AVOCET
ENVIRONMENTAL, INC.

May 22, 2008 Project No. 1155.006

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

Field Data Report
May 2008 Monthly WDR Sampling
Former Building 1/36 WDR 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 May 2008 monthly Building 1/36 Waste Discharge Requirements (WDR) groundwater monitoring event. The monitoring was conducted pursuant to and in accordance with the following:

Avocet Environmental, Inc., May 6, 2008, Technical Memorandum, May 2008 Monthly WDR Sampling and Analysis Plan, May 2008 Monitoring - Building 1/36 Area, Boeing Corporate Real Estate Former C-6 Facility, Los Angeles, California (Attachment 1).

California Regional Water Quality Control Board, Los Angeles Region (LARWQCB), February 15, 2008, Approval of Revised Monitoring and Reporting Program CI9310, Individual Waste Discharge Requirements Order No. R4-2007-0040, Boeing Corporate Real Estate, Former C-6 Facility, 19503 South Normandie, Los Angeles, California (File No. 95-036; SLIC No. 0410; Site ID No. 1846000).

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

GOUNDWATER SAMPLING ACTIVITIES

All 10 wells scheduled for ground water level measurement were gauged for depth to water and total depth on May 20, 2008 using Solinst water level and depth sounders. The wells were also inspected for any damage or missing materials. All wells were in good condition, but all were

16 Technology Drive, Suite 154 ▪ Irvine, California 92618-2327
Phone 949.296.0977 ▪ Fax 949.296.0978
www.avocetenv.com

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 May 20, 2008 using dedicated low-flow bladder pumps and a QED MP20 flow-through cell. These wells were purged for sampling using the low-flow (~0.2 liters/minute) method. Ferrous iron testing was performed in all wells using a HACH DR/890 Colorimeter. 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),
- Total Alkalinity by EPA Method 310.1,
- Dissolved minerals (sulfate, nitrate, nitrite, and chloride) by EPA Method 300 Series, and
- Quantitative polymerase chain reaction (qPCR) analysis for DHC 16S rRNA gene and functional genes tceA, bvcA, and vcrA (subcontracted by TestAmerica to North Wind, Inc., Pocatello, ID).

Purge water (approximately 18 liters) was placed in an appropriately labeled 55-gallon drum located adjacent to the treatment compound. The analytical results will be used to profile the purge water for transport to an appropriate off-site facility for treatment and disposal. Management, containerization, staging, profiling, and transportation will be conducted in accordance with procedures established by Boeing Corporate Real Estate.

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

Respectfully submitted,

AVOCET ENVIRONMENTAL, INC.

Michael A. Rendina, C.Hg.
Principal

MAR:sh
Attachments:
Attachment 1: May 2008 Groundwater Sampling and Analysis Plan
Attachment 2: Field Data Forms

S:\Projects\1155 Boeing Former C-6 Facility\Groundwater Monitoring\May 2008\FDR\FDR_May 20080520.doc

Attachment 1

May 2008 Groundwater Sampling and Analysis Plan

AVOCET
ENVIRONMENTAL, INC.

AVOCET
ENVIRONMENTAL, INC.

May 6, 2008 Project No. 1155.006

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
May 2008 Monthly WDR Sampling and Analysis Plan
May 2008 Monitoring - Building 1/36 Area
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 May 2008 required monitoring at Boeing Corporate Real Estate's (CRE'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 May of 2008. These seven wells consist of the two Group A1 Wells (gauged for water level only) and the five Group B1 Wells (gauged for water level and sampled). Since the Group A2 Wells have not been used for amendment injection (C-6 Weekly Status Reports, Camp Dresser McKee, Inc., various dates through April 28, 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 May 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

16 Technology Drive, Suite 154 ▪ Irvine, California 92618-2327
Phone 949.296.6977 ▪ Fax 949.296.6978
www.avocetenv.com

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 May 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, May 20, 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

S:\Projects\1155 Boeing Former C-6 Facility\Groundwater Monitoring\SAP May 08 1155\Technical Memorandum_SAP_050608.doc

Table

AVOCET
ENVIRONMENTAL, INC.

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

Well Information			Field Program				Laboratory Program								Comments
Well Name	Sampling Group	Hydrostratigraphic Unit	Total 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)	
Group A Wells															
AW0066UB	A1	B-Sand	866	2	x										Water level measurement only
AW0067UB	A1	B-Sand	1,789	3	x										Water level measurement only
AW0064UB	A2	B-Sand	28,520	8	x										Water level measurement only
AW0065UB	A2	B-Sand	144,400	11	x										Water level measurement only
Group B Wells															
AW0075UB	B1	B-Sand	75,064	9	x	x	x	x	x	x	x	x	-	-	
AW0076UB	B1	B-Sand	100,644	10	x	x	x	x	x	x	x	x	-	-	
AW0077UB	B1	B-Sand	18,389	7	x	x	x	x	x	x	x	x	-	-	
EWB002	B1	B-Sand	9,661	5	x	x	x	x	x	x	x	x	-	-	
AW0073C	B1	B-Sand	16,326	6	x	x	x	x	x	x	x	x	-	-	
WCC_06S	B2	B-Sand	703	1	x										Water level measurement only
AW0074UB	B2	C-Sand	7,428	4	x										Water level measurement only
Group C Wells															
TMW_07	C	B-Sand	-	-											Not monitored in May
WCC_12S	C	B-Sand	-	-											Not monitored in May
Group D Well															
AW0055UB	D	B-Sand	-	-											Not monitored in May
Quality Control Samples															
Duplicates (1 per 20 wells)							x (est. 1)								
Rinsate Blanks (1 per day)							(est. 0)								
Trip Blanks (1 per cooler)							x (est. 1)								
			Totals:		11	5	7	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
Total VOCs Concentration - B1 Wells March 2008 monitoring.

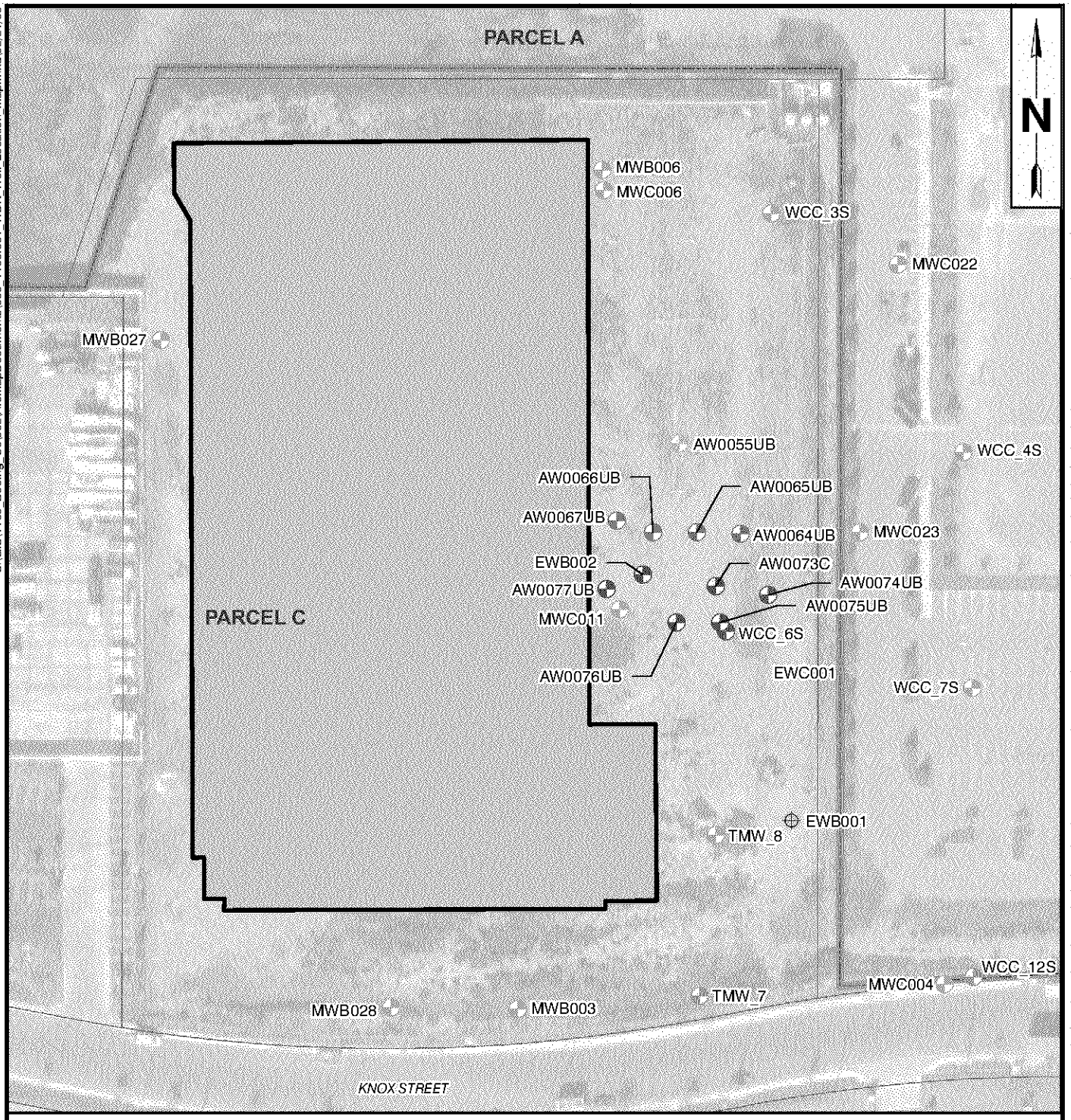
VOCs = Volatile organic compounds
EPA = U.S. Environmental Protection Agency
TOC = Total Organic Carbon
DHGs = Dissolved hydrocarbon gases
NO_3 = Nitrate, NO_2 = Nitrite, Cl = Chloride, SO_4 = Sulfate
DHC = *dehalococcoides spp.* strains
qPCR = Quantitative Polymerase Chain Reaction

AVOCET ENVIRONMENTAL, INC.

Figure

AVOCET
ENVIRONMENTAL, INC.

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

AVOCET ENVIRONMENTAL, INC.

Attachment 2

Field Data Forms

AVOCET
ENVIRONMENTAL, INC.

AVOCET ENVIRONMENTAL, INC.

Groundwater Monitoring Well Gauging Sheet

Project Name: Boeing C-6 MaY 2008 Gauging Event **Project Manager:** Michael Rendina **Project No.:** 1155.006

Location: Torrance, CA **Field Personnel:** BCB **Date:** 5/20/2008

Field Conditions: Tip Top

Well ID	Previous Measurement Date	Previous Depth to Water	Previous Total Depth	Date	Time	Well Diameter	PID (ppm)	Measurement Point	Depth to Water	~~Depth to Water #2~~	~~Total Depth~~	Comments/Well Conditon
AW0074UB	Apr-08	59.35	95	5/20/08	0759	2"	0.2	TOC-N	59.30			
AW0075UB	Apr-08	59.87	95		0827	2"	2.7	TOC-N	59.85			
AW0064UB	Apr-08	58.87	92		0815	2"	1.2	TOC-N	58.78			
AW0067UB	Apr-08	58.94	93		0820	2"	0.7	TOC-N	59.64			
AW0073C	Apr-08	60.04	120		0940	2"	2.1	TOC-N	60.09			
AW0077UB	Apr-08	60.57	86		1051	2"	4.4	TOC-N	60.54			
EWB002	Apr-08	60.31	90		1302	6"	23.8	TOC-N	60.19			
AW0076UB	Apr-08	59.34	92		1357	2"	4.9	TOC-N	60.27			
AW0065UB	Apr-08	59.29	92		1510	2"	11.2	TOC-N	59.19			
AW0066UB	Apr-08	59.37	91		1520	2"	4.7	TOC-N	59.82			

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 GWM - B1/36 WDR	**Date:**	5/20/08
Project No.:	1155.003	**Prepared by:**	BCB
Well Identification:	AW0076UB	**Weather:**	Overcast / Warm
Measurement Point Description:	TOC-N	**Pump Intake:**	COS
		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.)
—	60.27	92.00	31.73	—	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

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	Temperature (°C) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observations
1405	10/5s @ 145ft	—	200	60.27	25.75	3.07	1.29	6.77	-155	21.1	cloudy
1408	↓	600	↓	60.36	22.79	3.37	0.21	6.53	-182	17.2	"
1411		1200		60.37	22.61	3.45	0.17	6.52	-190	6.87	colorless
1414		1800		60.37	22.53	3.55	0.16	6.51	-194	10.11	"
1417		2400		60.38	22.49	3.63	0.17	6.52	-196	8.93	"
1420		3000		60.37	22.57	3.63	0.31	6.53	-192	7.44	"
1423		3600		60.37	22.55	3.62	0.29	6.52	-19	3.72	"

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
1405	1423	200	~3.6	N/A	NA	60.37	1423	AW0076UB_WG200805 20 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
1.43	4.9	

DUP:
DRUM NO:

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 GWM - B1/36 WDR	**Date:**	5/20/08
Project No.:	1155.003	**Prepared by:**	BCB
Well Identification:	~~AW0077UB~~ EWB002	**Weather:**	Partly cloudy / warm
Measurement Point Description:		**Pump Intake:**	**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.)
—	60.19	90.00	29.81	—	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

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	Temperature (°C) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observations
1304	10/5s @ 145%	—	200	60.19	22.28	3.05	0.24	6.51	-232	24.6	colorless
1307	↓	600	↓	60.30	22.05	3.02	0.23	6.47	-229	17.4	"
1310		1200		60.37	21.99	3.02	0.20	6.47	-225	1.69	"
1313		1800		60.42	21.97	3.02	0.18	6.47	-224	1.31	"
1316		2400		60.44	21.93	3.01	0.19	6.46	-222	1.11	"
1319		3000		60.45	21.91	3.01	0.19	6.47	-218	0.92	"
1322	↓	3600	↓	60.45	21.94	3.02	0.19	6.46	-217	0.97	"

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
1304	1322	200	3.6	N/A	NA	60.45	1322	~~AW0077UB~~ EWB002 WG200805 20 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
1.49	4.4	

DUP: ~~AW0077UB~~ WG200805 20 _02
DRUM NO: EWB002

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 GWM - B1/36 WDR	**Date:**	5/20/08
Project No.:	1155.003	**Prepared by:**	BCB
Well Identification:	~~EWB002~~ AW0077UB	**Weather:**	Overcast / Cool
Measurement Point Description:	TOC-N	**Pump Intake:**	COS
		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.)
—	60.54	86.00	25.46	—	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

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	Temperature (°C) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observations
1051	10/5s @ 150ff	—	200	60.54	22.80	2.10	0.63	6.70	-213	27.4	colorless
1054	↓	600	↓	61.17	21.74	2.97	0.25	6.14	-224	15.7	"
1057		1200		61.25	21.75	3.55	0.22	6.16	-228	3.16	"
1100		1800		61.31	21.76	3.06	0.22	6.22	-237	2.25	"
1103		2400		61.40	21.67	2.95	0.26	6.05	-236	9.51	light yellow
1106		3000		61.45	21.60	2.94	0.24	5.99	-241	7.74	"
1109		3600		61.50	21.62	2.97	0.34	6.02	-238	6.99	"

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
1051	1109	200	3.6	N/A	NA	61.50	1109	AW0077UB ~~EWB002~~_WG200805 20 _01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
0.81	23.8	

DUP: ~~EWB002~~_WG200805 20 _02

DRUM NO: AW0077UB

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 GWM - B1/36 WDR	**Date:**	5/20/08
Project No.:	1155.003	**Prepared by:**	BLB
Well Identification:	AW0073C	**Weather:**	Overcast / Cool
Measurement Point Description:	TOC-N	**Pump Intake:**	COS
		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.)
—	60.09	117.00	56.91	—	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

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	Temperature (°C) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observations
0940	10/5s @ 145 ft	—	200	60.09	22.30	1.75	2.31	6.82	-121	7.37	Colorless
0943	↓	600	↓	60.14	22.30	0.883	0.90	7.12	-232	16.5	"
0946		1200		60.17	22.14	0.885	0.34	7.11	-242	51.4	"
0949		1800		60.19	22.17	0.798	0.19	7.11	-254	33.5	"
0952		2400		60.20	22.17	0.795	0.17	7.12	-260	29.1	"
0955		3000		60.18	22.16	0.793	0.14	7.12	-267	24.8	"
0958		3600		60.17	22.17	0.793	0.13	7.11	-274	10.81	"

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
0940	0958	200	3.6	N/A	NA	60.17	0958	AW0073C_WG20080520_01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
1.07	2.1	

DUP: AW0073C_WG20080520_02
DRUM NO:

AVOCET ENVIRONMENTAL, INC.

GROUNDWATER SAMPLING DATA SHEET

Project Name:	Boeing C-6 GWM - B1/36 WDR	**Date:**	5/20/08
Project No.:	1155.003	**Prepared by:**	BCB
Well Identification:	AW0075UB	**Weather:**	Overcast / Cool
Measurement Point Description:	TOC - N	**Pump Intake:**	60S
		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.)
—	59.85	93.00	33.15	—	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

Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	Temperature (°C) [+/- 10%]	Conductivity (mS/cm) [+/- 10%]	Dissolved Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observations
0827	10/5s @ 145 H	—	200	59.85	22.17	3.11	0.58	6.54	-156	18.2	colorless
0830	↓	600		59.91	22.11	3.02	0.30	6.46	-164	15.9	"
0833		1200		59.88	22.10	3.03	0.26	6.45	-117	12.6	"
0836		1800		59.87	22.10	3.05	0.23	6.45	-180	15.7	"
0839		2400		59.84	22.07	3.07	0.22	6.44	-183	19.4	"
0842		3000		59.88	22.06	3.09	0.22	6.45	-184	18.9	"
0845	↓	3600		59.84	22.08	3.10	0.21	6.44	-185	14.2	"

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
0827	0845	200	3.6	N/A	NA	59.89	0845	AW0075UB_WG20080520_01

Notes: (units) [stabilization criteria]

Field Parameters		
Ferrous Iron (mg/L)	PID (ppm):	Chemetrics D.O.(mg/L)
1.29	2.7	—

DUP:
DRUM NO:

AVOCET ENVIRONMENTAL, INC.

INSTRUMENT CALIBRATION SHEET

Project Name: Boeing/Former C-1	Project #: 1155

Date	Time	Instrument Type	Instrument Serial No.	Calibration Method	Calibrated by	Remarks
5/20/08	0702	QED		pH & DO	BCB	