AVOCET
ENVIRONMENTAL, INC.

March 5, 2008 Project No. 1155.001

Ms. Jennifer L. Wiley, PG, CEM
THE BOEING COMPANY
Environment, Health & Safety – Environmental Remediation
4501 Conant Street
Long Beach, California 90808

Field Data Report
February 2008 Monthly WDR Sampling
Former Building 1/36 Biorecirculation Pilot Test
Waste Discharge Requirements Order No. R4-2007-0040
Boeing Corporate Real Estate Former C-6 Facility
Los Angeles, California

Dear Ms. Wiley:

This report has been prepared by Avocet Environmental, Inc. (Avocet) to summarize and present the field data collected during the February 2008 Monthly Waste Discharge Requirements (WDR) groundwater monitoring event at the Boeing Corporate Real Estate (BCRE) Former C-6 Facility in Los Angeles, California. This monitoring was conducted pursuant to and in accordance with the following:

Avocet Environmental, Inc., February 21, 2008, Technical Memorandum, February 2008 Monthly WDR Sampling and Analysis Plan, February 2008 Monitoring, Waste Discharge Requirements Order No. R4-2007-0040, Boeing Corporate Real Estate Former C-6 Facility, Los Angeles, California (Attachment 1).

California Regional Water Quality Control Board – Los Angeles Region, August 10, 2007, Waste Discharge Requirements for Pilot Tests to Evaluate Bioremediation of Volatile Organic Compounds (VOCs) in Groundwater, Boeing Realty Corporation, Former C-6 Facility, 19503 South Normandie, Los Angeles, California (File No. 95-036; SLIC No. 410; Site ID No. 1846000).

Field activities performed during the February 2008 Monitoring Program are discussed in the following sections. Figure 1 (Attachment 1) presents the locations of the groundwater monitoring wells included as part of this program.

GOUNDWATER SAMPLING ACTIVITIES

Nine out of 11 wells scheduled for ground water level measurement were gauged for depth to water and total depth on February 26, 2008 using Solinst water level and depth sounders. Wells

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AW0066UB and AW0067UB were inaccessible due to active amendment injection. The wells were also inspected for any damage or missing materials. All eleven wells were in good condition, but all were missing the bolts that secure the lids. The wells are frequently accessed during the pilot test and it is suspected that the bolts were temporarily removed by the remediation contractor.

Five wells were purged and sampled on February 26, 2008 using a QED Sample Pro low-flow bladder pump and flow-through cell. These wells were purged for sampling using the low-flow (0.22-0.34 liters/minute) method. Ferrous iron testing was performed in all wells using HACH DR/890 Colorimeter and the QED dissolved oxygen measurements were confirmed in one well using a CHEMetrics Inc. test kit. The field instruments were calibrated prior to the event and the calibration data sheets are included in Attachment 2.

At the completion of low-flow purging, groundwater samples were collected in laboratory supplied containers, properly labeled, identified on the chain-of-custody, and submitted to TestAmerica Laboratory, an appropriately certified environmental testing laboratory located in Irvine, California. A normal 10-day turn-around time was requested for the lab analyses. The samples were analyzed for the following:

- Volatile organic compounds (VOCs) by EPA Method 8260B,
- Total organic carbon (TOC) by EPA Method 9060,
- Volatile fatty acids (VFAs) by IC Method 8M23G (subcontracted by TestAmerica to Microseeps, Inc., Pittsburg, PA),
- Dissolved gases (ethane, ethane, and methane) by RSK 175 (subcontracted by TestAmerica to Air Technology Laboratory, Inc., City of Industry, CA),
- Dissolved minerals (sulfate, nitrate, nitrite, and chloride) by EPA Method 300 Series, and
- Total Alkalinity by EPA Method 310.

Purge water (34 liters) was transported to a storage tank located in the treatment compound. Field data forms are included in Attachment 2.

If you have any questions regarding this report or require additional information, please do not hesitate to call.

Respectfully submitted,

AVOCET ENVIRONMENTAL, INC.

Michael A Rendina

Michael A. Rendina, C.Hg.
Principal

MAR:sh

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ENVIRONMENTAL, INC.

Attachments:

Attachment 1: February 2008 Monthly WDR Sampling and Analysis Plan
Attachment 2: Field Data Forms

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Attachment 1

February 2008 Monthly WDR Sampling and Analysis Plan

AVOCET ENVIRONMENTAL, INC.

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February 21, 2008 Project No. 1155.003

Ms. Jennifer Wiley, P.G. (via electronic mail only)
THE BOEING COMPANY
Environment, Health & Safety –
Environmental Remediation
4501 East Conant Street, M/C D851-0097
Long Beach, California 90808

Technical Memorandum
February 2008 Monthly WDR Sampling and Analysis Plan
February 2008 Monitoring
Waste Discharge Requirements Order No. R4-2007-0040
Boeing Corporate Real Estate Former C-6 Facility
Los Angeles, California

Dear Ms. Wiley:

This memorandum has been prepared by Avocet Environmental, Inc. (Avocet) and presents the sampling and analysis plan (SAP) for the February 2008 required monitoring at Boeing Corporate Real Estate's (BCRE's) Former C-6 Facility in Los Angeles, California. This monitoring is being conducted pursuant to and in accordance with California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) *Approval of Revised Monitoring and Reporting Program CI-9310, Individual Waste Discharge Requirements (WDR) Order No. R4-2007-0040* (the WDR Order) issued February 15, 2008. This memorandum discusses the ground water monitoring activities to be conducted and the analyses to be performed as pertains to the WDR Order. Additional details are provided in the *2008 Groundwater Monitoring Work Plan* (the Work Plan; Avocet, February 4, 2008).

Field Activities

In accordance with the WDR Order, seven wells are to be monitored during February of 2008. These seven wells consist of the two Group A1 Wells (gauged for water level measurement only) and the five Group B1 Wells (gauged for water level measurement and sampled). Since the Group A2 Wells have not been used for amendment injection (electronic mail from Boeing, February 19, 2008), gauging of the Group A2 Wells and gauging and sampling of the Group B2 Wells is not required. However, comments received from Camp Dresser McKee, Inc. (electronic mail, February 21, 2008) recommend gauging of the four Group A2 and Group B2 Wells, so these wells were added to the February 2008 gauging program. A list of the WDR wells to be monitored (and not monitored), broken out by Group, is provided in Table 1. A map showing the well locations is provided in Figure 1. The scope of work will include all tasks associated with collecting the field measurements and laboratory samples required to comply with the WDR

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Order. In brief, these activities will include water level measurements, groundwater well purging and sampling using low-flow methods, and sample analyses. Additional activities such as pre-field documentation, waste management, and reporting are addressed in the Work Plan. Overall, the ground water monitoring activities associated with the WDR Order are as follows:

- Prior to any ground water disturbance, depth to water measurements will be taken from each of the eleven wells using a Solinst (or equivalent) well sounder. To minimize disturbance of the water column in wells scheduled for sampling, total depths in these wells will be verified after purging using a weighted depth sounder.
- Groundwater samples will be collected from five wells during the February 2008 monitoring event (Table 1). Prior to sampling, the wells will be purged using low-flow methods to assure representative samples are collected from the formation. During purging, the flow rate at each location will be maintained between 0.1 and 0.5 L/min, dependent on site-specific and well-specific factors as drawdown is not to exceed 0.3 feet in any well.
- During well purging, biogeochemical parameters including pH, temperature, electric conductivity (EC), dissolved oxygen (DO), and oxygen-reduction potential (ORP) will be periodically measured using a flow-thru cell and QED multiparameter meter. In addition, turbidity will be measured using a standard turbidimeter, ferrous iron (Fe(II)) will be measured using a Hach DR890 Colorimeter, and the QED dissolved oxygen measurements will be confirmed using a CHEMetrics, Inc. test kit. Purging will continue until three consecutive measurements are within +/-0.2 for pH, +/-3% for EC, +/-10% for DO, and +/-20 mV for ORP (ATSM, 2002).
- At the completion of purging, groundwater samples will be collected in laboratory-supplied containers, labeled in accordance with Boeing's Data Management Plan (CH2M Hill, 2007), placed on ice in a cooler, identified on the chain-of-custody, submitted to appropriately certified environmental testing laboratories, and analyzed, according to the WDR Order, for the following:
    - volatile organic compounds (EPA Method 8260B);
    - total organic carbon (EPA 9060);
    - volatile fatty acids by IC Method 8M23G (Microseeps, Inc., Pittsburg, PA);
    - dissolved hydrocarbon gases (ethene, ethane, and methane by RSK 175);
    - dissolved minerals (sulfate, nitrate, nitrite, and chloride by EPA Method 300 Series) and
    - total alkalinity (EPA Method 310.1).

A summary of the analytical program is presented in Table 1.

Closing Remarks

Ground water monitoring is scheduled to take place at the site on Tuesday, February 26, 2008. Avocet Environmental, Inc. appreciates the opportunity to be of service to Boeing Corporate Real Estate. If you have any questions, please do not hesitate to call.

Respectfully submitted,

AVOCET ENVIRONMENTAL, INC.

Michael A. Rendina

Michael A. Rendina, P.G.
Principal

MAR:sh
Enclosure

cc: Mr. Joe Weidmann – Haley & Aldrich
Mr. Ravi Subramanian - CDM

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Table

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Table 1
February 2008 WDR Groundwater Monitoring Program
BCRE Former C-6 Facility,
Los Angeles, California

Well Information			Field Program				Laboratory Program								
Well Name	Sampling Group	Hydrostratigraphic Unit	Total Select VOCs Concentration (µg/l)	Sampling Order	Water Level Measurement	Field Parameters	VOCs EPA 8260B	TOC EPA 9060 Modified	Volatile Fatty Acids IC Method 8M23G (Microseeps)	Dissolved Hydrocarbon Gases (DHGs) Methane, Ethane, Ethene RSK 175	Alkalinity EPA 310.1	Anions (NO_3, NO_2, Cl, SO_4) EPA 300.0	Total Dissolved Solids EPA 160.1	DHC 16S rRNA gene and functional genes tceA, bvcA, and vcrA: by qPCR analysis (North Wind)	Comments
Group A Wells															
AW0066UB	A1	B-Sand	11,000	4	x										Water level measurement only
AW0067UB	A1	B-Sand	9,430	7	x										Water level measurement only
AW0064UB	A2	B-Sand	5,663	10	x										Water level measurement only
AW0065UB	A2	B-Sand	9,060	9	x										Water level measurement only
Group B Wells															
AW0075UB	B1	B-Sand	7,502	3	x	x	x	x	x	x	x	x	-	-	
AW0076UB	B1	B-Sand	11,448	6	x	x	x	x	x	x	x	x	-	-	
AW0077UB	B1	B-Sand	9,241	11	x	x	x	x	x	x	x	x	-	-	
EWB002	B1	B-Sand	6,766	8	x	x	x	x	x	x	x	x	-	-	
AW0073C	B1	B-Sand	1,624	1	x	x	x	x	x	x	x	x	-	-	
WCC_06S	B2	B-Sand	1,490	5	x										Water level measurement only
AW0074UB	B2	C-Sand	2,625	2	x										Water level measurement only
Group C Wells															
TMW_07	C	B-Sand	1,603	-											Not monitored in February
WCC_12S	C	B-Sand	143	-											Not monitored in February
Group D Well															
AW0055UB	D	B-Sand	13,927	-											Not monitored in February
Quality Control Samples															
Duplicates (1 per 20 wells)							x (est. 1)								
Rinsate Blanks (1 per day)							x (est. 1)								
Trip Blanks (1 per cooler)							x (est. 1)								
			Totals:		11	5	8	5	5	5	5	5	0	0	

Notes: Field Parameters = pH, DO, ORP, EC, temp, turb, and ferrous iron
pH = Potential of Hydrogen
DO = Dissolved Oxygen
ORP = Oxidation Reduction Potential
EC = Electrical Conductivity
Temp = Temperature
Turb = Turbidity
µg/l = Micrograms per liter

VOCs = Volatile organic compounds
EPA = U.S. Environmental Protection Agency
TOC = Total Organic Carbon
DHGs = Dissolved hydrocarbon gases
NO_3 = Nitrate, NO_2 = Nitrite, Cl = Chloride, SO_4 = Sulfate
DHC = *dehalococcoides spp.* strains
qPCR = Quantitative Polymerase Chain Reaction

Select VOCs for Total VOC calculation include PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC (June 2007).

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Figure

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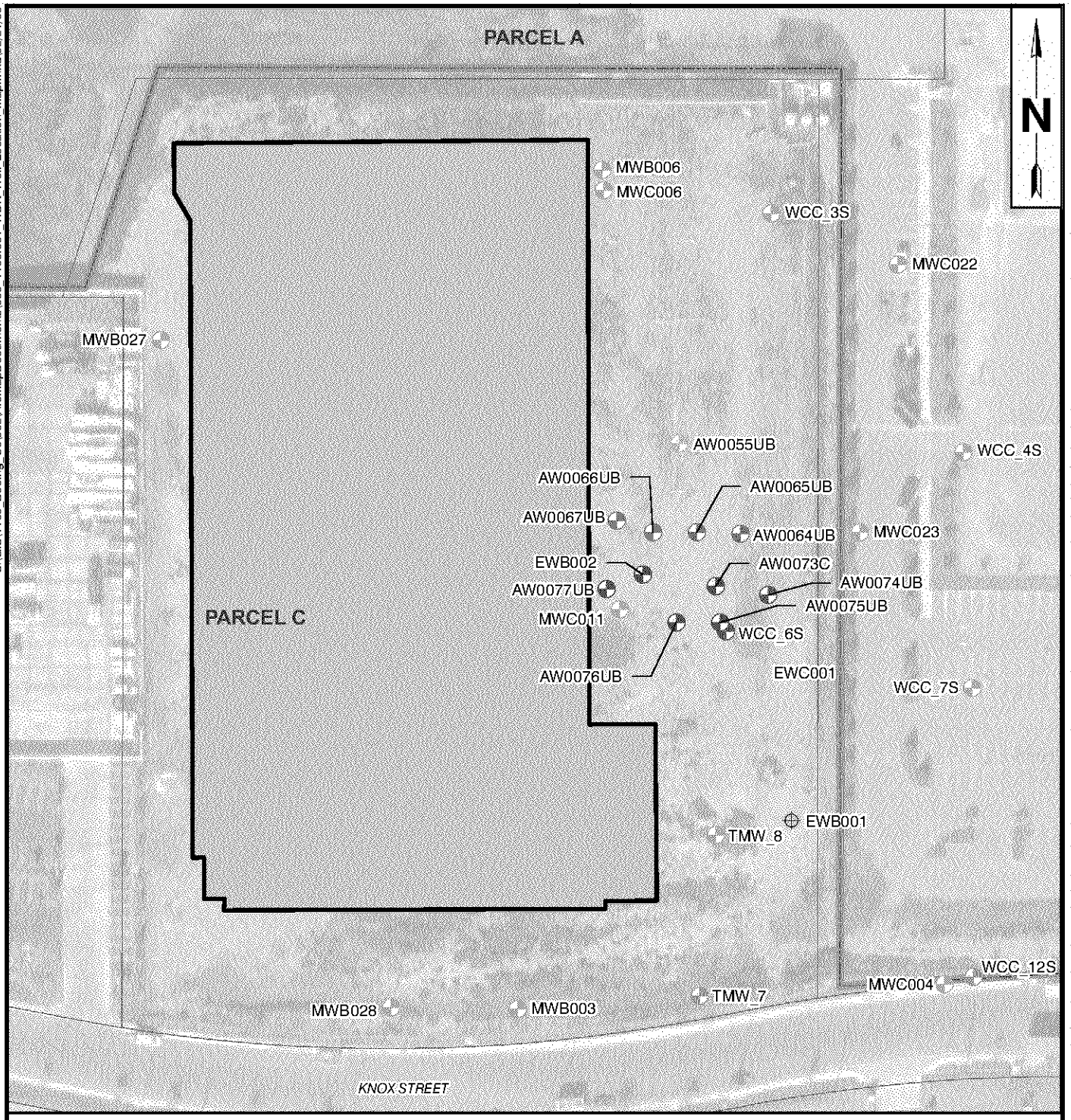
S:\GIS\1155_Boeing_C6\02\ArcMapDocuments\006_1155.001_WDR_Well_Location_Map.mxd\02/21/08



LEGEND

- Group A1 WDR Monitoring Well
- Group A2 WDR Monitoring Well
- Group B1 WDR Monitoring Well
- Group B2 WDR Monitoring Well
- Group C WDR Monitoring Well
- Group D WDR Monitoring Well
- Non-WDR Groundwater Monitoring Well
- Pilot Test Groundwater Extraction Well
- 1451 Knox St.
- Parcel Boundary

0 100 200

SCALE

FIGURE 1

WDR WELL LOCATION MAP

BOEING CORPORATE REAL ESTATE
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

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Attachment 2

Field Data Forms

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GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 Bldg. 1/36 WDR	**Date:**	02.26.08
Project No.:	1155.003	**Prepared by:**	DAB
Well Identification:	AW0073C	**Weather:**	Sunny
Measurement Point Description:	TOC-N	**Pump Intake:**	106'
		Screen:	96 - 116

A	B	C	D = C - B	E = B - A	G = D x F	H = 20 x F	I = -B x F	
Depth to LNAPL (ft-bmp)	**Depth to Static Water Level** (ft-bmp)	**Well Total Depth** (ft-bmp)	**Water Column Height** (ft)	**LNAPL Thickness** (ft)	**One Casing Volume** (gallons)	**Screen Volume** (gallons)	**Above Screen Volume** (gal.)	**Total Purge Volume** (gal.)
—	60.32	117.6'	57.3	—	N/A	N/A	N/A	N/A

	Gallons/Foot			
Well Diameter (inches) = 2	0.75	(2)	4	6
F - **Gallons per foot of casing**	0.02	0.16	0.65	1.47

Field Equipment: QED
Purge Method: Micropurge
Well Condition: Good - not bolted

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	pH [+/- 0.1 pH]	Temperature (°C) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	ORP (mV) [+/- 10%]	Observations
8:08	10/5/135	0	100	60.32	6.37	18.21	—	0.823	7.25	-227	clear
8:13	9.5/5.5/150	0.500	180	<60.62	6.85	20.98	—	0.922	1.86	-265	cloudy
8:18	↓	1.400	↓	<60.62	7.05	21.23	77.1	0.936	0.51	-289	cloudy
8:23		2.300		<60.62	7.04	21.26	14.3	0.913	0.36	-287	cloudy
8:28		3.200		<60.62	7.04	21.43	10.5	0.900	0.31	-288	ptly clear
8:32		3.920		<60.62	7.05	21.48	87.1	0.896	0.26	-285	ptly clear
8:35	↓	4.460	↓	<60.62	7.06	21.52	85.7	0.886	0.23	-285	ptly clear

Purge Start Time	Purge End Time	Average Flow (mL/min)	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Water Level Depth (Dx0.20) + B	Water Level at Sampling Time (ft bmp)	Sample Collection Time	Sample Identification
8:08	8:35	180	4.46	N/A	—	60.4	8:38	AW0073C_WG200802 26 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
~~0.40~~ 0.96	2.8	0.6

DUP: No
DRUM NO: —

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 Bldg. 1/36 WDR	**Date:** 02.26.08	
Project No.:	1155.003	**Prepared by:** DAB	
Well Identification:	AW0075UB	**Weather:** Sunny	
Measurement Point Description:	TOC-N	**Pump Intake:** 79'	**Screen:** 69 - 89

A	B	C	D = C - B	E = B - A	G = D x F	H = 20 x F	I = -B x F	
Depth to LNAPL (ft-bmp)	**Depth to Static Water Level** (ft-bmp)	**Well Total Depth** (ft-bmp)	**Water Column Height** (ft)	**LNAPL Thickness** (ft)	**One Casing Volume** (gallons)	**Screen Volume** (gallons)	**Above Screen Volume** (gal.)	**Total Purge Volume** (gal.)
--	60.16	85.70		--	N/A	N/A	N/A	N/A

	Gallons/Foot			
Well Diameter (inches) = 2	0.75	2	4	6
F - **Gallons per foot of casing**	0.02	0.16	0.65	1.47

Field Equipment: QED
Purge Method: Micropurge
Well Condition: Good - not bolted

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	pH [+/- 0.1 pH]	Temperature (°C) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	ORP (mV) [+/- 10%]	Observations
9:35	10/5/150'	0	300	60.16	6.91	22.32	135	1.85	9.78	-226	cloudy
9:40	↓	1.5	↓	<60.46	6.83	22.26	102	1.89	1.25	-258	cloudy
9:45	↓	3.0	↓	↓	6.81	22.26	67.3	1.99	0.51	-271	clearer
9:50	↓	4.5	↓	↓	6.76	22.26	56.9	2.07	0.19	-275	clear
9:55	↓	6.0	↓	↓	6.72	22.28	40.2	2.18	0.12	-274	clear
10:00	↓	7.5	↓	↓	6.67	22.28	30.9	2.29	0.11	-271	clear
10:05	↓	9.0	↓	↓	6.65	22.30	24.8	2.34	0.11	-268	clear
10:08	↓	9.9	↓	↓	6.65	22.30	26.7	2.42	0.09	-267	clear
10:11	↓	10.8	↓	↓	6.65	22.31	23.9	2.44	0.10	-267	clear
10:14	↓	11.7	↓	↓	6.64	22.32	21.9	2.47	0.10	-265	clear

Purge Start Time	Purge End Time	Average Flow (mL/min)	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Water Level Depth (Dx0.20) + B	Water Level at Sampling Time (ft bmp)	Sample Collection Time	Sample Identification
9:35	10:14	300	11.7	N/A	--	60.3	10:20	AW0075UB_WG200802 26 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
1.65	8.9	NA

DUP: --
DRUM NO: --

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 Bldg. 1/36 WDR	**Date:** 02.26.08	
Project No.:	1155.003	**Prepared by:** DAB	
Well Identification:	AW0076UB	**Weather:** Sunny, warm	
Measurement Point Description:	TOC-N	**Pump Intake:** 79'	**Screen:** 69 - 89

A	B	C	D = C - B	E = B - A	G = D x F	H = 20 x F	I = -B x F	
Depth to LNAPL (ft-bmp)	**Depth to Static Water Level** (ft-bmp)	**Well Total Depth** (ft-bmp)	**Water Column Height** (ft)	**LNAPL Thickness** (ft)	**One Casing Volume** (gallons)	**Screen Volume** (gallons)	**Above Screen Volume** (gal.)	**Total Purge Volume** (gal.)
—	60.60	88.55	27.95	—	N/A	N/A	N/A	N/A

	Gallons/Foot			
Well Diameter (inches) = 2	0.75	2	4	6
F - **Gallons per foot of casing**	0.02	0.16	0.65	1.47

Field Equipment: QED
Purge Method: Micropurge
Well Condition: Good, not bolted

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	pH [+/- 0.1 pH]	Temperature (°C) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	ORP (mV) [+/- 10%]	Observations
14:13	10/5/120'	0	175	60.60	6.83	24.61	151	2.97	6.33	-132	
14:18	↓	0.875	↓	<60.90	6.69	22.52	258	3.05	0.45	-185	
14:23		1.75		<60.90	6.64	22.41	257	3.05	0.21	-194	
14:26		2.275		<60.90	6.63	22.40	227	3.05	0.19	-195	
14:29		2.80		<60.90	6.62	22.38	199	3.07	0.18	-196	mostly clear
14:32		3.325		<60.90	6.62	22.33	179	3.09	0.16	-195	mostly clear
14:35		3.85		<60.90	6.61	22.33	169	3.13	0.16	-194	mostly clear

Purge Start Time	Purge End Time	Average Flow (mL/min)	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Water Level Depth (Dx0.20) + B	Water Level at Sampling Time (ft bmp)	Sample Collection Time	Sample Identification
14:13	14:35	175	3.85	N/A	—	60.7	14:38	AW0076UB_WG200802 26 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
1.36	8.7	—

DUP: —
DRUM NO: —

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 Bldg. 1/36 WDR	**Date:**	2-26-08
Project No.:	1155.003	**Prepared by:**	DAB
Well Identification:	AW0077UB	**Weather:**	Warm, Sunny
Measurement Point Description:	TOC-N	**Pump Intake:**	78'
		Screen:	70.5 - 85.5

A	B	C	D = C - B	E = B - A	G = D x F	H = 15 x F	I = – B x F	
Depth to LNAPL (ft-bmp)	**Depth to Static Water Level** (ft-bmp)	**Well Total Depth** (ft-bmp)	**Water Column Height** (ft)	**LNAPL Thickness** (ft)	**One Casing Volume** (gallons)	**Screen Volume** (gallons)	**Above Screen Volume** (gal.)	**Total Purge Volume** (gal.)
—	60.75	88.15	27.40	—	N/A	N/A	N/A	N/A

	Gallons/Foot			
Well Diameter (inches) = 2	0.75	2	4	6
F - **Gallons per foot of casing**	0.02	0.16	0.65	1.47

Field Equipment: QED
Purge Method: Micropurge
Well Condition: Good, not bolted

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	pH [+/- 0.1 pH]	Temperature (°C) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	ORP (mV) [+/- 10%]	Observations
~~10~~ 12:41	10/5/150	0	300	60.75	6.6	23.81	34.6	1.93	5.75	-204	
12:48	11/4/130	0.75	150	<61.05	6.49	22.38	41.6	2.62	0.49	-228	
12:50	↓	1.35	150	<61.05	6.49	22.28	54.6	2.60	0.32	-229	
12:53	↓	1.80	150	<61.05	6.52	22.29	56.4	2.58	0.25	-229	

Purge Start Time	Purge End Time	Average Flow (mL/min)	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Water Level Depth (Dx0.20) + B	Water Level at Sampling Time (ft bmp)	Sample Collection Time	Sample Identification
12:41	12:53	150	1.8	N/A	NA	<61.05	13:00	AW0077UB_WG200802 26 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
0.95	19.8	—

DUP: AW0077UB_WG20080226-02
DRUM NO: —

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 Bldg. 1/36 WDR	**Date:** 02.26.08	
Project No.:	1155.003	**Prepared by:** DAB	
Well Identification:	EWB002	**Weather:** Sunny	
Measurement Point Description:	TOC-N	**Pump Intake:** 75'	**Screen:** 60 - 90

A	B	C	D = C - B	E = B - A	G = D x F	H = 30 x F	I = – B x F	
Depth to LNAPL (ft-bmp)	**Depth to Static Water Level** (ft-bmp)	**Well Total Depth** (ft-bmp)	**Water Column Height** (ft)	**LNAPL Thickness** (ft)	**One Casing Volume** (gallons)	**Screen Volume** (gallons)	**Above Screen Volume** (gal.)	**Total Purge Volume** (gal.)
–	60.53	89.56	29.03	–	N/A	N/A	N/A	N/A

	Gallons/Foot			
Well Diameter (inches) = 6	0.75	2	4	(6)
F - **Gallons per foot of casing**	0.02	0.16	0.65	1.47

Field Equipment: QED

Purge Method: Micropurge

Well Condition: Good - no bolts

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	pH [+/- 0.1 pH]	Temperature (°C) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	ORP (mV) [+/- 10%]	Observations
11:12	10/5/150	0.00	300	60.53	6.99	24.82	8.93	2.34	8.72	-165	clear
11:17	↓	1.5	↓	<60.83	6.68	22.15	2.21	2.56	2.97	-188	clear
11:22		3.0			6.67	22.09	1.37	2.54	2.66	-181	clear
11:27		4.5			6.64	22.26	1.24	2.54	2.73	-187	clear
11:32		6.0			6.61	22.12	1.46	2.55	2.09	-183	clear
11:37		7.5			6.62	22.09	10.48?	2.49	2.25	-191	clear
11:42		9.0			6.62	22.09	10.13?	2.47	2.52	-189	clear
11:47		10.5			6.59	22.14	1.13	2.45	2.34	-189	clear
11:50	↓	11.4	↓		6.59	22.13	1.07	2.44	2.37	-190	clear

Purge Start Time	Purge End Time	Average Flow (mL/min)	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Water Level Depth (Dx0.20) + B	Water Level at Sampling Time (ft bmp)	Sample Collection Time	Sample Identification
11:12	11:50	300	12.0	N/A	–	60.6	11:52	EWB002_WG200802 26 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
1.48	6.2	–

DUP: –

DRUM NO: –

CHAIN OF CUSTODY RECORD

COC #: AV20080226A

Page: 1 of 1

Customer Information		Project Information	
Site:	C6	Client Name:	Avocet Environmental, Inc.
Company:	Avocet Environmental, Inc.	Sampling Event:	Feb-2008 B1/36 WDR
Report to:	Michael A. Rendina, P.G.	Project Number:	1155.003
Address:	16 Technology Dr. Suite 154	Project Manager:	Michael Rendina
		PM Phone #:	(949) 296-0977
	Irvine	Field Contact:	Darren Brandner
	CA	Field Contact #:	(949) 870-2655
	92618	Lab Name:	Test America
Email:	mrendina@avocetenv.com	Lab Contact:	Trupti Mistry
		Lab Address:	17461 Derian Ave. #100
			Irvine, CA 92614
		Lab Phone:	(949) 261-1022

Project Information			
Collector:	DAB	Boeing PM:	
Contact #:			

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells bellow are Turn Around Times.

Sample Name	Matrix	Date	Time	No. of Containers	Anions 300.0 NO2/NO3/Cl/SO4 Water	DHGs RSK175 Ethene/Ethane/Methane Water	TOC 9060 Water	Total Alkalinity 310.1 Water	VFA 8M23G Water	VOCs 8260B C1 Water	Comments
AW0073C_WG20080226_01	Water	2/26/2008	8:38	13	10	10	10	10	10	10	
AW0075UB_WG20080226_01	Water	2/26/2008	10:20	13	10	10	10	10	10	10	
AW0076UB_WG20080226_01	Water	2/26/2008	14:38	13	10	10	10	10	10	10	
AW0077UB_WG20080226_01	Water	2/26/2008	13:00	13	10	10	10	10	10	10	
AW0077UB_WG20080226_02	Water	2/26/2008	13:00	6						10	
EB_~~WG~~AV20080226_01	Water	2/26/2008	10:55	6						10	
EWB002_WG20080226_01	Water	2/26/2008	11:52	13	10	10	10	10	10	10	
TB_~~WG~~AV20080226_01	Water	2/26/2008	—	6						10	

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
David Lieberman	2/26/2008						2/26/08
Company: Avocet Environmental, Inc.	Time: 17:26	Company: —	Time:	Company:	Time:	Company: TAI	Time: 1726

Comments: Note:1) VFA sample to be delivered to Microseeps Inc., Pittsburgh, PA for analysis by IC Method 8M23G, 2) Include A+A+2CVE for 8260B

Geotracker EDF ☐

Data Validation Package ☐

4.8/7.8

Certificate of Calibration

Equipment/Model	Serial Number Probe	Serial Number Readout	FlowCell
MiroPurge/MP20	QT03391	QD03342	

This instrument has been calibrated using calibration SOLUTIONS and PROCEDURES which are traceable to N.I.S.T.
Test and calibration data is on file with the EnviroSupply & Services

Calibration Date	Calibration Procedure	Repair & Service DEPT
02/25/2008 15:10 PM	Ph 7, 4 @10 DO 8.56 mg/l SPCon 0.45mS/cm ORP 289 mV	ABDULR ITANI

Enviro Supply & Service, Inc.
(800) 201-8150
Ext 109

AVOCET ENVIRONMENTAL, INC.

QA/QC SAMPLE IDENTIFICATION FORM

Project Name: BOEING FORMER C-6 - FEBRUARY 2008 WDR

Project No.: 1155.003

Date	Time	QA/QC Sample Type (Duplicate, Field Blank, Equipment Blank, Split)	Sample ID	Sample Location	Primary Sample Reference	Analytical Methods	Organic-Free Water Source	Field Personnel	Comments
2-26-08	—	TRIP BLANK	TB_AV20080226_01	C-6	NA	8260	TEST AMERICA	DML/DAB	
2-26-08	10:55	Equipment Blank	EB_AV20080226_01	C-6	NA	8260	TEST AMERICA	DML/DAB	
2-26-08	13:00	Duplicate	AW0077UB_WG20080226_02	C-6	AW0077UB_WG20080226_01	8260	NA	DML/DAB	Collected after AW0075UB

S:\Projects\1146 Boeing C-1\005_Ground Water Monitoring\Field Forms\[QAQC Sample ID Form.xls]Sheet1

AVOCET ENVIRONMENTAL, INC.

Groundwater Monitoring Well Gauging Sheet

Project Name: Boeing Former C-6 Bldg. 1/36 WDR
Project Manager: M. Rendina
Project No.: 1155.003
Location: Torrance, CA
Field Personnel: DML / DAB
Date: 2-26-08
Field Conditions: Clear, warm

Well ID	Previous Measurement Date	Previous Depth to Water	Previous Total Depth	Date	Time	Well Diameter in	PID (ppm)	Measurement Point	Depth to Water	Depth to Water #2	Total Depth	Personnel	Comments/Well Conditon
WCC_06S	Jan-08	59.79	85.05	2-26-08	7:23	4	0.0	TOC-N	59.62	59.62	85.05	DML	good, no bolts
AW0073C	Jan-08	60.55	117.5	2-26-08	7:29	2	2.8	TOC-N	60.32	60.32	117.6	DML	good. 60.20 ft bgs w\MP30
AW0074UB	Jan-08	59.89	88.55	2-26-08	7:47	2	3.8	TOC-N	59.65	59.65	88.55	DML	good. Cap doesn't seal
AW0064UB	Jan-08	60.22	87.5	2-26-08	7:51	2	1.0	TOC-N	60.15	60.15	87.5	DML	good, cap doesn't seal
EWB002	Jan-08	60.71	94.34	2-26-08	7:56	6	6.2	TOC-N	60.53	60.53	89.56	DML	good
AW0075UB	Jan-08	60.3	88.72	2-26-08	7:59	2	8.9	TOC-N	60.16	60.16	85.7	DML	good
AW0065UB	Jan-08	60.51	89.1	2-26-08	8:58	2	1.4	TOC-N	60.39	60.39	89.1	DML	good.
AW0077UB	Jan-08	61.21	83.45	2-26-08	9:03	2	19.8	TOC-N	60.75	60.75	88.15	DML	good
AW0067UB	Jun-07	61.14	87.4					TOC-N	No measurement			DML	injecting
AW0066UB	Jun-07	61.12	89.8					TOC-N	No measurement			DML	injecting
AW0076UB	Jan-08	60.71	88.57	2-26-08	9:07	2	8.7	TOC-N	60.60	60.60	88.55	DML	good