
| 1,1-Dichloroethene | < 0.5 | µg/L |
| cis-1,2-Dichloroethene | < 0.5 | µg/L |
| trans-1,2-Dichloroethene | < 0.5 | µg/L |
| 1,2-Dichloropropane | < 0.5 | µg/L |

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MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

| Constituents | Method Blank Readings | Units |
|---|---|---|
| 1,3-Dichloropropane | < 0.5 | µg/L |
| 2,2-Dichloropropane | < 0.5 | µg/L |
| 1,1-Dichloropropene | < 0.5 | µg/L |
| cis-1,3-Dichloropropene | < 0.5 | µg/L |
| trans-1,3-Dichloropropene | < 0.5 | µg/L |
| Ethyl Benzene | < 0.5 | µg/L |
| Hexachlorobutadiene | < 0.5 | µg/L |
| Isopropylbenzene | < 0.5 | µg/L |
| p-Isopropyltoluene | < 0.5 | µg/L |
| Methylene Chloride | 0.18 | µg/L |
| Naphthalene | < 0.5 | µg/L |
| n-Propylbenzene | < 0.5 | µg/L |
| Styrene | < 0.5 | µg/L |
| 1,1,1,2-Tetrachloroethane | < 0.5 | µg/L |
| 1,1,2,2-Tetrachloroethane | < 0.5 | µg/L |
| Tetrachloroethene | < 0.5 | µg/L |
| Toluene | < 0.5 | µg/L |
| 1,2,3-Trichlorobenzene | < 0.5 | µg/L |
| 1,2,4-Trichlorobenzene | < 0.5 | µg/L |
| 1,1,1-Trichloroethane | < 0.5 | µg/L |
| 1,1,2-Trichloroethane | < 0.5 | µg/L |
| Trichloroethene | < 0.5 | µg/L |
| Trichlorofluoromethane | < 0.5 | µg/L |
| 1,2,3-Trichloropropane | < 0.5 | µg/L |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | < 0.5 | µg/L |
| 1,2,4-Trimethylbenzene | < 0.5 | µg/L |
| 1,3,5-Trimethylbenzene | < 0.5 | µg/L |
| Vinyl Chloride | < 0.5 | µg/L |
| Total Xylenes | < 1. | µg/L |

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Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

| Constituents | Method Blank Readings | Units |
|---|---|---|
| m & p-Xylene | < 0.5 | µg/L |
| o-Xylene | < 0.5 | µg/L |
| Methyl-t-butylether | < 0.5 | µg/L |
| 1,2-Dichloroethane-d4 | 94. | % |
| Toluene-d8 | 101. | % |
| 4-Bromofluorobenzene | 96. | % |

The trace detection for Methylene chloride is an estimated value between the MDL and PQL.

Quality Control Officer

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MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

| Constituents | QC Sample ID | Sample Result | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 772-2 | < 0.5 | 13.15 | 14.19 | 16.00 | 16.00 | µg/L | 8. | 20 | 82. | 89. | 80 - 120 |
| Bromodichloromethane | 772-2 | < 0.5 | 14.56 | 15.96 | 16.00 | 16.00 | µg/L | 9. | 20 | 91. | 100. | 80 - 120 |
| Chlorobenzene | 772-2 | < 0.5 | 14.02 | 15.74 | 16.00 | 16.00 | µg/L | 12. | 20 | 88. | 98. | 80 - 120 |
| Chloroethane | 772-2 | < 0.5 | 14.03 | 14.92 | 16.00 | 16.00 | µg/L | 6. | 20 | 88. | 93. | 80 - 120 |
| 1,4-Dichlorobenzene | 772-2 | < 0.5 | 14.28 | 15.88 | 16.00 | 16.00 | µg/L | 11. | 20 | 89. | 99. | 80 - 120 |
| 1,1-Dichloroethane | 772-2 | < 0.5 | 13.76 | 15.24 | 16.00 | 16.00 | µg/L | 10. | 20 | 86. | 95. | 80 - 120 |
| 1,1-Dichloroethene | 772-2 | < 0.5 | 14.34 | 15.49 | 16.00 | 16.00 | µg/L | 8. | 20 | 90. | 97. | 80 - 120 |
| Toluene | 772-2 | < 0.5 | 12.91 | 15.15 | 16.00 | 16.00 | µg/L | 16. | 20 | 81. | 95. | 80 - 120 |
| Trichloroethene | 772-2 | < 0.5 | 13.74 | 15.43 | 16.00 | 16.00 | µg/L | 12. | 20 | 86. | 96. | 80 - 120 |
| 1,2-Dichloroethane-d4 | MS/MSD | | | | | | | | | 99. | 96. | 76 - 114 |
| Toluene-d8 | MS/MSD | | | | | | | | | 98. | 100. | 88 - 110 |
| 4-Bromofluorobenzene | MS/MSD | | | | | | | | | 98. | 99. | 86 - 115 |

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QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8260

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Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: Water
QC Batch ID: 200000785-1*8260

Samples Affected: 00-00785-1, 00-00785-1TB

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Benzene | CCV 30 | 14.04 | 16.00 | µg/L | 88. | 80 - 120 |
| Bromodichloromethane | CCV 30 | 16.95 | 16.00 | µg/L | 106. | 80 - 120 |
| Chlorobenzene | CCV 30 | 15.72 | 16.00 | µg/L | 98. | 80 - 120 |
| Chloroethane | CCV 30 | 14.92 | 16.00 | µg/L | 93. | 80 - 120 |
| 1,4-Dichlorobenzene | CCV 30 | 15.27 | 16.00 | µg/L | 95. | 80 - 120 |
| 1,1-Dichloroethane | CCV 30 | 14.71 | 16.00 | µg/L | 92. | 80 - 120 |
| 1,1-Dichloroethene | CCV 30 | 14.98 | 16.00 | µg/L | 94. | 80 - 120 |
| Toluene | CCV 30 | 15.43 | 16.00 | µg/L | 96. | 80 - 120 |
| Trichloroethene | CCV 30 | 16.15 | 16.00 | µg/L | 101. | 80 - 120 |
| 1,2-Dichloroethane-d4 | CCV 30 | | | | 100. | 76 - 114 |
| Toluene-d8 | CCV 30 | | | | 102. | 88 - 110 |
| 4-Bromofluorobenzene | CCV 30 | | | | 98. | 86 - 115 |

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(Instrumental & Blank Parameters)
Method 8260

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Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | Method Blank Readings | Units |
|---|---|---|
| Benzene | < 0.005 | mg/kg |
| Bromobenzene | < 0.005 | mg/kg |
| Bromochloromethane | < 0.005 | mg/kg |
| Bromodichloromethane | < 0.005 | mg/kg |
| Bromoform | < 0.005 | mg/kg |
| Bromomethane | < 0.005 | mg/kg |
| n-Butylbenzene | < 0.005 | mg/kg |
| sec-Butylbenzene | < 0.005 | mg/kg |
| tert-Butylbenzene | < 0.005 | mg/kg |
| Carbon tetrachloride | < 0.005 | mg/kg |
| Chlorobenzene | < 0.005 | mg/kg |
| Chloroethane | < 0.005 | mg/kg |
| Chloroform | < 0.005 | mg/kg |
| Chloromethane | < 0.005 | mg/kg |
| 2-Chlorotoluene | < 0.005 | mg/kg |
| 4-Chlorotoluene | < 0.005 | mg/kg |
| Dibromochloromethane | < 0.005 | mg/kg |
| 1,2-Dibromo-3-Chloropropane | < 0.005 | mg/kg |
| 1,2-Dibromoethane | < 0.005 | mg/kg |
| Dibromomethane | < 0.005 | mg/kg |
| 1,2-Dichlorobenzene | < 0.005 | mg/kg |
| 1,3-Dichlorobenzene | < 0.005 | mg/kg |
| 1,4-Dichlorobenzene | < 0.005 | mg/kg |
| Dichlorodifluoromethane | < 0.005 | mg/kg |
| 1,1-Dichloroethane | < 0.005 | mg/kg |
| 1,2-Dichloroethane | < 0.005 | mg/kg |
| 1,1-Dichloroethene | < 0.005 | mg/kg |
| cis-1,2-Dichloroethene | < 0.005 | mg/kg |
| trans-1,2-Dichloroethene | < 0.005 | mg/kg |
| 1,2-Dichloropropane | < 0.005 | mg/kg |

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MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | Method Blank Readings | Units |
|---|---|---|
| 1,3-Dichloropropane | < 0.005 | mg/kg |
| 2,2-Dichloropropane | < 0.005 | mg/kg |
| 1,1-Dichloropropene | < 0.005 | mg/kg |
| cis-1,3-Dichloropropene | < 0.005 | mg/kg |
| trans-1,3-Dichloropropene | < 0.005 | mg/kg |
| Ethyl Benzene | < 0.005 | mg/kg |
| Hexachlorobutadiene | < 0.005 | mg/kg |
| Isopropylbenzene | < 0.005 | mg/kg |
| p-Isopropyltoluene | < 0.005 | mg/kg |
| Methylene Chloride | < 0.01 | mg/kg |
| Naphthalene | < 0.005 | mg/kg |
| n-Propylbenzene | < 0.005 | mg/kg |
| Styrene | < 0.005 | mg/kg |
| 1,1,1,2-Tetrachloroethane | < 0.005 | mg/kg |
| 1,1,2,2-Tetrachloroethane | < 0.005 | mg/kg |
| Tetrachloroethene | < 0.005 | mg/kg |
| Toluene | < 0.005 | mg/kg |
| 1,2,3-Trichlorobenzene | < 0.005 | mg/kg |
| 1,2,4-Trichlorobenzene | < 0.005 | mg/kg |
| 1,1,1-Trichloroethane | < 0.005 | mg/kg |
| 1,1,2-Trichloroethane | < 0.005 | mg/kg |
| Trichloroethene | < 0.005 | mg/kg |
| Trichlorofluoromethane | < 0.005 | mg/kg |
| 1,2,3-Trichloropropane | < 0.005 | mg/kg |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | < 0.005 | mg/kg |
| 1,2,4-Trimethylbenzene | < 0.005 | mg/kg |
| 1,3,5-Trimethylbenzene | < 0.005 | mg/kg |
| Vinyl Chloride | < 0.005 | mg/kg |
| Total Xylenes | < 0.01 | mg/kg |

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Method 8260

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MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | Method Blank Readings | Units |
|---|---|---|
| m & p-Xylene | < 0.005 | mg/kg |
| o-Xylene | < 0.005 | mg/kg |
| Methyl-t-butylether | < 0.005 | mg/kg |
| 1,2-Dichloroethane-d4 | 114. | % |
| Toluene-d8 | 93. | % |
| 4-Bromofluorobenzene | 103. | % |

Quality Control Officer

Anthony Bonanno

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Court * Bakersfield, CA 93308 * (661) 327-4911 * FAX (661) 327-1918 * www.bclabs.com

**BC Laboratories, Inc**

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | MS Result | MSD Result | MS Spike Level | MSD Spike Level | Units | Spike R.P.D. | Precision Control Limits | MS % Rec | MSD % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 447-1 | < 5. | 81. | 79. | 80. | 80. | µg/kg | 2. | 20 | 101. | 99. | 80 - 120 |
| Bromodichloromethane | 447-1 | < 5. | 75. | 74. | 80. | 80. | µg/kg | 1. | 20 | 94. | 93. | 80 - 120 |
| Chlorobenzene | 447-1 | < 5. | 82. | 76. | 80. | 80. | µg/kg | 7. | 20 | 102. | 95. | 80 - 120 |
| Chloroethane | 447-1 | < 5. | 93. | 93. | 80. | 80. | µg/kg | 1. | 20 | 117. | 116. | 80 - 120 |
| 1,4-Dichlorobenzene | 447-1 | < 5. | 84. | 78. | 80. | 80. | µg/kg | 8. | 20 | 105. | 98. | 80 - 120 |
| 1,1-Dichloroethane | 447-1 | < 5. | 86. | 85. | 80. | 80. | µg/kg | 1. | 20 | 107. | 107. | 80 - 120 |
| 1,1-Dichloroethene | 447-1 | < 5. | 90. | 91. | 80. | 80. | µg/kg | 1. | 20 | 112. | 114. | 80 - 120 |
| Toluene | 447-1 | < 5. | 77. | 75. | 80. | 80. | µg/kg | 2. | 20 | 96. | 94. | 80 - 120 |
| Trichloroethene | 447-1 | < 5. | 82. | 81. | 80. | 80. | µg/kg | 1. | 20 | 102. | 102. | 80 - 120 |
| 1,2-Dichloroethane-d4 | MS/MSD | | | | | | | | | 96. | 97. | 76 - 114 |
| Toluene-d8 | MS/MSD | | | | | | | | | 96. | 97. | 88 - 110 |
| 4-Bromofluorobenzene | MS/MSD | | | | | | | | | 102. | 103. | 86 - 115 |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

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BC Laboratories, Inc

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
Method 8260

Harding Lawson and Associates
2171 Campus Dr., Suite 100
Irvine, CA 92612
MARK CLARDY

Date of Report: 02/28/2000
Sample Matrix: soil
QC Batch ID: 200000785-2*8260

Samples Affected: 00-00785-2, 00-00785-3

| Constituents | QC Sample ID | Sample Result | Spike Level | Units | % Rec | Accuracy Control Limits |
|---|---|---|---|---|---|---|
| Benzene | CCV 24 | 17. | 16. | µg/L | 108. | 80 - 120 |
| Bromodichloromethane | CCV 24 | 16. | 16. | µg/L | 100. | 80 - 120 |
| Chlorobenzene | CCV 24 | 15. | 16. | µg/L | 97. | 80 - 120 |
| Chloroethane | CCV 24 | 20. | 16. | µg/L | 124. | 80 - 120 |
| 1,4-Dichlorobenzene | CCV 24 | 17. | 16. | µg/L | 104. | 80 - 120 |
| 1,1-Dichloroethane | CCV 24 | 18. | 16. | µg/L | 115. | 80 - 120 |
| 1,1-Dichloroethene | CCV 24 | 19. | 16. | µg/L | 120. | 80 - 120 |
| Toluene | CCV 24 | 16. | 16. | µg/L | 97. | 80 - 120 |
| Trichloroethene | CCV 24 | 17. | 16. | µg/L | 106. | 80 - 120 |
| 1,2-Dichloroethane-d4 | CCV 24 | | | | 100. | 76 - 114 |
| Toluene-d8 | CCV 24 | | | | 95. | 88 - 110 |
| 4-Bromofluorobenzene | CCV 24 | | | | 109. | 86 - 115 |

The LCS recovery for Chloroethane is outside QC limits.

Quality Control Officer

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# AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

AMERICAN ANALYTICS

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: JAN 19, 2000

PAGE 1 OF 1

| | | | |
|---|---|---|---|
| AA Client: HARDING LAWSON ASSOCIATES | Phone: (949) 260-1800 | Sampler's Name: KEY R. HOUNG | |
| Project Manager: MARK CLARDY | P.O. No. | Sampler's Signature: [signature] | |
| Project Name: BRC | Project No. 49311.00.1 | Project Manager's Signature | |
| Job Name and Address: BOEING 00-00785 HARBORGATE, TORRANCE, CA. | | | |

ANALYSIS REQUIRED

Detection Limits

Test Name

| A.A. I.D.# | Client's I.D. | Date | Time | Sample Type | Number of Containers | 8260 | 418.1 | 8082 | T.22 CAM | | | | | | Test Requirements |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | WWP-1 | 1.19.00 | 1100 | H2O | 5 | X | X | X | X | | | | | | |
| -2 | SP-1 | ↓ | ↓ | SOIL | 1 | X | X | X | X | | | | | | |
| -3 | SP-2 | ↓ | ↓ | ↓ | 1 | X | X | X | X | | | | | | |

DISTRIBUTION MA SH BG ZACH SB

NUMBERING CHECKED BY [signature]

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

| | | | |
|---|---|---|---|
| Samples Intact | Yes ____ | No ____ | |
| Samples Properly Cooled | Yes ____ | No ____ | |
| Samples Accepted | Yes ____ | No ____ | |
| If Not Why: | | | |
| AA Project No. | | | |

| Relinquished by: | Date | Time | Received by: |
|---|---|---|---|
| [signature] | 1-19-00 | 12:53 | [signature] |
| [signature] | 1.19.2000 | 1710 | [signature] |
| | | | |
| | | | |

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

103

BOE-C6-0046111

APPENDIX C

# APPENDIX C
# WELL ABANDONMENT PERMIT AND NON-HAZARDOUS WASTE DATA FORMS

**APPLICATION FOR WELL PERMIT**
ENVIRONMENTAL HEALTH 2525 Corporate Place Monterey Park, Ca 91754
COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH SERVICES

DATE JANUARY 4, 1999

**DESCRIPTION**

TYPE OF PERMIT (CHECK)
- ☐ NEW WELL CONSTRUCTION
- ☐ RECONSTRUCTION OR RENOVATION
- ☒ DESTRUCTION

TYPE OF WELL
- ☐ PRIVATE DOMESTIC
- ☐ PUBLIC DOMESTIC
- ☐ IRRIGATION
- ☒ OBSERVATION/MONITORING
- ☐ CATHODIC
- ☐ INDUSTRIAL
- ☐ GRAVEL PACK
- ☐ TEST

TYPE OF CASING

METHOD OF SEALING OF CASING

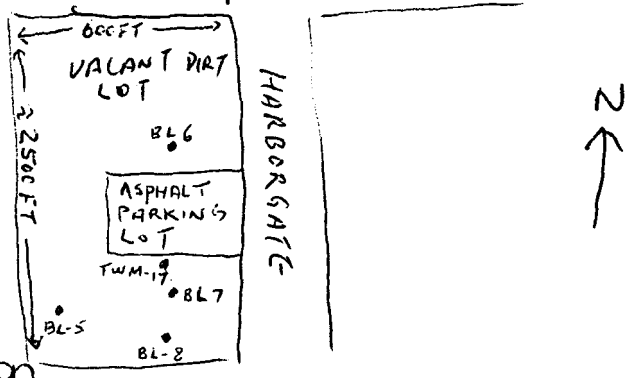
METHOD OF DESTRUCTION
WELLS to BE OVERDRILLED/REMOVED by 8" HSA, BACKFILLED W/cement-bentonite GROUT FROM T.D to 10bgs, then CONCRETE to SURFACE.

**LOCATION**

ADDRESS (NUMBER, STREET, AND NEAREST INTERSECTION) 19503 S. NORMANDIE / + 190th STREET 90501 CITY TORRANCE T.G. 763 J-3

DIAGRAM (SHOW PROPERTY LINES, STREET, ADDRESS, WELL SITE, SEWERS, AND PRIVATE SEWAGE DISPOSAL SYSTEMS ALONG WITH LABELS AND DIMENSIONS)

See ATTACHED




Five Monitoring Wells Destruction

**APPLICANT**

NAME OF WELL DRILLER (PRINT) THF DRILLING
TRADE NAME 9431 RESEDA AVENUE
BUSINESS ADDRESS FONTANA, CA. 92335 CITY

NAME OF WELL OWNER (PRINT) BOEING REALTY CORPORATION
MAILING ADDRESS 4060 LAKEVIEW BLVD. 6TH FLOOR
CITY LONG BEACH, CA. 90808

I hereby agree to comply in every respect with all regulations of the County Preventive/Public Health Services and with all ordinances and laws of the County of Los Angeles and of the State of California pertaining to well construction, reconstruction and destruction. Upon completion of well and within ten days thereafter, I will furnish the County Preventive/Public Health Services with a complete log of the well, giving date drilled, depth of well, all perforations in casing, and any other data deemed necessary by such County Preventive/Public Health Services.

?

PRINT NAME TOO

Applicant's Signature

start Tuesday 1/11/00

**DISPOSITION OF APPLICATION: (For Sanitarians Use Only)**

- ☒ APPROVED
- ☐ DENIED
- ☐ APPROVED WITH CONDITIONS

If denied or approved with conditions, report reason or condition: here:

Scheduled WORK ON THURSDAY JAN. 13, 2000,

| DATE | SANITARIAN |
|---|---|
| DATE JAN 11, 00 | SECTION CHIEF Michael Lin |

ENTERED

*When signed by Section Chief, this application is a permit.*

76A666
H-13 (Rev. 3/91) 2/05

APPLICANT COPY

TOTAL P.02

22733

# NON-HAZARDOUS WASTE DATA FORM

**TO BE COMPLETED BY GENERATOR**

NAME: BOEING REALTY CORPORATION

ADDRESS: 4060 LAKEWOOD BLVD 6TH FLOOR

EPA I.D. NO.:

CITY, STATE, ZIP: LONG BEACH, CA 90808

PHONE NO.: 562 627 3200

CONTAINERS: No. 1 VOLUME 10CY WEIGHT

TYPE: ☐ TANK TRUCK ☐ DUMP TRUCK ☐ DRUMS ☐ CARTONS ☒ OTHER ROLL OFF BOX # [illegible]

WASTE DESCRIPTION: SOLID

GENERATING PROCESS:

| | COMPONENTS OF WASTE | PPM | % | | COMPONENTS OF WASTE | PPM | % |
|---|---|---|---|---|---|---|---|
| 1 | [illegible] | ≤ 20 | % | 5 | JOBSITE: BOEING C-6 FACILITY | | |
| 2 | SAND | ≤ 7 | % | 6 | 17303 S NORMANDIE | | |
| 3 | SOIL | ≤ 9 | % | 7 | LOS ANGELES, CA 90501 | | |
| 4 | [illegible] | ≤ 2 | % | 8 | | | |

PROPERTIES: pH 7 ☒ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTUCTIONS: [illegible]

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

[illegible] 21600

TYPED OR PRINTED FULL NAME & SIGNATURE DATE

**TRANSPORTER**

NAME: CONSOLIDATED WASTE INDUSTRIES

EPA I.D. NO.: CAD[illegible]

ADDRESS: [illegible] AVE

SERVICE ORDER NO.: [illegible]

CITY, STATE, ZIP: MONTEBELLO CA 91763

PICK UP DATE: 21600

PHONE NO.: 213 625-6645

TRUCK, UNIT, I.D. NO.: [illegible]

[illegible] 21600

TYPED OR PRINTED FULL NAME & SIGNATURE DATE

**TSD FACILITY**

NAME: [illegible]

EPA I.D. NO.: CAD[illegible]

DISPOSAL METHOD

ADDRESS: [illegible] W. MONTE AVE

☐ LANDFILL ☒ OTHER [illegible]

CITY, STATE, ZIP: [illegible] CA 92376

[illegible]

PHONE NO.: [illegible] 924 1630

[illegible]

TYPED OR PRINTED FULL NAME & SIGNATURE DATE

| GEN | OLD/NEW | L A | TONS |
|---|---|---|---|
| TRANS | | S B | |
| C/O | | RT/CD | HWDF NONE |

DISCREPANCY

NO. 021500

# NON-HAZARDOUS WASTE DATA FORM

**TO BE COMPLETED BY GENERATOR**

NAME: Boeing Realty Corp. SITE:

MAILING ADDRESS: 4060 Lakewood Blvd. 6th Floor ADDRESS: 19503 S. Normandie

CITY, STATE, ZIP: Long Beach, CA 90808 CITY: Los Angeles, CA 90501

PHONE: ( )

CONTAINERS: NO. 11 VOLUME:

TYPE: ☐ TANK TRUCK ☐ DUMP TRUCK ☒ DRUMS ☐ ROLL OFF ☐ OTHER

WASTE DESCRIPTION: Water GENERATING PROCESS: Well Monitoring

| COMPONENTS OF WASTE | PPM | % | COMPONENTS OF WASTE | PPM | % |
|---|---|---|---|---|---|
| 1. Water | | >99 | 5. | | |
| 2. TPH/BTXE | | <.1 | 6. | | |
| 3. | | | 7. | | |
| 4. | | | 8. | | |

PROPERTIES: pH N ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS: Wear appropriate protective clothing TPH-335

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS

PRINTED NAME: MIKE PALMER

SIGNATURE: [signature] DATE: 2-16-00

**TRANSPORTER**

NAME: Cameron Environmental, Inc.

ADDRESS: 20741 Manhattan Place

CITY, STATE, ZIP: Torrance, CA 90501

PHONE: ( ) 310-212-0610

PRINTED NAME: Enrique L. Serrano

TRUCK, UNIT, I.D. NO.

SIGNATURE: [signature] DATE:

**TSD FACILITY**

NAME: Crosby & Overton PROFILE NO. 20841

ADDRESS: 1630 W. 17th Street ☐ LANDFILL ☐ OTHER

CITY, STATE, ZIP: Long Beach, CA 90813

PHONE: ( ) 562-432-5445

TONS/GALS REC'D

SIGNATURE DATE