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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.

RECEIVED
APR 27 2000
BOEING REALTY CORPORATION

Sincerely,

Ronald V. Giraudi, REA II 20054
Project Director

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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2171 Campus Drive, Suite 100
Irvine, CA 92612
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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:

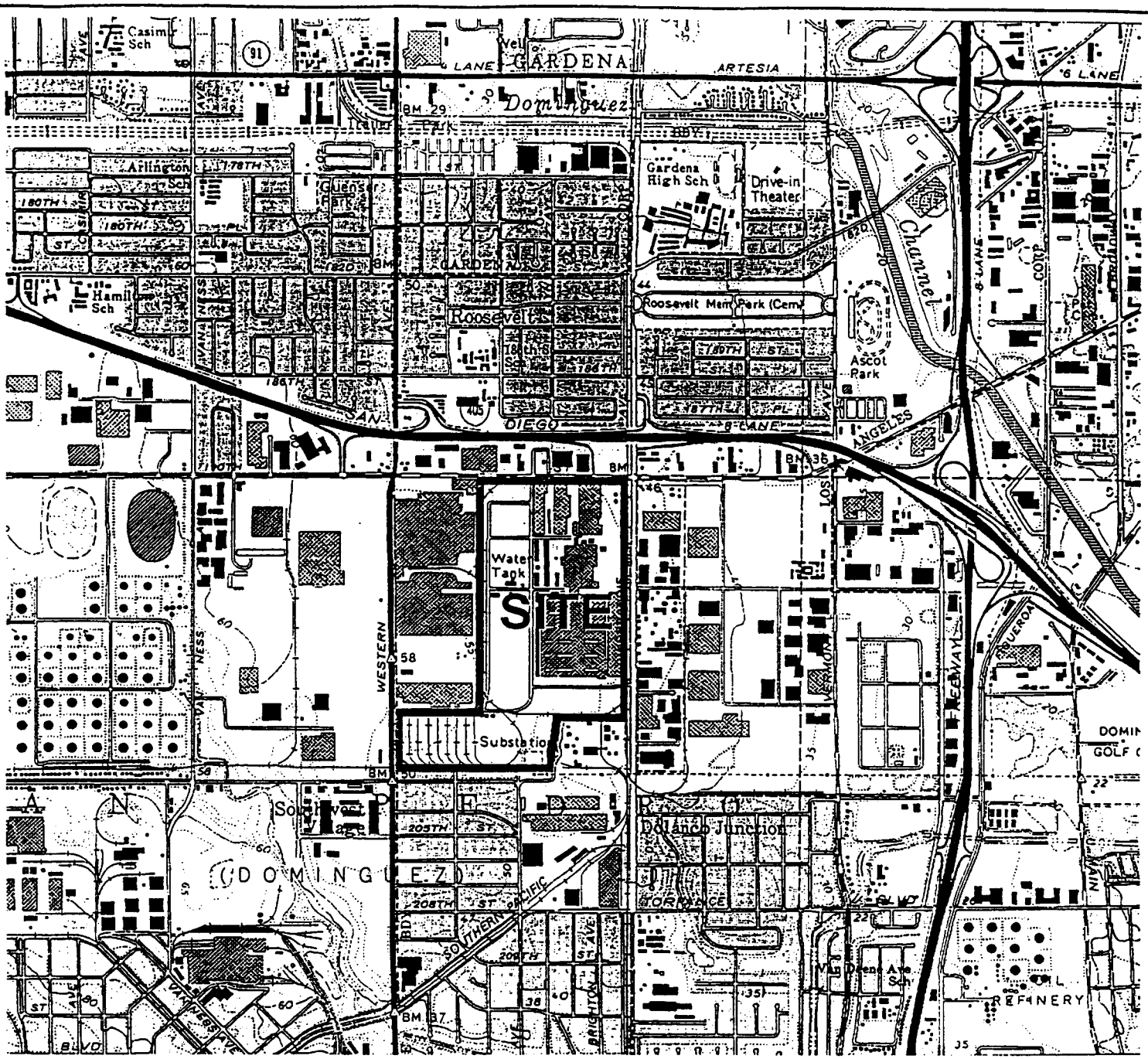
	Plate 1	Vicinity Map
	Plate 2	Site Plan
	Appendix A	Field Logs and Photographs of Wells BL-1 through BL-4
	Appendix B	Laboratory Results and Chain-of-Custody Forms – Groundwater and Waste Disposal Profile Samples
	Appendix C	Well Abandonment Permit and Non-Hazardous Waste Data Forms

N:\Boeing\letter\BL_rpt.doc

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

PLATES

PLATES



SCALE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Harding Lawson Associates
Engineering and
Environmental Services

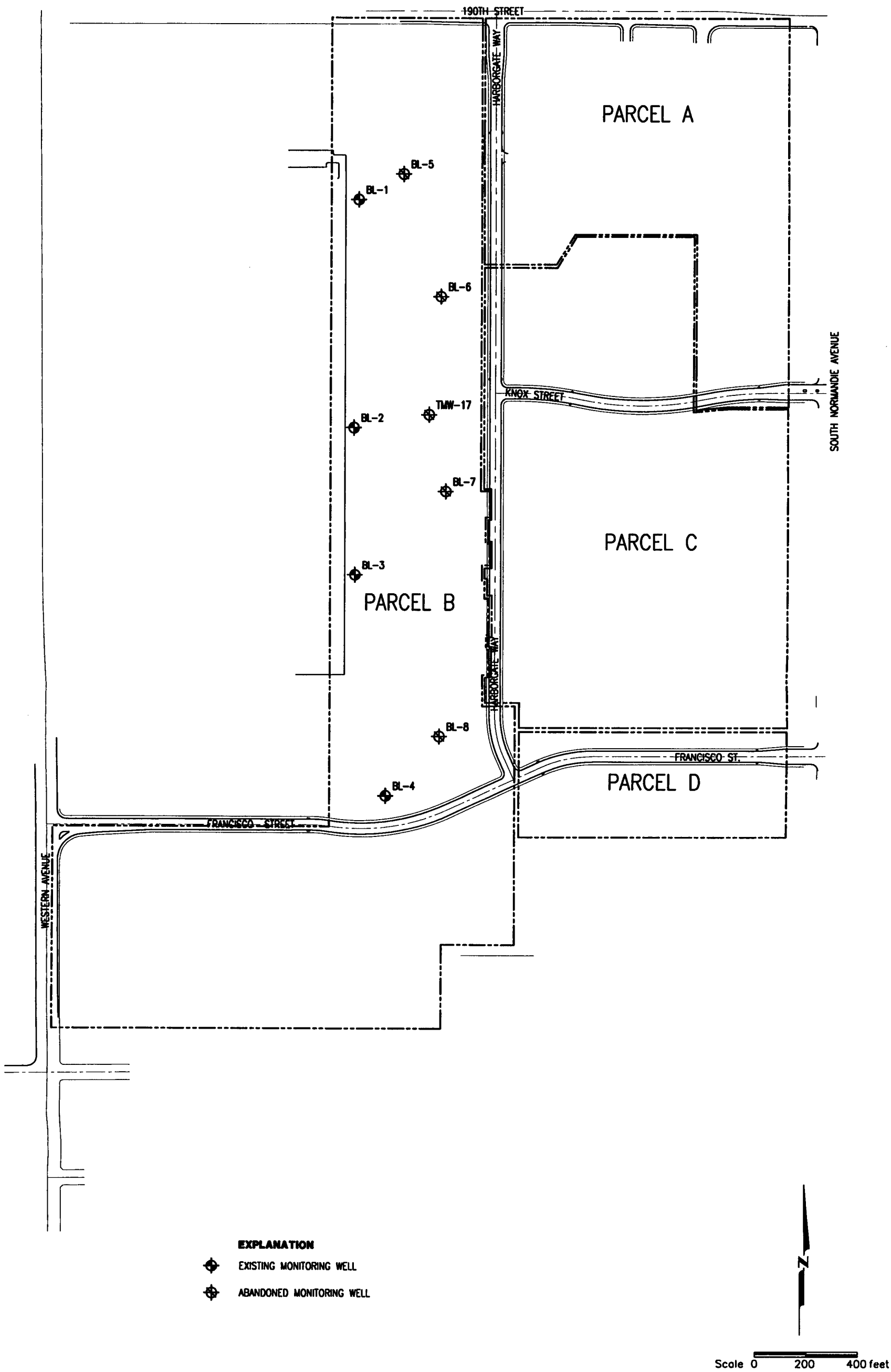
HLA

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	



Harding Lawson Associates
Engineering and
Environmental Services

HLA

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-C6-0142689

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

BOE-C6-0142691

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
- CLALIBRATED P.I.D. AND HORIBA U-10 (PARAMETER METER)
- REVIEWED H.A.S.P. AND SITE INFO. W/ BRETT.
0730 - PREPAIRING 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.
- WILL 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-MP
Attachments: - HOSE WAS REMOVED FROM PUMP WHEN PULLED FROM WELL.
Initial [signature]

FF1

Harding Lawson Associates

BOE-C6-0142692

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 PALMER/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

0930 - 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 IES CHANG ON SITE)
- PERFORMING DECON.

1145 - MOBILIZING ~~AT~~ BL-5
- INSTALLING NEW 1/2" HOSE INTO WELL WITH PUMP.
- PURGED 4 WELL VOLS. PARAMETERS STABILE.
- 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: [signature]

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

Harding Lawson Associates

FF1

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		69.60	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	7.15	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 MI 1/500 MI	8260 CHROMIUM 6 (FILTERED)	HCL N/A	BC LABS	TIME: 1215
BL-5-NF	1/1 LTR POLY	CHROMIUM 6 (NONFILTERED)	N/A	" "	"

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

RL004 OFFICE COPY - WHITE FIELD COPY - CANARY 0746

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: 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): 80.33
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					TIME = 1335
BL-6-NE					

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

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-7
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:

$(80.20 - 69.60) \times 2^2 \times 4 \times 0.0408 = 6.9$ 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

~~30~~ 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	8260	HCL	BC LABS	TIME = 1115
	1/500 ml	CHROMIUM 6 (FILTERED)	N/A		
BL-7-NF	1/1 LTR. POLY	CHROMIUM 6 (NON FILTERED)	N/A	" "	"

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

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 TD (feet) - 71.68 WL (feet)) x 2 D (inches)^2 x 4 # Vols x 0.0408 = 7.1 gallons 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~~ GALLONS Since 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	" " "	" "

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

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: RAA

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

0700 RAA ONSITE
TRC (Ron) @ BACK of LOT
Consolidated to DROP OFF BIN (0715) WAIT FOR ANDERSON (IES) to FIND LOCATION for BIN
0730 DTSC (WILL) FROM SAC. 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. (≈ 1 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 (1½ 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 flow, MAKE AS DRY AS POSSIBLE. MIXER / PUMP CAN'T MAKE MUCH THICKER W/O CLOGGING - BURNING MOTOR.
got MIXTURE to (4 BAGS / 28 GAL)
8 BATCHES TOTAL (26 BAGS OF PORTLAND USED)
LEAVE 15' OPEN TO CEMENT LATER.

Attachments:
1600 DECON / CLEAN AREA. (1 DRUM)

Initial

Harding Lawson Associates

FF1

Boring C-6 Facility
Habergale, Torrance, CA.

Sheet 2 of 6

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: RMA

(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 + UP)
pull AUGER UP OUT OF H_2O (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 CONVERSATIONS
WILL USE 4 BAGS / 28-30 GAL - AS THICK AS WE CAN MAKE IT (THF). TREMMIE PIPE to 75' SO AS NOT to CLOG UP LIKE YESTERDAY
1000 GROUT IN (- 15' for CEMENT) 7 BATCHES - 28 bags
1/2 YARDS FROM AUGERS IN HOPPER
DUMP HOPPER to BIN (≈ 3 YRDS 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

FF1

Harding Lawson Associates

Boeing C-6 Facility
Harborgate, Torrance, CA.

Project: BRC - WELL ABANDONMENT BL-05
Subject: FIELD INVESTIGATION DAILY REPORT
Equipment Rental: _____ Company: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____

Job No.: 49311.00.1
Date: JAN-18-2000
To:
By: MM

(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 30 gal)
tremmie pipe as before (75' bgs)
1345 Sinclair drop off 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)
Subject: FIELD INVESTIGATION DAILY REPORT
Equipment Rental: _____ Company: _____
Equipment Hours: _____ F.E. Time from: _____ to: _____

Job No.: 49311.00.1
Date: JAN - 18 - 2000
To:
By: MM

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

1700 TAG BL-06 @ 78.5' 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 [VOLCLAY])
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 TREMIE PIPE to ≈ 70' bgs. (GROUT - bentonite-sand
motor on HAMMER about 8'. MIX first batch
PORTLAND (4 BAGS 120 GALLONS). BATCHES on till
flowing 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

FF1

BOE-C6-0142703

(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
Hawthorne, 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: RLA

(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 price 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 lunch
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 % volclay
30 % bentonite / sand (filter pack + formating)

* Michael Lui, DEHS, visited site @ 1200

Attachments:

Initial

Harding Lawson Associates

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 8 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. (see
consolidated waste)

1700 Tag top of Portland @ 13' bgs @ BL-05
mix ready-mix concrete 8 1/2 bags in to complete
to surface.

1730 Tag top of Portland @ 12' bgs @ B-06
mix ready-mix concrete 7 1/2 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
Job No.:
Subject: FIELD INVESTIGATION DAILY REPORT
Date:
Equipment Rental:
Company:
To:
Equipment Hours:
F.E. Time from:
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.D 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

Harding Lawson Associates

FF1

DIRECT READING INSTRUMENT LOG

Project Name: BRC
Site Address: HARBORGATE FIELD
Name: Rex Henry
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.

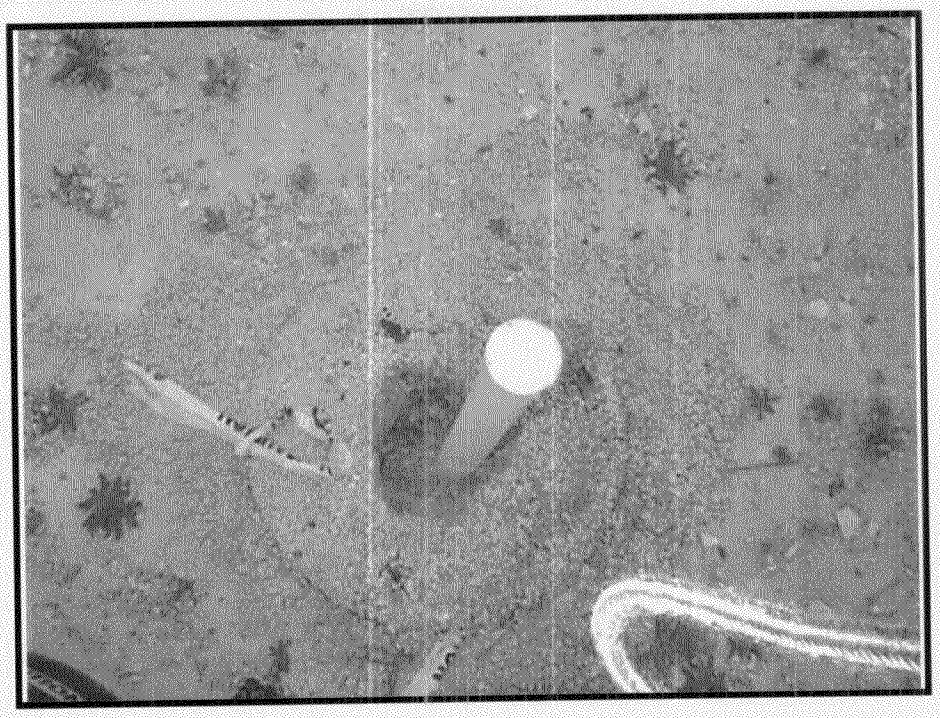
Attachments:

Initial

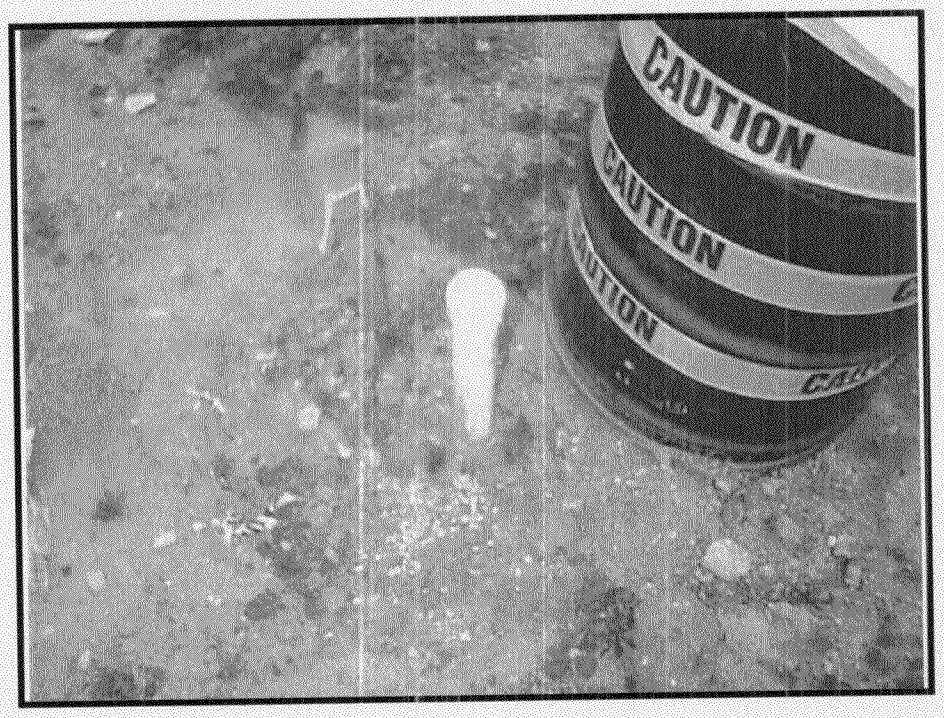
Harding Lawson Associates

FF1

BOE-C6-0142709



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

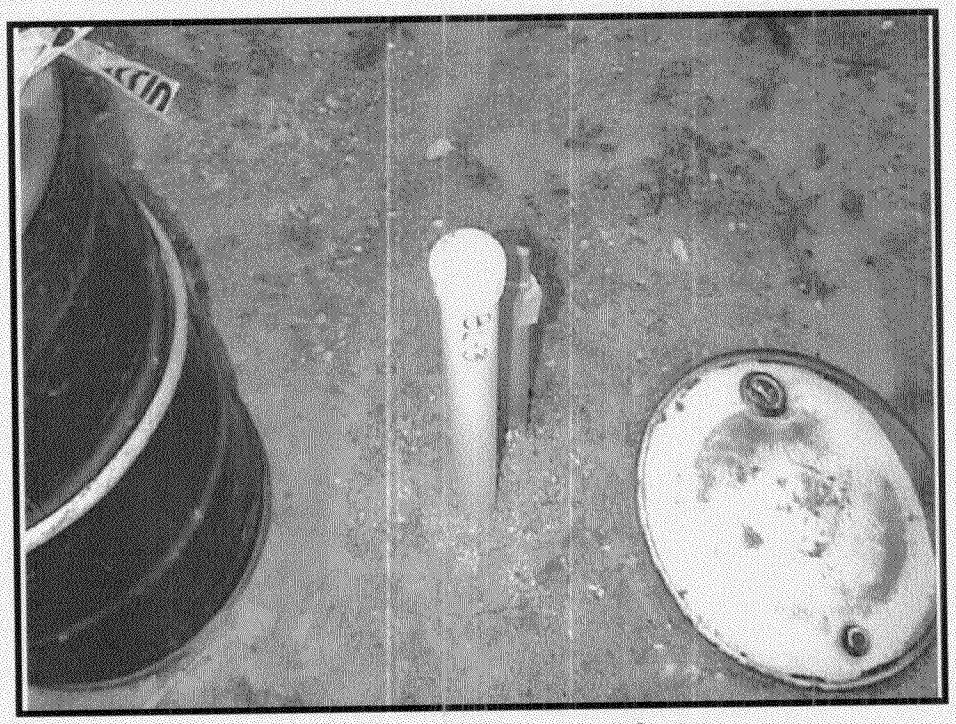


Well BL-2 with small hole in bentonite grout seal from previous metal stake. No settlement of grout.

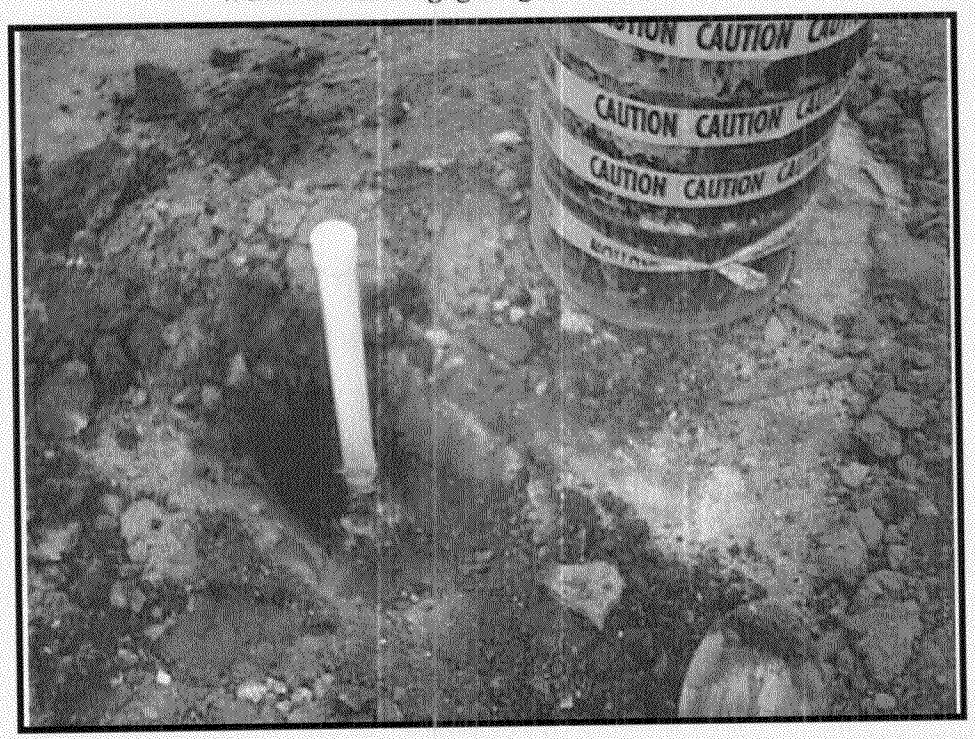
Harding Lawson Associates
Engineering and Environmental Services
2171 Campus Drive, Suite 100
Irvine, California 92612 - (949) 224-0050

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
Engineering 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

All results listed in this report are for the exclusive use of the submitting party, BC Laboratories, Inc. assumes no responsibility for report alteration, detachment or third party interpretation.
4100 Atlas Court * Bakersfield, CA 93308 * (661)327-4911 * Fax(661)327-1918 * www.bclabs.com

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

Dan Schultz
Laboratory Director

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

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.

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.: 00-00601-5

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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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.: 00-00601-6

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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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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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.: 00-00601-9

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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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.: 00-00601-10

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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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.: 00-00601-11

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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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

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.
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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.: 00-00601-4

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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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.: 00-00601-4

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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(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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(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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Volatile Organic Analysis
(EPA Method 8260)

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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
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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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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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BC Laboratories, Inc

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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B C LABORATORIES
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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BOE-C6-0142742

BC Laboratories, Inc

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: 200000601-10*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

Anthony Bonanno

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BC Laboratories, Inc

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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

Anthony Bonanno

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BOE-C6-0142744

BC Laboratories, Inc

B C LABORATORIES
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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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
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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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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BC Laboratories, Inc

B C LABORATORIES
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

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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

BC 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	NON FILTERED CHROMIUM 6	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			X			1/LTR POLY
-4	RB-9	0700	X	X				2/40 ml 1/LTR POLY
-5	RB9-NF	0700			X			1/LTR POLY
-6	BL-8	1005	X	X				2/40 ml 1/500 ml POLY
-7	BL-8 NF	1005			X			1/1 LTR POLY
-8	BL-7	1115	X	X				2/40 ml 1/500 ml POLY
-9	BL-7 NF	1115			X			1/1 LTR POLY
-10	BL-5	1215	X	X				2/40 ml 1/500 ml POLY
-11	BL-5 NF	1215			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

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) [signature]
Received by: (Signature) [signature] Date: 1-14-00 Time: 14:35
Relinquished by: (Signature) [signature]
Received by: (Signature) [signature] Date: 1-14-2000 Time: 20:30
Relinquished by: (Signature)
Received by: (Signature) Date: Time:
Relinquished by: (Signature)
Received by: (Signature) Date: Time:

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

BOE-C6-0142751

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)

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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

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

M. Atoui for

Dan Schultz
Laboratory Director

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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.: 00-00785-3

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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TOTAL CONCENTRATIONS
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Harding Lawson and Associates
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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

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.

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Dan Schultz
Laboratory Director

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BC Laboratories, Inc.

Total Petroleum Hydrocarbons

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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

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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

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Department Supervisor

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BC Laboratories, Inc.

PCBs
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Harding Lawson and Associates
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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
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Stuart G. Buttram
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BC Laboratories, Inc.

PCBs
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Harding Lawson and Associates
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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
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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. #2186

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.
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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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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

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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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

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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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

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 Bonanno

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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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BOE-C6-0142777

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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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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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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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

Anthony Bonanno

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BOE-C6-0142783

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.	%

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 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

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 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

Quality Control Officer

Anthony Bonanno

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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.	%

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142787

BC Laboratories, Inc

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: 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

Quality Control Officer

Anthony Bonanno

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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: 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

Quality Control Officer

Anthony Bonanno

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BOE-C6-0142789

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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BOE-C6-0142790

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
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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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
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

Anthony Bonanno

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BOE-C6-0142792

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: 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

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 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	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

Quality Control Officer

Anthony Bonanno

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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: 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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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: 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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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: 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

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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

Quality Control Officer

Anthony Bonanno

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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

Anthony Bonanno

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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. HOWARD
Project Manager	MARK CLARDY	P.O. No.	Sampler's 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

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	8260	418.1	8082	T.22 CAM						Test Requirements
Detection Limits															
-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 ZACK SB BG

NUMBERING CHECKED BY

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]
Relinquished by: [signature]	1-19-2000	1710	Received by: [signature]
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

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

103

BOE-C6-0142800

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

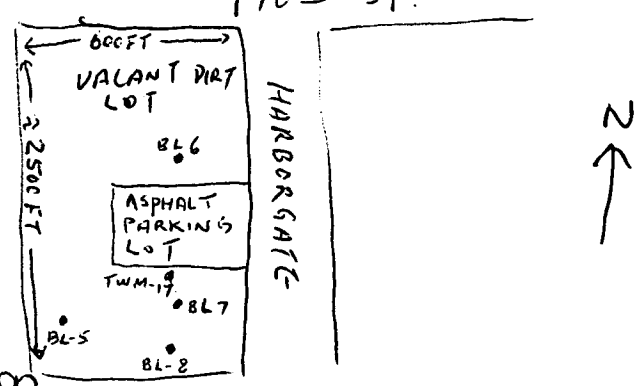
METHOD OF DESTRUCTION
WELLS to BE OVERDRILLED/REMOVED by 8" HSA, BACKFILLED W/CEMENT-BENTONITE GROUT FROM T.D to 10bgs, THEN CONCRETE to SURFACE.

LOCATION

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

Applicant's Signature

PRINT NAME TOO

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

ENTERED

DATE: JAN 11, 00 | SECTION CHIEF: Michael Lui

When signed by Section Chief this application is a permit.

APPLICANT COPY

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

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 ID NO:

CITY, STATE, ZIP: LONG BEACH, CA 90808

PHONE NO: 562 627 2000

CONTAINERS: No. 1 VOLUME 10CY WEIGHT

TYPE: ☐ TANK TRUCK ☐ DUMP TRUCK ☐ DRUMS ☐ CARTONS ☑ OTHER ROLL OFF BOX #MAIN

WASTE DESCRIPTION: SOLID

GENERATING PROCESS:

COMPONENTS OF WASTE		PPM	%	COMPONENTS OF WASTE	PPM	%
1 Bentonite	≤	50	%	5 ROUTE: COMM-L-6 FACILITY		
2 Sand	≤	7	%	6 1723 S. MONROVIA		
3 Clay	≤	9	%	7 LOS ANGELES, CA 90021		
4 Aqua gel	≤	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.

TYPED OR PRINTED FULL NAME & SIGNATURE: [illegible] DATE: 2/16/00

TRANSPORTER

NAME: CONSOLIDATED WASTE SYSTEMS

EPA ID NO: CAD 981 366 513

ADDRESS: 1660 SANTA FE AVE

SERVICE ORDER NO: [illegible]

CITY, STATE, ZIP: MONTEBELLO, CA 90640

PICK UP DATE: 2/16/00

PHONE NO: 213 627 6645

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

TYPED OR PRINTED FULL NAME & SIGNATURE: [illegible] DATE: 2/16/00

TSD FACILITY

NAME: FUTURE RECYCLING, INC.

EPA ID NO: CAD 982 448 460

ADDRESS: 100 W. MERCE AVE

DISPOSAL METHOD: ☐ LANDFILL ☑ OTHER RECYCLE

CITY, STATE, ZIP: BANNING, CA 92220

PHONE NO: 951 922 1630

TYPED OR PRINTED FULL NAME & SIGNATURE: [illegible] DATE

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

DISCREPANCY

BOE-C6-0142804

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

MIKE PALMER
PRINTED NAME

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

SIGNATURE 2-16-00 DATE

TRANSPORTER

NAME: Cameron Environmental, Inc.

ADDRESS: 20741 Manhattan Place

CITY, STATE, ZIP: Torrance, CA 90501

PHONE: ( ) 310-212-0610

Enrique L. Serrano
PRINTED NAME

TRUCK, UNIT, I.D. NO.

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