



## FOSTER WHEELER ENVIRONMENTAL CORPORATION

September 26, 1997  
File #: 1284-0018-97-0774

Commanding Officer  
Northern Division  
Naval Facilities Engineering Command  
10 Industrial Highway, Mail Stop #82  
Lester, PA 19113  
Attn.: Code 4023 (S. Lehman)

Subject: US NAVY CONTRACT NO. N62472-94-D-0398  
DELIVERY ORDER NO. 0018-06, NAWC WARMINSTER, PA  
August, 1997 GROUNDWATER PUMP AND TREAT SYSTEM MONTHLY REPORT

Dear Mr. Lehman:

This letter report provides the results of the August, 1997 sampling and the activities performed during the reporting period from August 1, 1997 through August 31, 1997. The groundwater treatment plant operated 99.9% of the reporting period.

As of August 31, 1997 (2400 hours) a total of 971,847 gallons of groundwater had been treated during the period from August 1, 1997 through August 31, 1997. This brings the total amount of water treated to 20,694,333 gallons (August 31, 1997). During August, 1997 the average effluent flowrate was 21.77 gpm.

The process water was sampled on August 13, 1997, the results of this sampling are presented in the attached table. This data shows that no discharge limits were exceeded during the August, 1997 reporting period.

There were no alarm or system induced shutdowns during the reporting period, however, there was one operator induced shutdown on the following date

1. August 25, 1997 (0930-1030)- Performed disk cleaning and defragmentation.

In addition, the following maintenance was performed on the groundwater treatment system during August, 1997:

1. Cleaned sandfilter air injection tube, to return air flow back to manufacturer specifications.
2. Returned Hayes flowmeter to manufacturer for repair, meter still under warranty.
3. Reduced EW-19 flow rate from 11 gpm to 8 gpm as directed by the Navy.
4. Reduced EW-20 flow rate from 7 gpm to 5 gpm as directed by the Navy.
5. Operated Flash Tank Mixer and Flocculation Tank Mixer.
6. Ran all chemical feed systems with water. (Chemicals are currently not being used in the treatment system).
7. Continued repair of concrete floor cracks.

The Tetrachloroethene concentration in the groundwater influent to the system was 5.5 ug/l, with a total of 0.045 pounds of Tetrachloroethene removed during the August, 1997 reporting period. The total amount of Tetrachloroethene removed through August 31, 1997 is 1.947 pounds.

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| Calculation:   |
| Average PCE concentration = 5.5 ug/l   |
| Average water flowrate for month of August, 1997 = 21.77 gpm   |
| Pounds of PCE removed = (21.77 gpm)(44,640 min)(5.5 ug/l)(3.785 l/gal)<br>(1 g / 1,000,000 ug)(1 lb / 454 g) = 0.045 pounds of PCE |

The scheduled dates which Foster Wheeler Environmental's operator will be on-site during the month of October, 1997 are presented in the attached schedule.

If you should have any questions or comments regarding the August, 1997 reporting period, please feel free to contact either me at 215-702-4007 or Dave DiCesare at 215-702-4074.

Sincerely,



Carl Dannenberger, CHMM  
Project Manager



David J. DiCesare  
Project Engineer

- cc: L. Monaco (USEPA)  
T. Ames (CSO)  
N. Crickman (PADEP)  
M. Hunter (CSO)  
E. Beatty (ROICC)  
D. Kennedy (PADEP)  
D. Ostrauskas (USEPA)  
A. Wills (Bucks Co. Dept. of Health)  
D. Fennimore (Earth Data Inc.)  
A. Holcomb (FWENC)  
File



**Foster Wheeler Environmental Corporation  
NAWC, Warminster Groundwater Pump and Treatment Plant  
Operator Schedule for October, 1997**

Wednesday, October 1, 1997  
Monday, October 6, 1997  
Wednesday, October 8, 1997  
Monday, October 13, 1997  
Wednesday, October 15, 1997  
Monday, October 20, 1997  
Wednesday, October 22, 1997  
Monday, October 27, 1997  
Wednesday, October 29, 1997



Foster Wheeler Environmental Corporation  
 NAWC, Warminster Groundwater Pump and Treatment Plant  
 Sampling Results - August, 1997

| FWENC - Sample ID                                 |              | DO-0018-06-001  | DO-0018-06-002             | DO-0018-06-003                    | DO-0018-06-004       | DO-0018-06-005        | DO-0018-06-006            | DO-0018-06-007           |                       |
|---|--------------|-----------------|----------------------------|-----------------------------------|----------------------|-----------------------|---------------------------|--------------------------|-----------------------|
| Sample Location                                   |              | Area C Influent | Equalization Tank Effluent | Inclined Plate Separator Effluent | Sand Filter Effluent | Air Stripper Effluent | Lead Carbon Unit Effluent | Treatment Plant Effluent | Discharge Limits      |
| Sample Date                                       | Method       | 13-Aug-97       | 13-Aug-97                  | 13-Aug-97                         | 13-Aug-97            | 13-Aug-97             | 13-Aug-97                 | 13-Aug-97                | Instantaneous Maximum |
| Total Discharge (gal.) thru 8/31/97               |              |                 |                            |                                   |                      |                       |                           | 20,694,333               |                       |
| Average Discharge Flowrate (gpm) for August, 1997 |              |                 |                            |                                   |                      |                       |                           | 21.77                    |                       |
| pH  | EPA 150.1    | 7.1             | 7.6                        | N/A                               | 7.6                  | N/A                   | N/A                       | 7.9                      | 6.0-9.0               |
| Total Suspended Solids (mg/l)                     | EPA 160.2    | <1              | <1                         | 1                                 | <1                   | N/A                   | N/A                       | <1                       | 75 mg/l               |
| Total Organic Carbon (mg/l)                       | 415.1/EPA600 | N/A             | BDL                        | N/A                               | N/A                  | N/A                   | BDL                       | BDL                      | -                     |
| Carbon Tetrachloride                              | EPA 8260A    | N/A             | BDL                        | N/A                               | N/A                  | BDL                   | BDL                       | BDL                      | 4.2 ug/l              |
| Tetrachloroethene                                 | EPA 8260A    | N/A             | 5.5                        | N/A                               | N/A                  | BDL                   | BDL                       | BDL                      | 10.0 ug/l             |
| Trichloroethene                                   | EPA 8260A    | N/A             | BDL                        | N/A                               | N/A                  | BDL                   | BDL                       | BDL                      | 42.5 ug/l             |
| Vinyl Chloride                                    | EPA 8260A    | N/A             | BDL                        | N/A                               | N/A                  | BDL                   | BDL                       | BDL                      | 0.27 ug/l             |
| 1,1-Dichloroethene                                | EPA 8260A    | N/A             | BDL                        | N/A                               | N/A                  | BDL                   | BDL                       | BDL                      | 0.85 ug/l             |
| Cadmium   | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 4.0 ug/l              |
| Copper  | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 24.0 ug/l             |
| Lead  | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 11.0 ug/l             |
| Zinc  | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 157 ug/l              |
| Arsenic   | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 0.27 ug/l             |
| Aluminum  | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 1875 ug/l             |
| Total Iron  | SW846        | N/A             | 141                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 3600 ug/l             |
| Total Manganese                                   | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 3750 ug/l             |
| Mercury   | SW846        | N/A             | BDL                        | N/A                               | BDL                  | N/A                   | N/A                       | BDL                      | 0.045 ug/l            |
| Total Cyanide (mg/l)                              | SW846 9010A  | N/A             | <0.02                      | N/A                               | <0.02                | N/A                   | N/A                       | <0.02                    | -                     |
| Chromium (+6) - (mg/l)                            | SW846 7196   | N/A             | <0.01                      | N/A                               | <0.01                | N/A                   | N/A                       | <0.01                    | 23.2 ug/l             |

NOTES:

1 - All concentrations are in ug/l unless otherwise noted.  
 N/A - indicates compound was not analyzed for.  
 BDL - Below Detection Limits