

Transmitted Via E-Mail

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May 31, 2018

Robert Thibobeaux , Wisconsin Dept. Health Services, and
Dave Neste, Wisconsin Department of Natural Resources

Subject: Tyco Marinette Groundwater Contamination

Gentlemen:

I am writing in regards to the Tyco Marinette contamination of PFOA and PFOS within the City of Marinette. I am both a City resident and a former Mayor living east of the Tyco facility approximately one block west of the Bay of Green Bay and a block north of the University of Wisconsin-Marquette in an area known as Pine Beach. I recognize that the first concern of the City and the State has been the safety of potable drinking water which necessarily has focused on the City's municipal water supply and private wells. The issue I am addressing in this letter has to do with secondary or ancillary impacts of the contamination of groundwater to our community's health and well being.

I contacted my Alderperson, Mr. John Marx, with the question: "given that it is known that individual homeowners have sand-point wells in the City that they use to water their lawns and their vegetable gardens, shouldn't there be some type of warning to discontinue such activity unless they have been tested for PFOA and PFOS?" He forwarded my question to the State and received an e-mail answer from Disa Patel which he then forwarded to me. Included in this e-mail answer was an attachment of the "latest map" of the contamination testing dated 5/8/2018 (Figure 2) by ARCADIS. However, this map did not include much of the properties within the City of Marinette, which is my concern. I have found an earlier version of this map online at a Northwestern University site that is dated 3/2/2018. It shows more of the testing within the City and listed a location VAP-23. I then reviewed a "draft" map dated 1/3/2018 (Figure 1) that is in hard copy form and is in the possession of an area resident. I have attached camera copies of it with the e-mail sent with this letter.

Location VAP-23 is located on Shore Drive in the city near an alley between Garfield and Logan Avenues more than a mile from the Tyco facility where the contamination originated. The 1/3/2018 map shows significant PFOA contamination with a 44.3 reading at 6-10 feet and a 395 reading at 46-50 feet. The later greatly exceeds the HAL of 70 established by the EPA.

What is notably lacking in all of these testing maps is any testing done in the extensive wetland areas immediately east of the Tyco facility east of Pierce Avenue that extend virtually to the Bay of Green Bay,

or the major drainage ditch that runs to the north of the Tyco facility from Stearns Street past the High School and out to the bay within the campus of the University of Wisconsin-Marquette.

The Patel letter to Mr. Marx is crafted in such a way as to not state in any definitive terms whether watering lawns and vegetables with contaminated with PFOA/PFOS is a health hazard, but it seems to indicate at a minimum that it might be prudent to advise homeowners of the potential danger from sand-point wells.

After my review of the above, I respectfully request the following:

1. That additional testing locations within the City of Marinette be established to determine the ground water contamination potential for sand-point well users.
2. That additional testing locations within the City of Marinette be established to determine the contamination levels in the wetland areas east of the Tyco facility extending to the Bay of Green Bay.
3. That additional testing locations be established to determine the contamination levels in the drainage ditch that runs adjacent to the Tyco facility and discharges into the Bay of Green Bay at the campus of the University of Wisconsin-Marquette.
4. That the Bureau of Environmental and Occupational Health issue a health advisory warning to the City of Marinette and the Marinette Water Utility that the use of sand-point wells for watering lawns and vegetable gardens be discontinued until such time as contamination levels can be established and health risks can be assessed.
5. That testing of fish caught in the near Marinette area for PFOA and PFOS contamination be conducted to determine what, if any, potential hazards are presented if these chemicals are being discharged into the Bay of Green Bay.

Thank you for your help.

Sincerely,

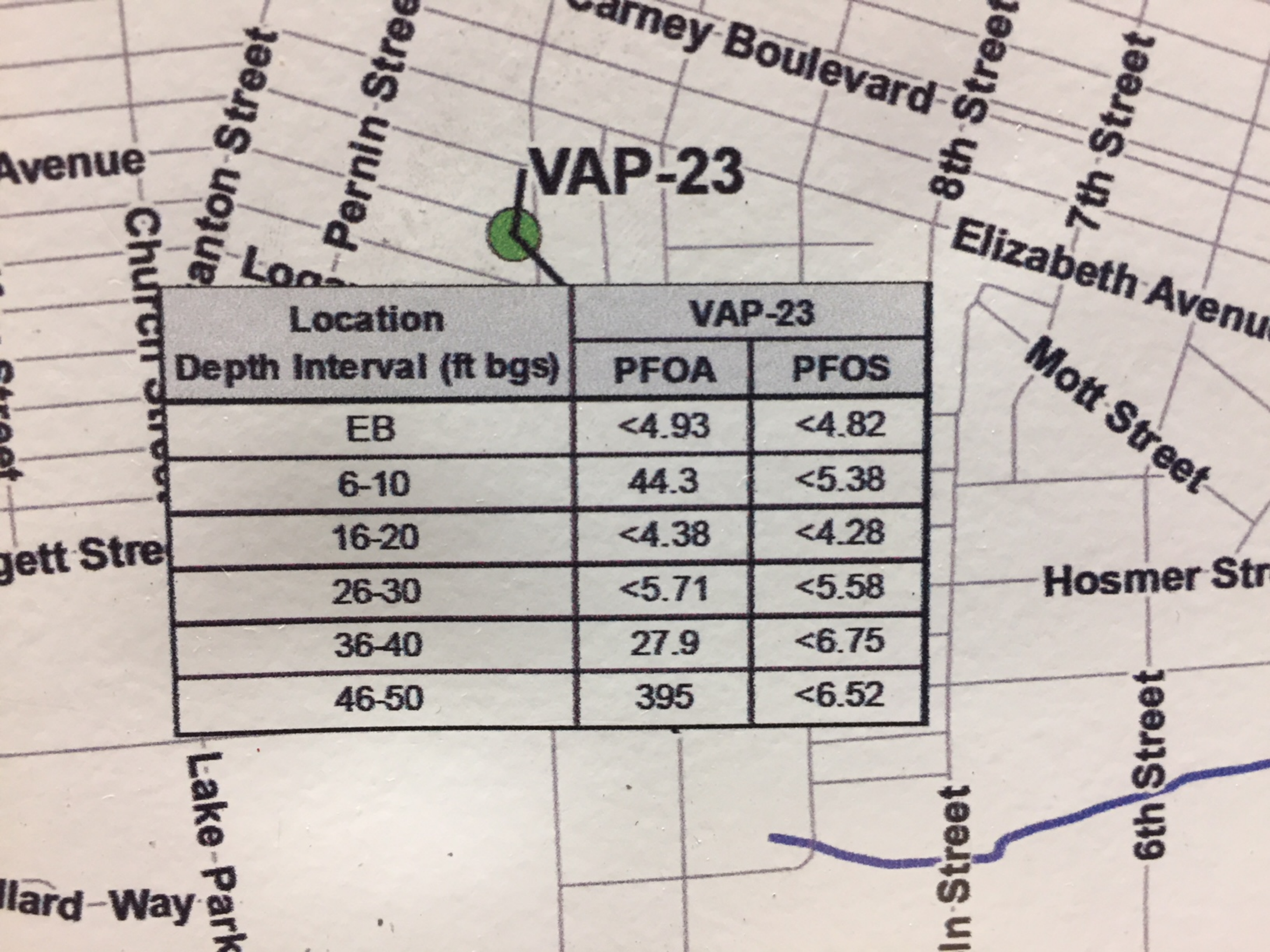
Doug Oitzinger

CC: Steve Genisot, Mayor
John Marx , Alderperson
Disa Patel

VAP-23



Location Depth Interval (ft bgs)	VAP-23	
	PFOA	PFOS
EB	<4.93	<4.82
6-10	44.3	<5.38
16-20	<4.38	<4.28
26-30	<5.71	<5.58
36-40	27.9	<6.75
46-50	395	<6.52



Depth Interval (ft bgs)	PFOA	PFOS
EB	<4.19	<1.68
4-8	10.2 J	4.38 J
14-18	16.3	<2.80
24-28	15.8	<3.21

Location			VAP-23	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<4.93	<4.82		
6-10	44.3	<5.38		
16-20	<4.38	<4.28		
26-30	<5.71	<5.58		
36-40	27.9	<6.75		
46-50	395	<6.52		

Location			VAP-14	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<3.83	<1.53		
4-8	8.07	<2.14		
14-18	<5.91	<2.36		

Location			PZ-1D	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
63.5-68.5	26.1	<1.51		

Location			VAP-24	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<5.60	<5.47		
6-10	16.6	<4.24		
16-20	9.37	<4.05		
26-30	23.9	<8.72		
36-40	24.3	<5.51		
46-50	18.0	<4.30		

Location			VAP-15	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
4-8	8.28	<1.58		
14-18	<5.25	<2.10		

Location			VAP-01	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<3.62	<1.45		
EB	<3.58	<1.43		
TB	<3.60	<1.44		
TB	<4.16	<1.66		
4-8	297	61.3		
10-14	291	97.9		
20-24	275	79.1		
30-34	313	<1.56		
40-44	<4.27	<1.71		
50-54	<7.47	<2.99		

Location			VAP-02	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	10.7	<5.40		
EB	<3.87	<1.55		
TB	<3.72	<1.49		
TB	<7.12	<2.85		
4-8	207	20.1		
14-18	24.5	<2.50		
24-28	5.5	<2.17		
34-38	15.1	<3.33		

Location			VAP-04	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<3.75	<1.50		
4-8	6.99	<1.87		
14-18	29.7	5.58		
24-28	266	<1.51		
24-28 (DUP)	588	<1.48		
34-38	68.1	<1.80		

Location			VAP-06	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<4.07	<1.63		
EB	<3.80	<1.52		
TB	8.46	<1.49		
4-8	6.51	2.05		
14-18	7.21	<1.53		
24-28	105	<2.67		
34-38	94.2	<2.35		
34-38 (DUP)	52.0	<1.54		

Location			VAP-03	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	27.7	22.5		
EB	<3.77	<1.51		
TB	<3.65	<1.46		
DI	<3.59	<1.44		
12-16	41.9	<1.60		
22-24	53.4	<3.56		
32-36	128	65.7		
32-36 (DUP)	151	62.9		
48-52	47.3	<2.69		
58-62	1100	553		

Location			SS-04	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
Surface	351	228		

Location			VAP-20	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
6-10	<4.36	<4.27		
16-20	<5.30	<5.18		
26-30	<6.99	<6.83		
36-40	<4.43	<4.33		
46-50	<4.75	<4.64		

Location			VAP-21	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	2.34 J	<4.56		
6-10	4.75	<4.60		
16-20	1140	<5.04		
26-30	48.5	<4.50		
36-40	538	<5.15		
46-50	25.9	<4.61		

Location			VAP-19	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
6-10	<7.35	<7.19		
16-20	10.3	<7.95		
26-30	262	6.53 J		
36-40	276	<4.10		

Location			VAP-07	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	36.2	<1.45		
6-10	48.3	<1.46		
16-20	49.3	<2.38		
31-35	51.9	5.00		
41-45	4.61 J	<1.99		

Location			VAP-08	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<3.90	<1.56		
8-12	42.3	6.53		
18-22	9.03	<1.84		
28-32	<3.90	<1.56		

Location			VAP-18	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<4.61	<4.51		
6-10	<4.69	<4.59		
6-10 DUP	<5.17	<5.05		
16-20	<6.26	<6.12		
26-30	61.3	<7.15		
36-40	61.3	<5.09		

Location			VAP-12	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<3.75	<1.50		
8-12	<8.39	<3.36		
18-22	<5.97	<2.39		
28-32	<7.58	<3.03		
38-42	<18.4	<7.36		

Location			VAP-17	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<4.13	<4.04		
16-20	<5.40	<5.28		
26-30	<9.30	<9.09		
36-40	<4.90	<4.79		
46-50	3.47 J	<7.97		
56-60	<4.37	<4.27		

Location			VAP-10	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<3.92	<1.57		
6-10	<7.02	<2.81		
16-20	<4.07	<1.63		
26-30	<4.46	<1.78		
36-40	<5.76	<2.30		
46-50	<3.82	<1.53		

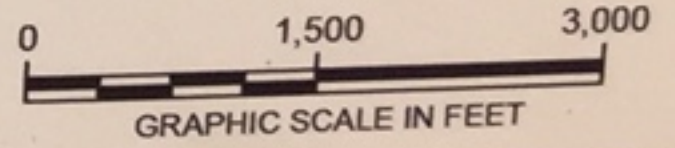
Location			VAP-11	
Depth Interval (ft bgs)	PFOA	PFOS	PFOA	PFOS
EB	<3.65	<1.46		
6-10	<3.64	<1.46		
16-20	<4.08	<1.63		
26-30	<4.20	<1.68		
36-40	<14.2	<5.66		
46-50	<5.36	<2.14		

- MONITORING WELL
- COMPLETED VAP BORING LOCATION
- SURFACE WATER SAMPLE LOCATION
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- ROAD
- DITCH/STREAM
- WATERBODY

PFOA = PERFLUOROOCCTANOIC ACID
 PFOS = PERFLUOROOCCTANE SULFONIC ACID
 VAP = VERTICAL AQUIFER PROFILE
 ALL CONCENTRATIONS REPORTED IN UNITS OF
 NANOGRAMS PER LITER (ng/L)

NOTES:
 1. VAP LOCATIONS MAY BE MODIFIED BASED ON ACCESS AND THE LOCATION OF PUBLIC AND PRIVATE UTILITY LINES.

DRAFT - 1/3/2018



TYCO FIRE PRODUCTS, LLC
 MARINETTE, WISCONSIN

VAP RESULTS SUMMARY