



*Environmental Chemical Corporation  
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19 January 2010  
ECC Job No. 5564.001

**TO:** Mr. Todd Bober, RPM

**LOCATION:** BRAC PMO NE

**FROM:** Bob Phinney, Plant Operator

**LOCATION:** ECC-NAS Brunswick

**SUBJECT:** Monthly Operations Report for 1-31 December 2009  
Groundwater Extraction and Treatment System, Building 50  
Naval Air Station Brunswick, Maine  
Contract No. N40085-09-D-7035, Task Order No. 0002

The following is the December 2009 monthly operations report for the Groundwater Extraction and Treatment System (GWETS) located at Naval Air Station Brunswick, Maine. There was no overflow discharge to the Brunswick Sewer District collection system during this period.

Table 1 summarizes the GWETS process flow data and results of the daily in-plant water quality analysis. Table 2 provides a summary of daily individual extraction well pumping performance as well as monthly pumping efficiency during the reporting period. Table 3 provides the monthly laboratory analytical results for the Eastern Plume influent and GWETS effluent samples.

The GWETS treatment plant was operational for 97.73 % of the available hours during December 2009. Well performance based on well system capacity (all 4 wells) was 94.20%. There were six operational interruptions or corrective actions necessary to restore plant operations during December 2009. One interruption was due to a power outage on 21 December 2009 (2 hours). There was a HiPOx generator trip on 4 December 2009 (30 minutes) and on 2 December, 22 December, 25 December, and 30 December 2009 for a LoLo H<sub>2</sub>O<sub>2</sub> flow alarm (5.5 total hours).

All nine infiltration gallery sub-distribution cells are receiving GWETS effluent.

The combined treatment plant influent flow from Eastern Plume groundwater extraction wells EW-01, EW-02A, EW-04, and EW-05B averaged approximately 43 gpm through 31 December 2009.

Activities performed during December 2009 included:

- Performed routine cleaning, calibration, and equipment maintenance activities;
- Prepared and submitted monthly operations report;
- Performed Monthly Safety inspections of fire extinguishers and building equipment;
- Conducted monthly sampling;
- Installed Man-Down system in plant;
- Installed rough wiring and piping for EW-08 & 09;
- Kept walkways clean of snow and sanded as needed;
- Serviced plant back-up generator;
- Tested fire alarm (passed); and
- Installed pumps, motors, and piping for EW-08 & EW-09.

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I certify by my signature affixed that I have personally examined the information contained herein, and based on my inquiry of those individuals immediately responsible for obtaining and providing the information, I further certify that the information contained herein is true, accurate, and complete.



Robert Phinney  
MEDEP Wastewater Operator No. 626

19 January 2010

Date

cc: BRAC PMO NE (P. Burgio)  
NAVFAC LANT (J. Wright, A. Van Dercook, B. Capito)  
USEPA (M. Daly)  
MEDEP (C. Sait, C. Evans)  
NASB (L. Joy, M. Fagan)  
ECC (A. Easterday, G. Calderone, M. Johanson, C. Varner, C. Guido)  
Lepage Environmental (C. Lepage)  
TtNUS (L. Klink, J. Orient)  
H&S (J. Parrett, E. King)

**Table 1**  
**Summary of Treatment System**  
**Process Flow and In-Plant Water Quality**  
**Groundwater Extraction and Treatment System (Building 50)**  
**Naval Air Station Brunswick, Maine**

INDEX	THREATENED	THREATENED	THREATENED
1	0.25	65,153	6.59
2	0.23	71,928	6.63
3	0.53	53,259	6.60
4	0.1	65,199	6.63
5	(a)	65,199	6.47
6	(a)	65,199	6.50
7	0.27	63,801	6.68
8	0.3	73,665	6.65
9	0.1	55,925	6.66
10	0.07	62,830	6.69
11	0.39	64,360	6.68
12	(a)	64,360	6.49
13	(a)	64,360	6.50
14	0.34	54,328	6.67
15	0.25	54,922	6.68
16	0.01	53,868	6.68
17	0.01	52,462	6.67
18	0.14	59,974	6.63
19	(a)	59,974	6.43
20	(a)	59,974	6.49
21	0.12	53,220	6.35
22	0.1	54,373	6.56
23	0.16	58,693	6.57
24	0.15	52,637	6.55
25	(a)	52,637	6.53
26	(a)	52,637	6.47
27	(a)	52,637	6.49
28	0.06	53,276	6.57
29	0.11	53,554	6.56
30	0.1	50,339	6.56
31	0.18	46,065	6.60

Monthly Process Flow Total (gallons)  
1,810,808

**Notes:**  
(a) Weekend/Holiday/Operator not present.  
(b) Based in most recent quarterly composite influent VOC sample.  
(c) Daily flow estimated on pump run times and flow history.

**Table 2**  
**Summary of Extraction Well Performance**  
**Groundwater Extraction and Treatment System (Building 50)**  
**Naval Air Station Brunswick, Maine**

December 2009 Day	Flow Rate GPM	Run Time Hours	Total Pumpage Gallons									
2	10.0	23.0	13800.0	16.0	23.0	22080.0	19.0	23.0	26220.0	16.0	23.0	22080.0
4	10.0	23.5	14070.0	16.0	23.5	22560.0	19.0	23.5	26790.0	16.0	23.5	22560.0
6	10.0	24.0	14385.8	16.0	24.0	23017.3	19.0	24.0	27333.1	16.0	24.0	23017.3
8	10.0	24.0	14390.2	16.0	24.0	23024.3	19.0	24.0	27341.3	16.0	24.0	23024.3
10	10.0	24.0	14390.0	16.0	24.0	23023.7	18.0	24.0	25902.0	16.0	24.0	23024.0
12	10.0	24.0	14390.0	16.0	24.0	23024.0	18.0	24.0	25902.0	16.0	24.0	23024.3
14	10.0	24.0	14390.0	16.0	24.0	23024.0	19.0	24.0	27341.0	16.0	24.0	23024.3
16	10.0	24.0	14400.0	16.0	24.0	23040.0	19.0	24.0	27360.0	16.0	24.0	23040.0
18	10.0	24.0	14390.2	16.0	24.0	23024.3	19.0	24.0	27341.3	16.0	24.0	23040.0
20	10.0	24.0	14400.0	16.0	24.0	23040.0	19.0	24.0	27360.0	16.0	24.0	23040.0
22	10.0	23.0	13800.0	16.0	23.0	22080.0	18.0	23.0	24840.0	16.0	23.0	22080.0
24	10.0	24.0	14390.3	15.0	24.0	21585.5	19.0	24.0	27341.6	16.0	24.0	23024.5
26	10.0	24.0	14373.7	16.0	24.0	22997.6	19.0	24.0	27310.0	16.0	24.0	23040.0
28	10.0	24.0	14390.2	16.0	24.0	23024.3	18.0	24.0	25902.3	16.0	24.0	23040.0
30	10.0	22.0	13200.0	16.0	22.0	21120.0	18.0	22.0	23760.0	16.0	22.0	21120.0
<b>TOTALS</b>		<b>735.57</b>	<b>441,340</b>		<b>735.62</b>	<b>704,752</b>		<b>735.62</b>	<b>823,070</b>		<b>735.74</b>	<b>706,314</b>
<b>EXPECTED WELL GPM</b>	10.0			15.0			25.0			16.0		
<b>EFFECTIVENESS OF WELL</b>			<b>98.9%</b>			<b>105.2%</b>			<b>73.8%</b>			<b>98.9%</b>
<b>MONTH AVERAGE GPM</b>	10.0			16.0			18.6			16.0		

**PERFORMANCE BASED ON WELL SYSTEM CAPACITY (all four wells): 94.2%**

**Table 3**  
**Summary of Analytical Results**  
**Treatment System Influent and Effluent**  
**Samples Collected on 1 December 2009**  
**Groundwater Extraction and Treatment System (Building 50)**  
**Naval Air Station Brunswick, Maine**

Parameter <sup>(a)</sup>	Method	Result	Treatment Plant Duplicate	Discharge Limit <sup>(b)</sup>	MEG (ppb)	MCL (ppb)
<b>EASTERN PLUME INFLUENT</b>						
1,1,1-Trichloroethane	EPA8260B	NS	NR	NA	200	200
1,1-Dichloroethane	EPA8260B	NS	NR	NA	70	NA
1,1-Dichloroethene	EPA8260B	NS	NR	NA	0.6	7
<i>cis</i> -1,2-Dichloroethene	EPA8260B	NS	NR	NA	70	70
<i>trans</i> -1,2-Dichloroethene	EPA8260B	NS	NR	NA	140	100
Methylene chloride	EPA8260B	NS	NR	NA	47	5
Tetrachloroethene	EPA8260B	NS	NR	NA	7	5
Trichloroethene	EPA8260B	NS	NR	NA	32	5
Vinyl chloride	EPA8260B	NS	NR	NA	0.2	2
1,4-Dioxane	EPA8260B/SIM	48.7	NR	NA	32	NA
Arsenic, Total	EPA6010B	NS	NR	NA	10	10
Iron, Total	EPA6010B	NS	NR	NA	NA	NA
Manganese, Total	EPA6010B	NS	NR	NA	500	*300
<b>TREATMENT PLANT EFFLUENT</b>						
Arsenic, Total	EPA6010B	NS	NS	50	10	10
Chromium, Total	EPA6010B	NS	NS	10	40	100
Cyanide, Total	EPA9010	NS	NS	34	140	200
Nickel, Total	EPA6010B	NS	NS	78	140	*100
Lead, Total	EPA6010B	NS	NS	15	10	15
Zinc, Total	EPA6010B	NS	NS	200	2000	*2000
Iron, Total	EPA6010B	NS	NS	NA	NA	NA
Manganese, Total	EPA6010B	NS	NS	NA	500	*300
1,1,1-Trichloroethane	EPA8260B	NS	NS	750	200	200
1,1-Dichloroethane	EPA8260B	NS	NS	94	70	NA
1,1-Dichloroethene	EPA8260B	NS	NS	7	0.6	7
<i>cis</i> -1,2-Dichloroethene	EPA8260B	NS	NS	70 <sup>(c)</sup>	70	70
<i>trans</i> -1,2-Dichloroethene	EPA8260B	NS	NS	--	140	100
Methylene chloride	EPA8260B	NS	NS	5	47	5
Tetrachloroethene	EPA8260B	NS	NS	5	47	5
Trichloroethene	EPA8260B	NS	NS	5	32	5
Vinyl chloride	EPA8260B	NS	NS	2	0.2	2
1,4-Dioxane	EPA8260B/SIM	< 1.0 U	< 1.0 U	NA	32	NA

(a) Results reported in µg/L.

(b) Maximum effluent discharge limit established by Brunswick Sewer District Draft Permit (Dec. 1994).

(c) Combined 1, 2-dichloroethane (*cis* and *trans*) not to exceed 70 µg/L.

\* - EPA Health Advisory

NOTE: EPA = U.S. Environmental Protection Agency.

D = Analysis conducted at a secondary dilution factor.

NR = Analysis not required.

NA = Discharge limit applicable to treatment plant effluent only.

B = Compound also detected in associated method blank.

NS = Not Sampled

SIM = Selective Ion Monitoring

U = Not detected. Sample quantitation limits are shown as (< \_\_\_ U).

Trip blank (TP-172-QT1) results for EPA Method 8260B/SIM were non-detect.