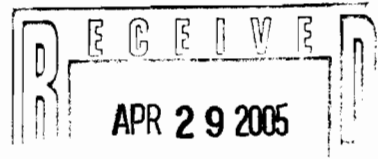




TETRA TECH FW, INC.



27 April 2005  
RAC II-2005-056

Ms. Sharon Trocher  
Work Assignment Manager  
U.S. Environmental Protection Agency  
290 Broadway, 20<sup>th</sup> Floor  
New York, NY 10007-1866

**SUBJECT: USEPA RAC II CONTRACT NUMBER 68-W-98-214  
WORK ASSIGNMENT NUMBER 109-RALR-0238  
VESTAL WATER SUPPLY WELL, OPERABLE UNIT 1  
NOVEMBER 2004 PERFORMANCE MONITORING REPORT**

Dear Ms. Trocher:

I am pleased to provide the November 2004 Monthly Performance Monitoring Report for the Vestal Water Supply Well treatment facility.

#### **A. Monthly Operations**

The Vestal Well 1-1 treatment system was shut down on 29 June 2004 due to a problem with the well pump. At the time the system was shut down, well pump flow was pulsating and ranged from 0 to 30%. The system was shut down to protect it from the damage that may occur to various treatment system components as a result of the large fluctuations in flow.

During the course of diagnosis, Tetra Tech FW, Inc. (TtFW) identified several factors that may have caused the fluctuating flow, as well as several areas within the treatment system where improvements could be made to optimize system performance. The following repairs/improvements to the treatment system were implemented:

- Replaced burnt out blow-off valve actuator;
- Replaced blow-off valve seals;
- Rewired terminal blocks and limit switches to new actuator schematics;
- Adjusted limit switches;
- Corrected wiring to actuator blow-off valve;
- Adjusted permissive settings and timers set in the program logic controller (PLC);



1000 The American Road, Morris Plains, NJ 07950  
Tel: 973.630.8000 Fax: 973.630.8025  
www.ttfwi.com

- Adjusted limit switches in discharge valve actuator and signal to PLC;
- Replaced clear well level probes;
- Cleaned calcium deposits from the screen covering the clear well overflow pipe; and
- Acquired material to paint the pump house. Preparatory work was completed but rain and cold weather prevented painting. The painting will be completed as soon as the weather permits.

TtFW restarted the treatment system in manual mode on 29 October 2004.

**B. Operational Data**

The following table presents operational data for the year 2004, arranged by month:

Month	Operating Days	Average flow Meter %	Average flow rate (gpm)	Amount of groundwater treated (mg)
January	31	50	575	25.7
February	29	50	575	24
March	31	45	517.5	22.4
April	30	45	517.5	22.4
May	31	40	460	20.5
June	29	40	460	19.2
July	0	0	0	0
August	0	0	0	0
September	0	0	0	0
October	2	50	575	1.7
November	30	50	575	24.8
Volume of groundwater treated for 2004				160.7
Volume of groundwater treated for the OU-1				258.1

gpm - gallons per minute  
 mg - millions of gallons

**C. Comparison of Influent and Effluent Concentrations with Discharge Criteria**

The treatment plant influent and effluent analytical data received from the EPA-DESA laboratory for the month of November 2004 are included in Attachment 1. A summary of the data for the compounds detected in the plant influent and effluent is as follows:

Compound	Discharge Criteria (ug/L)	Influent Concentration (ug/L)												Effluent Concentration (ug/L) Nov
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Vinyl Chloride	2	4.8	3.4	3.0	3.1	3.9	3.0	NS	NS	NS	NS	10		0.5 U
Chloroethane		1.0	0.6	0.5	0.6	5.0 U	0.7	NS	NS	NS	NS	1.2		0.5 U
1,1-Dichloroethene*	5	11	8.7	6.3	8.0	7.1	8.1	NS	NS	NS	NS	18		0.5 U
1,1,2 Trichloro-1,2,2-Trifluoroethane		3.6	2.7	1.8	2.4	1.9	2.2	NS	NS	NS	NS	4.3		0.5 U
Trans 1,2-Dichloroethene*	5	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.5 U	NS	NS	NS	NS	0.5U		0.5 U
Methyl Tert-Butyl Ether		3.9	4.1	3.6	3.2	3.2	3.0	NS	NS	NS	NS	6.0		2.8
1,1-Dichloroethane	5	23	20	15	17	15	16	NS	NS	NS	NS	32		2.8
Cis-1,2-Dichloroethene*	5	56	49	37	42	41	44	NS	NS	NS	NS	70		8.1
Chloroform	7	0.5 U	0.5 U	0.5U	0.5U	0.5U	0.5 U	NS	NS	NS	NS	0.5U		0.5 U
1,1,1-Trichloroethane*	5	120	110	81	93	83	100	NS	NS	NS	NS	170		7.1
Trichloroethene*	5	46	43	33	39	34	36	NS	NS	NS	NS	50		3.1
Total Volatile Organics*	100	269.3	241.5	181.2	208.3	189.1	213	NS	NS	NS	NS	361.5		23.9

Note:

ug/L = micrograms per liter

\* = Site Contaminant of Concern

U = Below Reporting Limit

NS = Not Sampled

#### D. Next Month's Activities

The following activities are planned for December 2004:

- Paint pump house, weather permitting; and
- Perform monthly performance monitoring sampling.

#### E. Summary and Recommendations

Based on the treatment plant influent and effluent data summarized above, it can be concluded that the treated water continues to meet the discharge limits. Please feel free to contact me at (973) 630-8412 if you should have any questions.

Sincerely,



Wendy DeMaio  
Project Manager

Attachment

cc: M. Dunham (NYSDEC)

**Attachment 1**

**Case Narrative:**

**Vestal 1-1. #04110015**

The Laboratory has met all data quality objectives, e.g., Target Reporting Limits, Accuracy and Precision, established for this project except were noted below.

**Comment(s):**

None

**Reporting Limit(s):**

The Laboratory was able to achieve the Contract Required Quantitation Limits (CRQLs) for each analyte requested.

**Method(s):**

Low Level Volatile Organic Analysis, ESAT-SOP-132 (GC/MS Method).

Approval: J. B. He Date: 1-21-05



U.S. Environmental Protection Agency  
Region 2 Laboratory

**Data Report: VESTAL WELL**

**Project Number: 04110015**

Program: Y206E

Project Leader: L. Arabia

Remark Codes	Explanation
U	THE ANALYTE WAS NOT DETECTED AT OR ABOVE THE REPORTING LIMIT.
J	THE IDENTIFICATION OF THE ANALYTE IS ACCEPTABLE; THE REPORTED VALUE IS AN ESTIMATE.
UJ	THE ANALYTE WAS NOT DETECTED AT OR ABOVE THE REPORTING LIMIT. THE REPORTING LIMIT IS AN ESTIMATE.
N	THERE IS PRESUMPTIVE EVIDENCE THAT THE ANALYTE IS PRESENT; THE ANALYTE IS REPORTED AS A TENTATIVE IDENTIFICATION.
NJ	THERE IS PRESUMPTIVE EVIDENCE THAT THE ANALYTE IS PRESENT; THE ANALYTE IS REPORTED AS A TENTATIVE IDENTIFICATION. THE REPORTED VALUE IS AN ESTIMATE.
R	THE PRESENCE OR ABSENCE OF THE ANALYTE CANNOT BE DETERMINED FROM THE DATA DUE TO SEVERE QUALITY CONTROL PROBLEMS. THE DATA ARE REJECTED AND CONSIDERED UNUSABLE.
K	THE IDENTIFICATION OF THE ANALYTE IS ACCEPTABLE; THE REPORTED VALUE MAY BE BIASED HIGH. THE ACTUAL VALUE IS EXPECTED TO BE LESS THAN THE REPORTED VALUE.
L	THE IDENTIFICATION OF THE ANALYTE IS ACCEPTABLE; THE REPORTED VALUE MAY BE BIASED LOW. THE ACTUAL VALUE IS EXPECTED TO BE GREATER THAN THE REPORTED VALUE.
NV	NOT VALIDATED
INC	RESULT NOT ENTERED



U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: VESTAL WELL

Project Number: 04110015

\*Sorted By Sample ID

AF06444 Field/Station ID: INFLUENT  
Matrix: Aqueous

Date Received: 11/9/2004

Sample Description:

Analysis Type: VOA LOW LEVEL GCMS DRINK WTR

CAS Number	Analyte Name	Result	Remark Codes	Units
75-43-4	DICHLORODIFLUOROMETHANE	---	0.50U	ug/L
000074873	CHLOROMETHANE	---	0.50U	ug/L
000075014	VINYL CHLORIDE	10		ug/L
000074839	BROMOMETHANE	---	0.50U	ug/L
000075003	CHLOROETHANE	1.2		ug/L
000075694	TRICHLOROFLUOROMETHANE	---	0.50U	ug/L
000075354	1,1-DICHLOROETHENE	18		ug/L
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.3		ug/L
000075150	CARBON DISULFIDE	---	0.50U	ug/L
000067641	ACETONE	---	1.0U	ug/L
79-20-9	METHYL ACETATE	---	0.50U	ug/L
000075092	METHYLENE CHLORIDE	---	1.0U	ug/L
000156605	TRANS-1,2-DICHLOROETHENE	---	0.50U	ug/L
001634044	METHYL TERT-BUTYL ETHER	6.0		ug/L
000075343	1,1-DICHLOROETHANE	32		ug/L
000156592	CIS-1,2-DICHLOROETHENE	70		ug/L
594-20-7	2,2-DICHLOROPROPANE	---	0.50U	ug/L
000078933	2-BUTANONE	---	1.0U	ug/L
000074975	BROMOCHLOROMETHANE	---	0.50U	ug/L
000067663	CHLOROFORM	---	0.50U	ug/L
71-55-6	1,1,1-TRICHLOROETHANE	170		ug/L
110-82-7	CYCLOHEXANE	---	0.50U	ug/L
000056235	CARBON TETRACHLORIDE	---	0.50U	ug/L
000563586	1,1-DICHLOROPROPENE	---	0.50U	ug/L
000071432	BENZENE	---	0.50U	ug/L
000107062	1,2-DICHLOROETHANE	---	0.50U	ug/L
025323891	TRICHLOROETHENE	50		ug/L
108-87-2	METHYLCYCLOHEXANE	---	0.50U	ug/L
000078875	1,2-DICHLOROPROPANE	---	0.50U	ug/L
000074953	DIBROMOMETHANE	---	0.50U	ug/L
000075274	BROMODICHLOROMETHANE	---	0.50U	ug/L
010061015	CIS-1,3-DICHLOROPROPENE	---	0.50U	ug/L
000108101	4-METHYL-2-PENTANONE	---	1.0U	ug/L
000108883	TOLUENE	---	0.50U	ug/L
010061026	TRANS-1,3-DICHLOROPROPENE	---	0.50U	ug/L
000079005	1,1,2-TRICHLOROETHANE	---	0.50U	ug/L
000127184	TETRACHLOROETHENE	---	0.50U	ug/L
000142289	1,3-DICHLOROPROPANE	---	0.50U	ug/L
000124481	DIBROMOCHLOROMETHANE	---	0.50U	ug/L
000106934	1,2-DIBROMOETHANE	---	0.50U	ug/L
000591786	2-HEXANONE	---	1.0U	ug/L
000108907	CHLOROBENZENE	---	0.50U	ug/L

Refer to Page 1 for an explanation of Remark Codes

Report Date: 1/13/2005 12:07PM

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U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: VESTAL WELL

Project Number: 04110015

\*Sorted By Sample ID

AF06444 Field/Station ID: INFLUENT  
Matrix: Aqueous

Date Received: 11/9/2004

Sample Description:

Analysis Type: VOA LOW LEVEL GCMS DRINK WTR

CAS Number	Analyte Name	Result	Remark Codes	Units
000630206	1,1,1,2-TETRACHLOROETHANE	---	0.50U	ug/L
100-41-4	ETHYLBENZENE	---	0.50U	ug/L
001330207	M/P-XYLENE	---	0.50U	ug/L
000095476	O-XYLENE	---	0.50U	ug/L
000100425	STYRENE	---	0.50U	ug/L
000075252	BROMOFORM	---	0.50U	ug/L
000098828	ISOPROPYLBENZENE	---	0.50U	ug/L
000108861	BROMOBENZENE	---	0.50U	ug/L
000096184	1,2,3-TRICHLOROPROPANE	---	0.50U	ug/L
000079345	1,1,2,2-TETRACHLOROETHANE	---	0.50U	ug/L
000103651	N-PROPYLBENZENE	---	0.50U	ug/L
000095498	2-CHLOROTOLUENE	---	0.50U	ug/L
106-43-4	4-CHLOROTOLUENE	---	0.50U	ug/L
000108678	1,3,5-TRIMETHYLBENZENE	---	0.50U	ug/L
000098066	TERT-BUTYLBENZENE	---	0.50U	ug/L
000095636	1,2,4-TRIMETHYLBENZENE	---	0.50U	ug/L
135-98-8	SEC-BUTYLBENZENE	---	0.50U	ug/L
000541731	1,3-DICHLOROBENZENE	---	0.50U	ug/L
000106467	1,4-DICHLOROBENZENE	---	0.50U	ug/L
000095501	1,2-DICHLOROBENZENE	---	0.50U	ug/L
000099876	4-ISOPROPYLTOLUENE	---	0.50U	ug/L
000104518	N-BUTYLBENZENE	---	0.50U	ug/L
000096128	1,2-DIBROMO-3-CHLOROPROPANE	---	0.50U	ug/L
000120821	1,2,4-TRICHLOROBENZENE	---	0.50U	ug/L
87-68-3	HEXACHLOROBUTADIENE	---	0.50U	ug/L
000091203	NAPHTHALENE	---	0.50U	ug/L
000087616	1,2,3-TRICHLOROBENZENE	---	0.50U	ug/L
	TOTAL XYLENES	---	0.50U	ug/L

AF06445 Field/Station ID: EFFLUENT  
Matrix: Aqueous

Date Received: 11/9/2004

Sample Description:





U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: VESTAL WELL

Project Number: 04110015

\*Sorted By Sample ID

AF06445 Field/Station ID: EFFLUENT  
Matrix: Aqueous

Date Received: 11/9/2004

Sample Description:

Analysis Type: VOA LOW LEVEL GCMS DRINK WTR

CAS Number	Analyte Name	Result	Remark Codes	Units
75-43-4	DICHLORODIFLUOROMETHANE	---	0.50U	ug/L
000074873	CHLOROMETHANE	---	0.50U	ug/L
000075014	VINYL CHLORIDE	---	0.50U	ug/L
000074839	BROMOMETHANE	---	0.50U	ug/L
000075003	CHLOROETHANE	---	0.50U	ug/L
000075694	TRICHLOROFLUOROMETHANE	---	0.50U	ug/L
000075354	1,1-DICHLOROETHENE	---	0.50U	ug/L
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	---	0.50U	ug/L
000075150	CARBON DISULFIDE	---	0.50U	ug/L
000067641	ACETONE	---	1.0U	ug/L
79-20-9	METHYL ACETATE	---	0.50U	ug/L
000075092	METHYLENE CHLORIDE	---	1.0U	ug/L
000156605	TRANS-1,2-DICHLOROETHENE	---	0.50U	ug/L
001634044	METHYL TERT-BUTYL ETHER	2.8		ug/L
000075343	1,1-DICHLOROETHANE	2.8		ug/L
000156592	CIS-1,2-DICHLOROETHENE	8.1		ug/L
594-20-7	2,2-DICHLOROPROPANE	---	0.50U	ug/L
000078933	2-BUTANONE	---	1.0U	ug/L
000074975	BROMOCHLOROMETHANE	---	0.50U	ug/L
000067663	CHLOROFORM	---	0.50U	ug/L
71-55-6	1,1,1-TRICHLOROETHANE	7.1		ug/L
110-82-7	CYCLOHEXANE	---	0.50U	ug/L
000056235	CARBON TETRACHLORIDE	---	0.50U	ug/L
000563586	1,1-DICHLOROPROPENE	---	0.50U	ug/L
000071432	BENZENE	---	0.50U	ug/L
000107062	1,2-DICHLOROETHANE	---	0.50U	ug/L
025323891	TRICHLOROETHENE	3.1		ug/L
108-87-2	METHYLCYCLOHEXANE	---	0.50U	ug/L
000078875	1,2-DICHLOROPROPANE	---	0.50U	ug/L
000074953	DIBROMOMETHANE	---	0.50U	ug/L
000075274	BROMODICHLOROMETHANE	---	0.50U	ug/L
010061015	CIS-1,3-DICHLOROPROPENE	---	0.50U	ug/L
000108101	4-METHYL-2-PENTANONE	---	1.0U	ug/L
000108883	TOLUENE	---	0.50U	ug/L
010061026	TRANS-1,3-DICHLOROPROPENE	---	0.50U	ug/L
000079005	1,1,2-TRICHLOROETHANE	---	0.50U	ug/L
000127184	TETRACHLOROETHENE	---	0.50U	ug/L
000142289	1,3-DICHLOROPROPANE	---	0.50U	ug/L

Refer to Page 1 for an explanation of Remark Codes

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U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: VESTAL WELL

Project Number: 04110015

\*Sorted By Sample ID

AF06445 Field/Station ID: EFFLUENT  
Matrix: Aqueous

Date Received: 11/9/2004

Sample Description:

Analysis Type: VOA LOW LEVEL GCMS DRINK WTR

CAS Number	Analyte Name	Result	Remark Codes	Units
000124481	DIBROMOCHLOROMETHANE	---	0.50U	ug/L
000106934	1,2-DIBROMOETHANE	---	0.50U	ug/L
000591786	2-HEXANONE	---	1.0U	ug/L
000108907	CHLOROBENZENE	---	0.50U	ug/L
000630206	1,1,1,2-TETRACHLOROETHANE	---	0.50U	ug/L
100-41-4	ETHYLBENZENE	---	0.50U	ug/L
001330207	M/P-XYLENE	---	0.50U	ug/L
000095476	O-XYLENE	---	0.50U	ug/L
000100425	STYRENE	---	0.50U	ug/L
000075252	BROMOFORM	---	0.50U	ug/L
000098828	ISOPROPYLBENZENE	---	0.50U	ug/L
000108861	BROMOBENZENE	---	0.50U	ug/L
000096184	1,2,3-TRICHLOROPROPANE	---	0.50U	ug/L
000079345	1,1,1,2-TETRACHLOROETHANE	---	0.50U	ug/L
000103651	N-PROPYLBENZENE	---	0.50U	ug/L
000095498	2-CHLOROTOLUENE	---	0.50U	ug/L
106-43-4	4-CHLOROTOLUENE	---	0.50U	ug/L
000108678	1,3,5-TRIMETHYLBENZENE	---	0.50U	ug/L
000098066	TERT-BUTYLBENZENE	---	0.50U	ug/L
000095636	1,2,4-TRIMETHYLBENZENE	---	0.50U	ug/L
135-98-8	SEC-BUTYLBENZENE	---	0.50U	ug/L
000541731	1,3-DICHLOROBENZENE	---	0.50U	ug/L
000106467	1,4-DICHLOROBENZENE	---	0.50U	ug/L
000095501	1,2-DICHLOROBENZENE	---	0.50U	ug/L
000099876	4-ISOPROPYLTOLUENE	---	0.50U	ug/L
000104518	N-BUTYLBENZENE	---	0.50U	ug/L
000096128	1,2-DIBROMO-3-CHLOROPROPANE	---	0.50U	ug/L
000120821	1,2,4-TRICHLOROBENZENE	---	0.50U	ug/L
87-68-3	HEXACHLOROBUTADIENE	---	0.50U	ug/L
000091203	NAPHTHALENE	---	0.50U	ug/L
000087616	1,2,3-TRICHLOROBENZENE	---	0.50U	ug/L
	TOTAL XYLENES	---	0.50U	ug/L

Project Approval:

*J.R. Ben*

Date:

1-21-05

Refer to Page 1 for an explanation of Remark Codes

Report Date: 1/13/2005 12:07PM