

## Supplementary methods:

### Bottled water and Midwestern municipal water samples

The following bottled water samples were evaluated: Electrolyte Enhanced deionized water (Whole Foods), Natural Spring Water bottled at Clairvic Spring in Volvic, France (Volvic) and Italian Sparkling Mineral Water, bottled in Silva Lucca, Italy (Whole Foods). Municipal drinking water was collected from Indiana, Michigan and Minnesota.

### PrP<sup>CWD</sup> stoichiometry

We determined the amount of PrP<sup>CWD</sup> in serial dilutions of PK-digested infected brain homogenate by interpolation of PrP<sup>CWD</sup> band intensities from four replicate, unsaturated western blots to a standard curve generated from serial dilutions of rCerPrP samples on the same blots (Figure 2). The PrP<sup>CWD</sup> concentration at each dilution was used to determine the amount of PrP<sup>CWD</sup> detected per microliter of brain homogenate after amplification as follows:

$$Y = X \text{ ng} / 9 \mu\text{l} \times \text{DF} \times 10^{-7}, \text{ where}$$

$$Y = \text{PrP}^{\text{CWD}} \text{ concentration detected}$$

$$X = \text{mean quantity of PrP}^{\text{CWD}} \text{ at given dilution (interpolated from standard curve, } n = \text{four data points per dilution (from four western blots))}$$

$$9 \mu\text{l} = \text{sample volume}$$

$$\text{DF} = \text{PrP}^{\text{CWD}} \text{ dilution factor}$$

$$10^{-7} = \text{sPMCA amplification factor}$$

We calculated an overall mean PrP<sup>CWD</sup> concentration from the means of each dilution to be 100.8 fg/μl of brain homogenate and used that value to calculate the number of PrP<sup>CWD</sup> monomers detected in our sPMCA reactions as follows:

$$Y = 100.8 \text{ fg}/\mu\text{l} \times 25 \mu\text{l} \times [6.022 \times 10^{23} \text{ molecules/mole}] / [30 \times 10^{18} \text{ fg/mole}], \text{ where}$$

Y = number of PrP<sup>CWD</sup> monomers detected in our sPMCA reactions

100.8 fg/ μl = concentration of PrP<sup>CWD</sup>/μl of brain homogenate

25 μl = starting sample volume added to sPMCA reaction

6.022 x 10<sup>23</sup> molecules/mole = Avogadro's number

30 x 10<sup>21</sup> ag/mole = molecular weight of PrP<sup>CWD</sup>

Solving for y yields 5 x 10<sup>7</sup> PrP<sup>CWD</sup> monomers detected in our sPMCA reactions. We determined the PrP<sup>CWD</sup> contamination level in Cache la Poudre river as follows:

$$100.8 \text{ fg}/\mu\text{l} = 100.8 \times 10^{-18} \text{ Kg} / 10^{-6} \text{ L} = 100 \times 10^{-12} \text{ Kg/L} = 100 \text{ parts per trillion}$$

These data are summarized in table S1.

**Table S1. PrP<sup>CWD</sup> stoichiometry**

<b>fold dilution</b>	<b>mean interpolated</b>	<b>[PrP<sup>CWD</sup>]</b>	<b>PrP<sup>CWD</sup> monomers</b>	<b>pp in HOH</b>
<b>D10</b>	<b>D10 (ng)</b>	<b>(fg/μl)</b>	<b>(x10<sup>7</sup>)</b>	<b>(ppt)</b>
100	125	139	6.96	139.29
200	69.0	153	7.67	153.35
400	19.9	88.5	4.43	88.51
800	8.06	71.7	3.58	71.66
1600	2.88	51.2	2.56	51.21
	average	101	5.04	100.80
	SD	43.9	2.2	43.88

**Table S2.**

<b>FCWTF Water Production Summary</b>										
(Combined Total Influent- Horsetooth Reservoir and Cache La Poudre River)										
(Million Gallons)										
Month	1998*	1999	2000	2001	2002	2003	2004	2005	2006	2007
Jan	533.09	568.35	440.05	554.99	596.30	504.50	505.57	494.83	509.30	512.25
Feb	490.23	441.28	537.83	480.65	529.51	446.21	460.54	452.86	456.98	480.61
Mar	537.50	535.08	608.36	572.76	593.02	503.00	526.95	495.79	496.53	518.14
Apr	613.67	549.94	771.67	594.82	805.23	515.41	642.41	546.52	713.21	563.27
May	998.04	679.61	1,279.01	878.54	1,036.39	708.59	868.95	753.27	1,097.82	865.29
Jun	1,204.29	1,000.41	1,517.04	1,457.68	1,349.27	837.72	922.40	909.78	1,381.35	
Jul	1,707.97	1,514.88	1,531.56	1,618.55	1,400.62	1,259.92	1,030.01	1,383.93	1,210.29	
Aug	1,333.38	1,144.84	1,331.49	1,357.98	1,143.62	1,232.85	905.57	1,142.82	1,151.16	
Sep	1,205.99	918.78	962.57	1,080.62	924.86	895.93	782.28	1,086.04	903.36	
Oct	715.09	739.81	690.03	818.29	619.80	752.91	557.45	514.82	645.41	
Nov	495.29	568.37	528.58	618.05	517.96	493.47	422.70	402.06	427.97	
Dec	523.64	551.85	547.81	574.20	517.41	488.14	481.90	516.85	460.76	
TOTAL	10,358.18	9,213.20	10,746.00	10,607.13	10,033.99	8,638.65	8,106.73	8,699.57	9,454.14	2,939.56
Treated Water Cost (per 1,000 gallons)	0.22	0.24	0.23	0.25	0.28	0.31	0.34	0.33	0.33	0.33
Highest Daily Production	Jul 18 72.14	Jul 11 58.56	Jun 8 66.10	Jun 30 68.03	Jun 28 63.53	Aug 14 53.32	Jul 13 46.38	Jul 13 58.16	Jun 14 61.90	Jun 14

1998 = Total Combined Influent plus Washwater Return and SWR.

**Table S3. Fort Collins Water Treatment Facility Treated Water by Water Source**

Month	Cache La Poudre River					Horsetooth Reservoir				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Jan	63.20%	65.52%	68.77%	58.26%	50.49%	36.80%	34.48%	31.23%	41.74%	49.51%
Feb	48.66%	70.31%	70.21%	61.24%	49.00%	51.34%	29.69%	29.79%	38.76%	51.00%
Mar	58.11%	75.11%	71.46%	62.42%	50.25%	41.89%	24.89%	28.54%	37.58%	49.75%
Apr	69.38%	66.67%	60.16%	43.47%	45.13%	30.62%	33.33%	39.84%	56.53%	54.87%
May	70.16%	70.88%	85.31%	46.60%	41.83%	29.84%	29.12%	14.69%	53.40%	58.17%
Jun	56.79%	74.67%	89.42%	51.52%	#DIV/0!	43.21%	25.33%	10.58%	48.48%	#DIV/0!
Jul	49.05%	66.33%	60.37%	55.65%	#DIV/0!	50.95%	33.67%	39.63%	44.35%	#DIV/0!
Aug	50.71%	73.20%	69.90%	46.97%	#DIV/0!	49.29%	26.80%	30.10%	53.03%	#DIV/0!
Sep	29.56%	79.46%	68.24%	58.81%	#DIV/0!	70.44%	20.54%	31.76%	41.19%	#DIV/0!
Oct	48.58%	60.55%	51.64%	70.17%	#DIV/0!	51.42%	39.45%	48.36%	29.83%	#DIV/0!
Nov	73.31%	75.02%	37.46%	67.80%	#DIV/0!	26.69%	24.98%	62.54%	32.20%	#DIV/0!
Dec	71.20%	72.37%	53.42%	57.08%	#DIV/0!	28.80%	27.63%	46.58%	42.92%	#DIV/0!
Total	54.89%	70.99%	67.42%	54.70%	46.63%	45.11%	29.01%	32.58%	45.30%	53.37%

Table S4.

## 2007 City of Fort Collins Drinking Drinking Water Quality Summary

4-Feb-08

Parameter	MCL	Poudre River	Horseshoeth Reservoir	SS#2 (HSPS)	WFCWD Office	Service Center	Poudre Valley Hospital	Drake Terrace	PRPA Bldg
Free Chlorine Residual	4	-	-	0.7	0.4	0.4	0.5	0.6	0.4
Temperature	-	8.2	7.9	8.1	15.9	14.8	13.5	10.7	14.1
QuantiTray®, Total Coliform / 100ml	<1	377	920	<1	<1	<1	<1	<1	<1
QuantiTray®, E. Coli / 100ml	<1	16	0	<1	<1	<1	<1	<1	<1
Fecal Strep / 100ml	-	42	3	<1	-	-	-	-	-
Heterotrophic Plate Count / 1.0 ml	-	193	69	<1	9	<1	<1	1	1
Spore Formers / 100ml	-	142	96	<1	-	-	-	-	-
Alkalinity as CaCO <sub>3</sub> , mg/L	-	22.6	28.9	37.2	37.7	37.6	37.6	37.3	37.9
Aluminum, Reactive, µg/L	-	<15.0	<15.0	27.9	20.1	26.2	19.4	26.9	22.5
Ammonia as N, mg/L	-	<0.02	<0.02	<0.02	-	-	-	-	-
Calcium as CaCO <sub>3</sub> , mg/L	-	16.4	23.3	43.1	44.2	43.8	44.0	43.1	41.4
Color, APHA Pt/Co units	15	17.5	11.9	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chlorophyll a, mg/L	-	1.4	1.4	-	-	-	-	-	-
Hardness as CaCO <sub>3</sub> , mg/L	-	24.7	30.5	49.2	49.2	49.1	48.7	48.0	47.3
Hardness, Lachat as CaCO <sub>3</sub> , mg/L	-	22.9	30.8	51.1	52.0	51.6	51.6	50.9	48.0
Chlorate, mg/L	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloride, mg/L	(250)	1.8	1.3	2.6	-	-	-	-	-
Chlorite, mg/L	1	-	-	0.13	0.12	0.13	0.12	0.13	0.16
Fluoride, mg/L	4	0.1	0.1	0.8	0.8	0.8	0.8	0.8	0.7
Nitrate, mg/L	10	0.05	0.09	0.07	-	-	-	-	-
Nitrite, mg/L	1	<0.04	<0.04	<0.04	-	-	-	-	-
Sulfate, mg/L	(250)	3.5	3.9	12.7	-	-	-	-	-
Langlier Larson Saturation Index	-	-2.3	-2.1	-1.4	-1.3	-1.3	-1.3	-1.4	-1.2
ortho-Phosphate, mg/L	-	<0.005	0.005	<0.005	-	-	-	-	-
pH, pH units	6.5 - 8.5	7.6	7.5	7.8	7.9	7.9	7.8	7.8	8.0
Silica, mg/L	-	7.9	3.2	6.3	-	-	-	-	-
Specific Conductance, µmhos/cm	-	61	73	119	121	120	120	119	117
Total Dissolved Solids, mg/L	(500)	48	50	74	72	72	74	73	70
Total Kjeldahl Nitrogen as N, mg/L	-	0.22	0.24	-	-	-	-	-	-
Total Phosphorus, mg/L	-	0.01	0.01	<0.01	-	-	-	-	-
Turbidity, NTU	1	2.57	3.33	0.14	0.13	0.14	0.16	0.14	0.15
Aluminum, µg/L	(50-200)	241	350	68	67	61	64	70	74
Antimony, µg/L	6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, µg/L	10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Barium, µg/L	2000	15	19	17	18	18	18	18	19
Beryllium, µg/L	4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium, µg/L	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium, µg/L	100	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
Copper, µg/L	[1300]	<3.0	4.3	<3.0	34.6	15.0	52.4	12.8	27.8
Iron, µg/L	(300)	401	139	16	19	20	16	16	19
Lead, µg/L	[15]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, µg/L	(50)	12.1	26.0	1.4	<1.0	1.2	1.4	1.4	1.4
Mercury, µg/L	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Molybdenum, µg/L	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Nickel, µg/L	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Selenium, µg/L	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver, µg/L	(100)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium, µg/L	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calcium, mg/L	-	6.0	8.7	14.6	14.0	-	-	-	-
Magnesium, mg/L	-	1.6	1.6	1.6	1.8	-	-	-	-
Potassium, mg/L	-	0.8	0.8	0.8	0.8	-	-	-	-
Sodium, mg/L	(20)	2.8	2.6	2.8	2.7	2.8	2.9	2.9	4.4
Zinc, mg/L	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Organic Carbon, mg/L	-	3.6	3.2	1.6	1.6	1.6	1.6	1.6	1.8
Total Trihalomethane, µg/L	80	<0.4	<0.4	19	32	33	30	26	32

**Notes :**  
 mg/L = milligram per liter or part per million  
 µg/L = micrograms per liter or part per billion  
 Poudre River = Cache la Poudre River Raw Water at Plant  
 Horseshoeth Res = Horseshoeth Reservoir Raw Water at Plant  
 MCL = Maximum Contaminant Level  
 ( ) = Secondary level (esthetic)  
 [ ] = 90th 5tile action level      < = Less Than

WFCWD Office, 2711 Overland Trail  
 SS #2 = Sample Station 2, Official Dist. System Entry Point  
 WFCWD Office, 2711 Overland Trail  
 Service Center, 700 Wood Street  
 Poudre Valley Hospital, 1024 Lemay Avenue  
 Drake Terrace, 343 W. Drake Rd.  
 PRPA = Platte River Power Authority Office

**Table S5. HT water quality data for May 2007.**

**WTF Laboratory - Daily Averages Year : '2007'**

**Month: May Sample Name: Horsetooth Water [HT]**

Date	Results (Daily Averages)				Flow MGD	Fluoride MG/L	Hardness MG/L CaCO3	pH PH UNITS	Temp. C	Total Organic Carbon MG/L	Turbidity NTU
	Alkalinity MG/L CaCO3	Color SCU	Conductivity US/CM	Oxygen (Dissolved) MG/L							
05/01/2007	33.100	10.010			9.160			7.430		2.980	1.910
05/02/2007	33.300	10.400			12.820			7.480		2.940	1.800
05/03/2007	33.200	9.260			18.760			7.410		3.040	2.100
05/04/2007	30.800	10.000			25.100			7.680	6.900	2.740	1.860
05/05/2007	29.900	9.700			12.870			7.620		2.940	1.880
05/06/2007	29.300	6.590			10.930			7.420		3.120	1.940
05/07/2007	30.100	8.960	75.700		12.930	0.170	30.800	7.590	6.900	3.140	1.900
05/08/2007	32.200	10.800			15.430			7.460		3.160	1.900
05/09/2007	32.500	10.300			14.810			7.410		3.090	1.900
05/10/2007	33.700	10.000			13.310			7.410		3.060	1.810
05/11/2007	30.100	10.300						7.620	7.420	2.950	1.800
05/12/2007	29.800	10.810						7.400	7.200	2.820	1.820
05/13/2007	30.300	10.230			21.000			7.530	7.100	3.000	2.100
05/14/2007	31.100	9.330	71.000		19.990	0.170		7.450	7.100		2.000
05/15/2007	30.000	10.300						7.610	7.000	2.780	1.850
05/16/2007	30.200	9.860			7.430			7.470		2.860	2.100
05/17/2007	29.600	10.380			21.080			7.550		2.910	2.200
05/18/2007	29.300	10.200						7.570	7.200	2.720	2.200
05/19/2007	30.400	10.560			40.000			7.590	7.300	2.940	2.200
05/20/2007	30.600	10.810			19.000			7.670	7.400	2.830	2.300
05/21/2007	30.300	10.800	77.500	8.800	23.810	0.180	26.200	7.560	7.200	2.870	2.200
05/22/2007	33.800	11.300			19.960			7.500		3.040	2.200
05/23/2007	33.000	11.730			11.320			7.420		2.960	2.400
05/24/2007	33.200	11.400			11.320			7.380		3.170	2.300
05/25/2007	30.300	11.200						7.640	7.400	2.620	2.400
05/26/2007	29.900	10.160						7.560	7.500	2.780	2.300
05/27/2007	30.200	12.610						7.420	7.500	2.920	2.400
05/28/2007	30.200	8.360			20.000			7.750		2.980	2.500
05/29/2007	31.400	12.100	75.700		19.960	0.160	28.200	7.450	7.600	3.010	2.400
05/30/2007	33.400	12.300			8.320			7.410		2.990	2.500
05/31/2007	33.600	11.800			8.320			7.400		3.120	2.500
<b>Average</b>	31.252	10.405	74.975	8.800	16.568	0.170	28.400	7.512	7.248	2.949	2.118
<b>Minimum</b>	29.300	6.590	71.000	8.800	7.430	0.160	26.200	7.380	6.900	2.620	1.800
<b>Maximum</b>	33.800	12.610	77.500	8.800	40.000	0.180	30.800	7.750	7.600	3.170	2.500

Select Month and Sample Name from page items. Averages, Minimums and Maximums are at the bottom.

**Table S6. PR water quality data for May 2007.**

**WTF Laboratory - Daily Averages Year : '2007'**

**Month:May      Sample Name:PRW [Poudre River Water]**

Results (Daily Averages)											
Date	Alkalinity	Color	Conductivity	Oxygen (Dissolved)	Flow	Fluoride	Hardness	pH	Temperature	Total OrganicCarbon	Turbidity
	MG/L CaCO3	SCU	US/CM	MG/L	MGD	MG/L	MG/L CaCO3	PH UNITS	C	MG/L	NTU
05/01/2007	26.900	30.400			8.500			7.420		6.600	7.100
05/02/2007	23.800	40.600			10.500			7.420		7.940	7.300
05/03/2007	22.700	47.010			8.500			7.400		9.090	7.500
05/04/2007	19.300	52.700			25.300			7.520	11.600	10.100	7.000
05/05/2007	17.300	48.600			8.500			7.510		9.750	5.500
05/06/2007	19.200	46.300			8.500			7.490		8.950	4.400
05/07/2007	19.400	47.110	60.100		6.500	0.150	19.600	7.610	7.800	8.640	10.400
05/08/2007	19.800	44.600			4.000			7.550		8.470	3.100
05/09/2007	20.300	37.800			8.500			7.540		7.840	3.500
05/10/2007	24.300	35.110			10.000			7.510		7.540	10.500
05/11/2007	21.400	37.800						7.610	11.300	7.940	4.400
05/12/2007	21.000	40.310						7.620	12.100	7.470	3.800
05/13/2007	17.200	56.230			15.000			7.460	10.600	9.060	12.600
05/14/2007	17.600	51.900	40.200		15.000	0.130		7.460	9.500	9.150	23.200
05/15/2007	15.400	54.500						7.290	8.300	8.710	9.400
05/16/2007	14.900	56.660			12.000			7.350		9.360	7.500
05/17/2007	15.100	56.400			10.000			7.320		8.790	6.000
05/18/2007	14.700	55.700						7.360	8.600	8.520	4.000
05/19/2007	14.600	50.160			15.000			7.350	9.200	9.310	6.200
05/20/2007	13.500	50.250			15.000			7.340	8.500	10.000	5.200
05/21/2007	17.200	45.270	39.600	8.500	15.000	0.130	13.000	7.360	8.800	8.220	8.250
05/22/2007	16.700	47.870			15.000			7.400		9.500	12.600
05/23/2007	18.100	46.100			12.000			7.380		8.320	4.800
05/24/2007	16.800	42.200			12.000			7.350		8.200	4.200
05/25/2007	16.800	41.050						7.490	7.800	6.280	3.500
05/26/2007	16.300	41.820			15.000			7.420	9.500	6.760	2.400
05/27/2007	16.000	37.750						7.400	9.300	7.050	2.500
05/28/2007	13.200	47.000			15.000			7.500		7.740	4.700
05/29/2007	14.800	43.600	40.000		15.000	0.170	13.000	7.240	10.700	7.740	5.390
05/30/2007	16.300	41.300			15.000			7.330		7.450	4.100
05/31/2007	17.500	39.500			15.000			7.330		7.250	3.000
<b>Average</b>	18.003	45.600	44.975	8.500	12.392	0.145	15.200	7.430	9.573	8.265	5.610
<b>Minimum</b>	13.200	30.400	39.600	8.500	4.000	0.130	13.000	7.240	7.800	6.280	2.400
<b>Maximum</b>	26.900	56.660	60.100	8.500	25.300	0.170	19.600	7.620	12.100	10.100	12.800

ms. Averages, Minimums and Maximums are at the bottom.

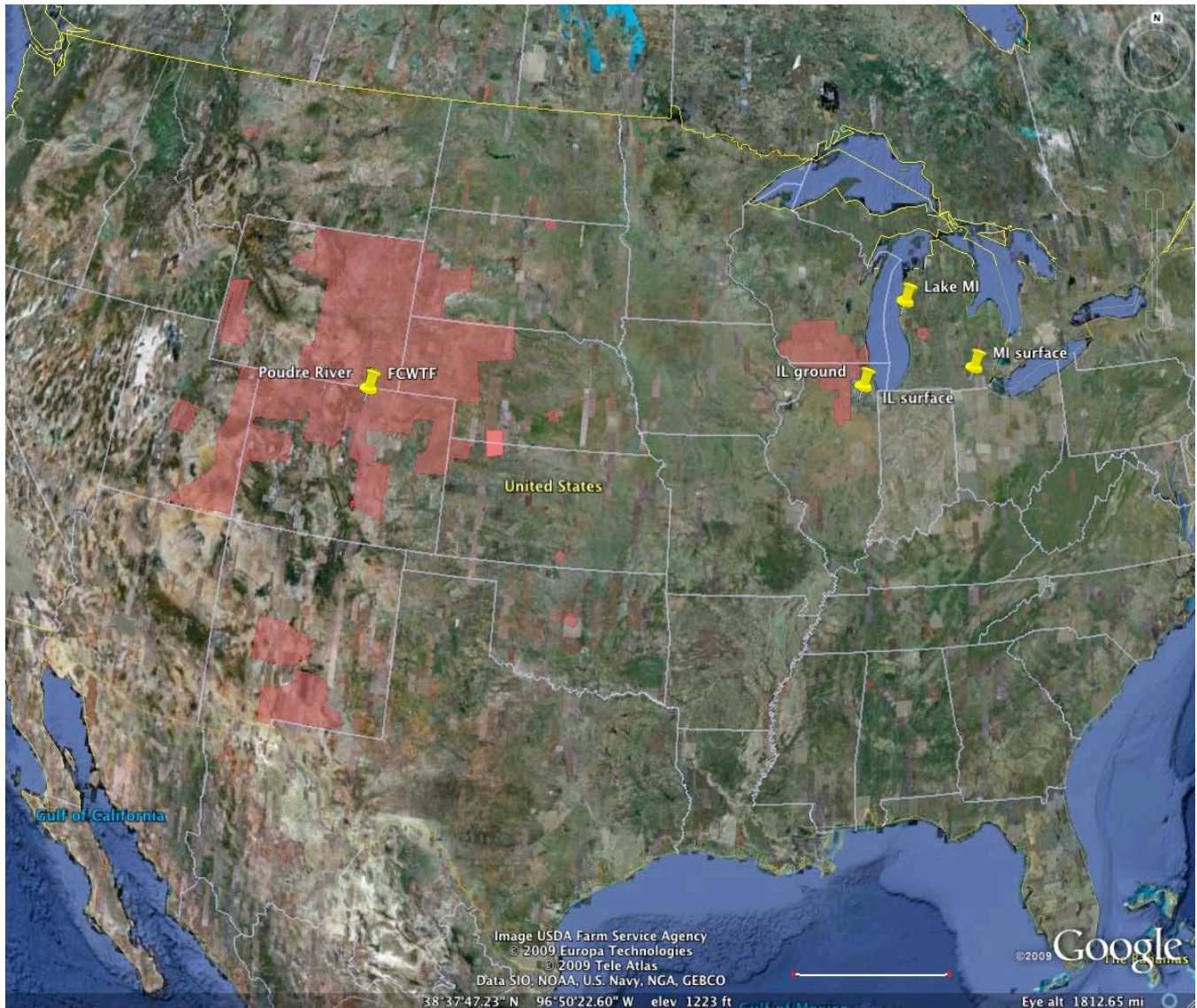


**Table S7. TOC levels in negative control water samples**

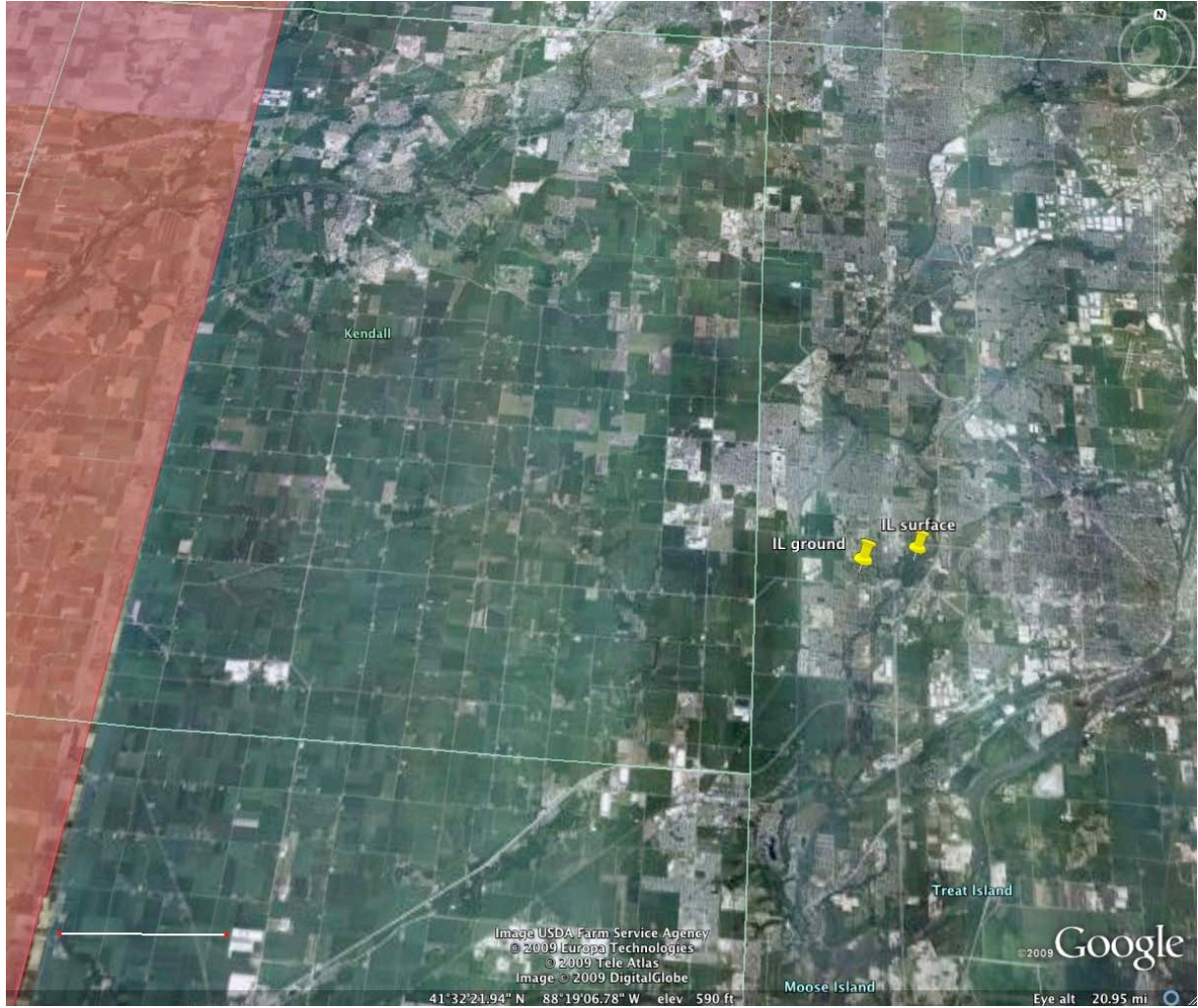
SAMPLE IDENTIFICATION	TOC RESULTS (mg/L)		
	MI SETTLED #1 & # 2 & # 3	7.69	7.46
LAKE MI #4 & # 6 & # 7	0.38	0.34	0.34
MI STIRRED # 8 & # 9 & # 10	7.46	6.31	6.15
IL GROUND # 11 & # 12 & # 13	2.11	2.41	2.26
IL SURFACE #14 & # 15 & # 16	4.90	5.10	4.49

**Table S8. 2007 infected cervid estimates in Cache la Poudre watershed**

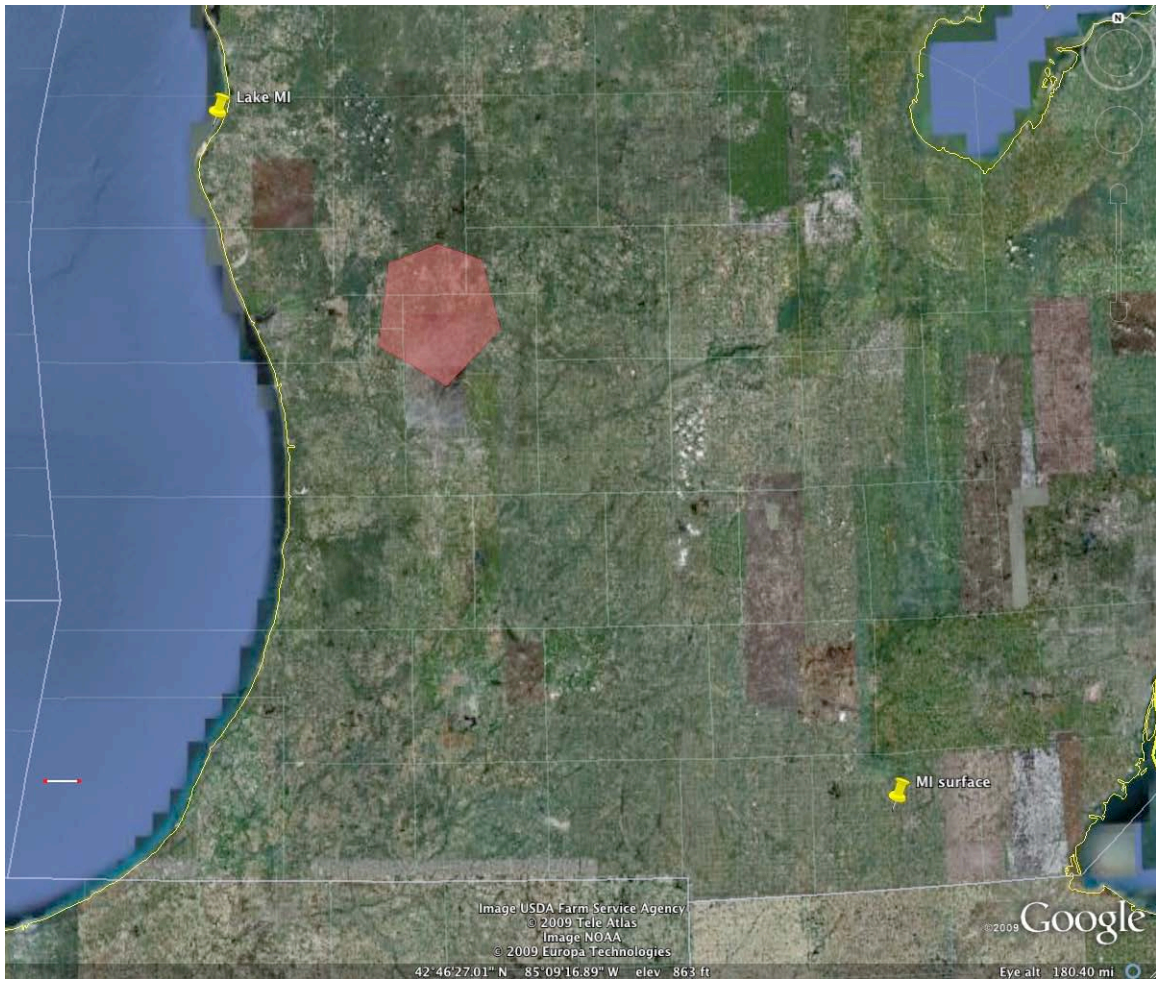
DAU	LOWER			DAU total	UPPER			DAU total
	deer	elk	moose		deer	elk	moose	
E4		370	295	665	613	126	10	749
E9		392	31	423	617	99	0	716
			<b>total</b>	<b>1087</b>			<b>total</b>	<b>1465</b>



**Figure S1. Map of water collection points<sup>1</sup>.** Areas where cervids have tested positive for CWD are shown in red. Yellow pins mark water collection points. Scale bar, 400 km.



**Figure S2. Map showing IL water collection points<sup>1</sup>.** The red area indicates the boundary where CWD infected animals have been found. Scale bar, 1 km.



**Figure S3. Map showing MI water collection points<sup>1</sup>. Area where a CWD-positive deer has been found is shown in red. Scale bar, 10 km.**

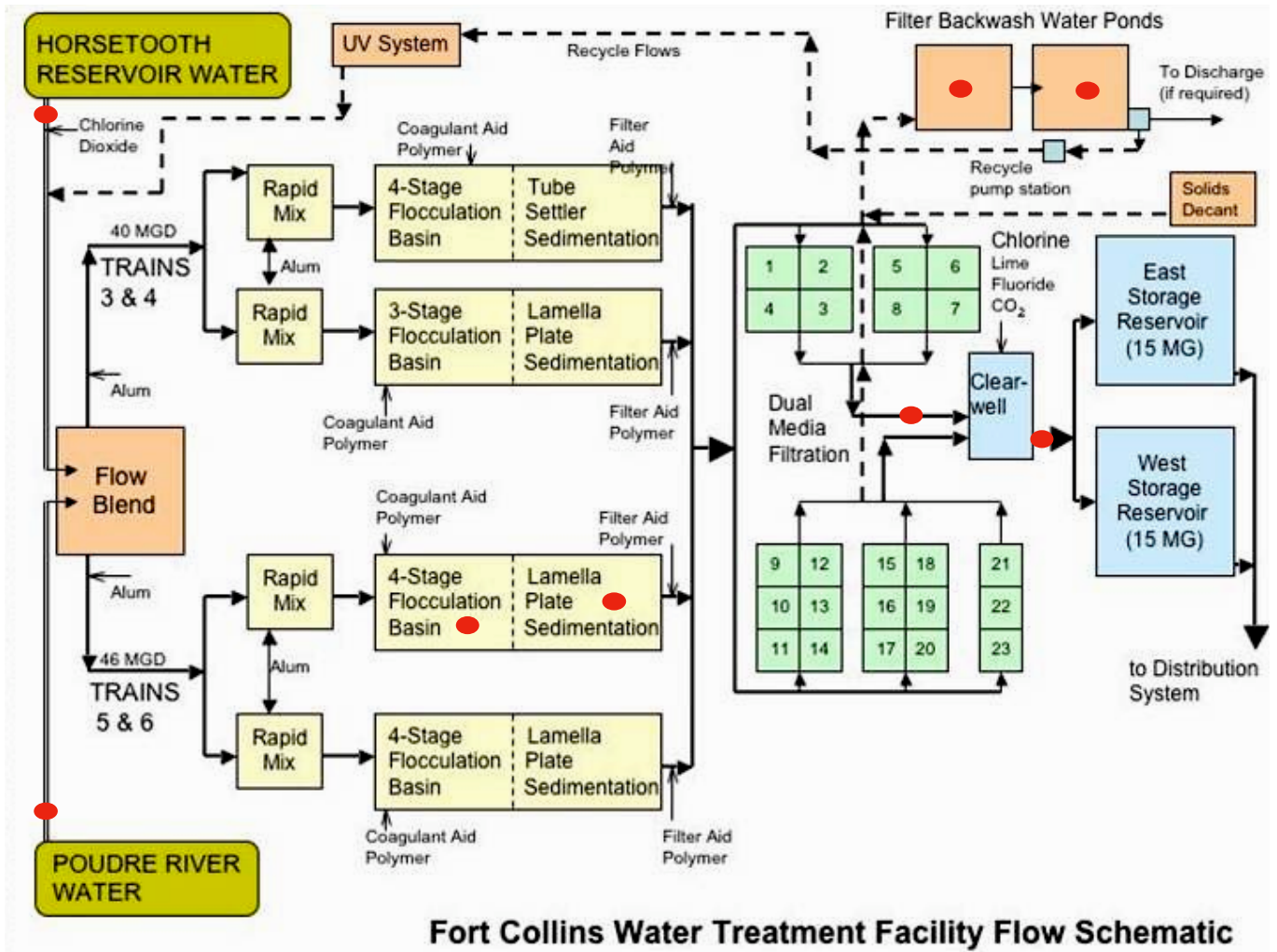
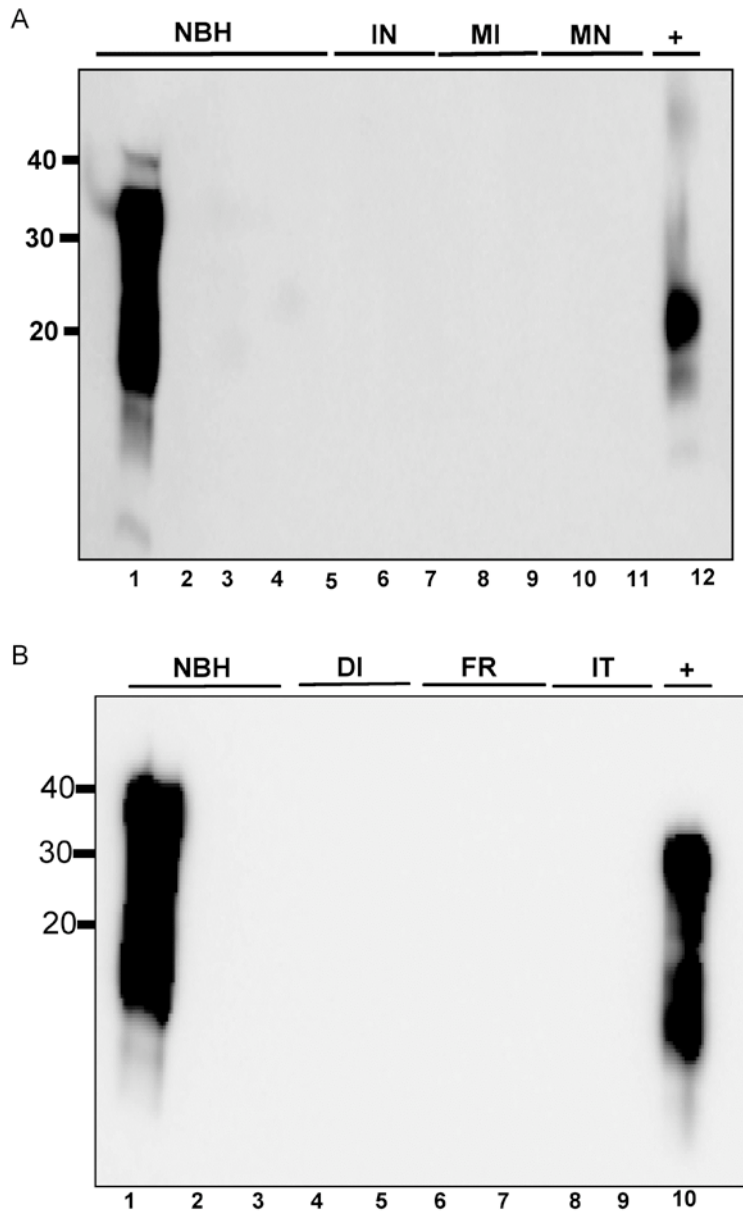


Figure S4. Schematic of the FCWTF showing water collection points. Red dots indicate water sampling stations.



**Figure S5: Bottled water and municipal water negative controls** All samples were digested with Proteinase K except normal brain homogenate (NBH) in lane 1. (A) NBH negative controls and 9) and Minnesota (MN, lanes 10 and 11) were negative for PrP<sup>CWD</sup> after 6 rounds of sPMCA. Lane 12 shows a 1:100,000 positive amplification control (+). (B) NBH negative controls (lanes 2 and 3), deionized water (DI, lanes 4 and 5) and bottled water samples from France (FR, lanes 6 and 7) and Italy (IT, lanes 8 and 9) were negative for PrP<sup>CWD</sup> after 6 rounds of sPMCA. Lane 10 shows a 1:100,000 positive amplification

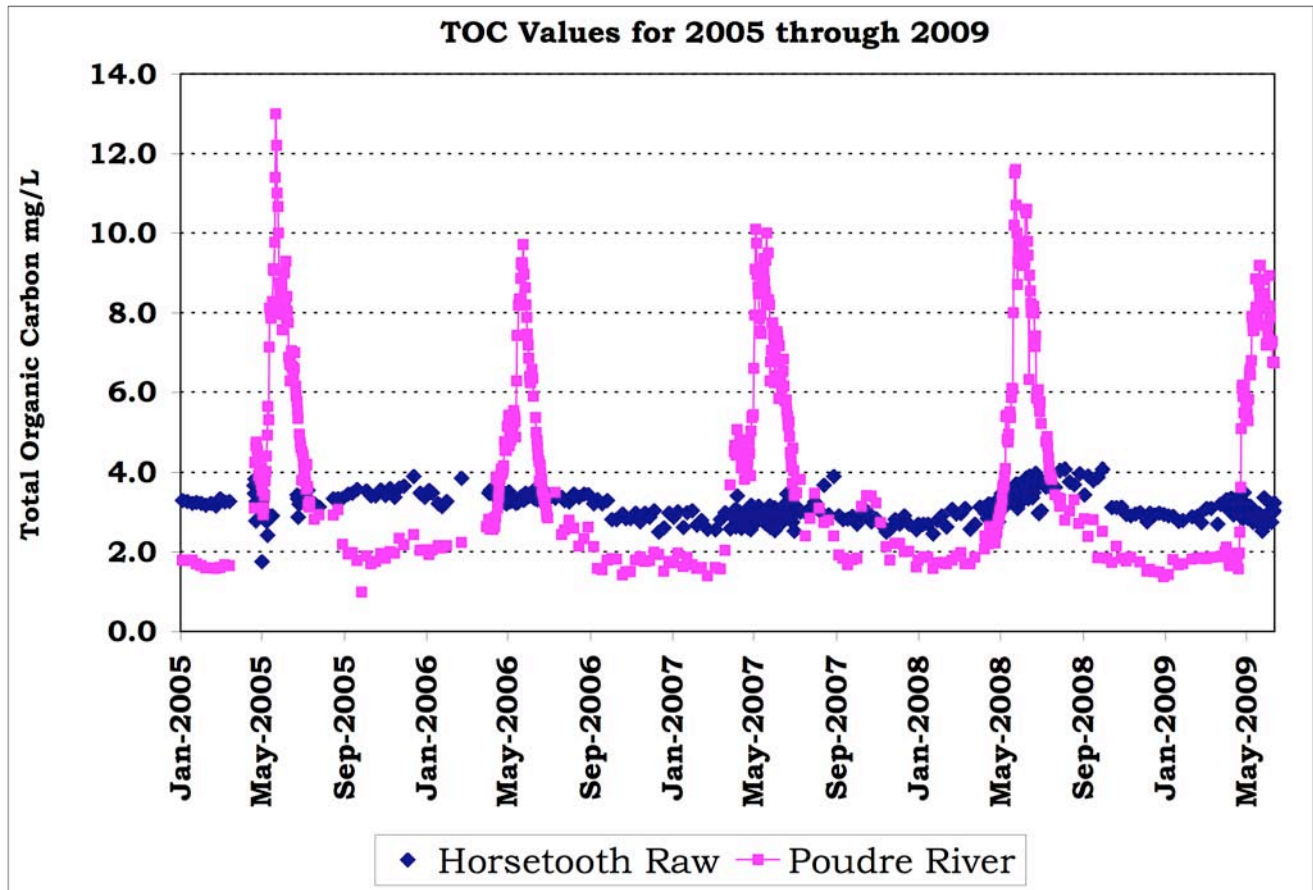
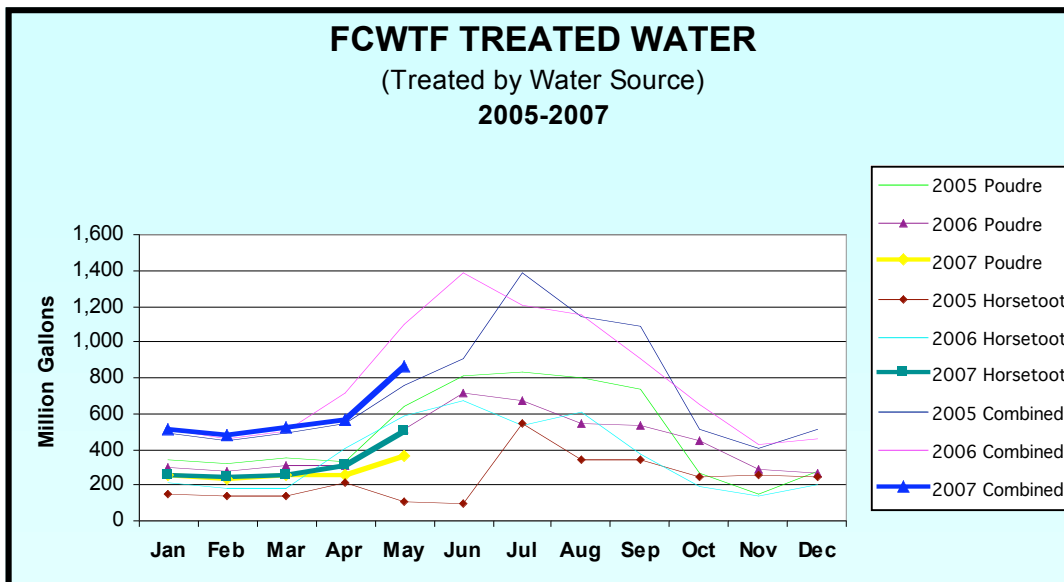
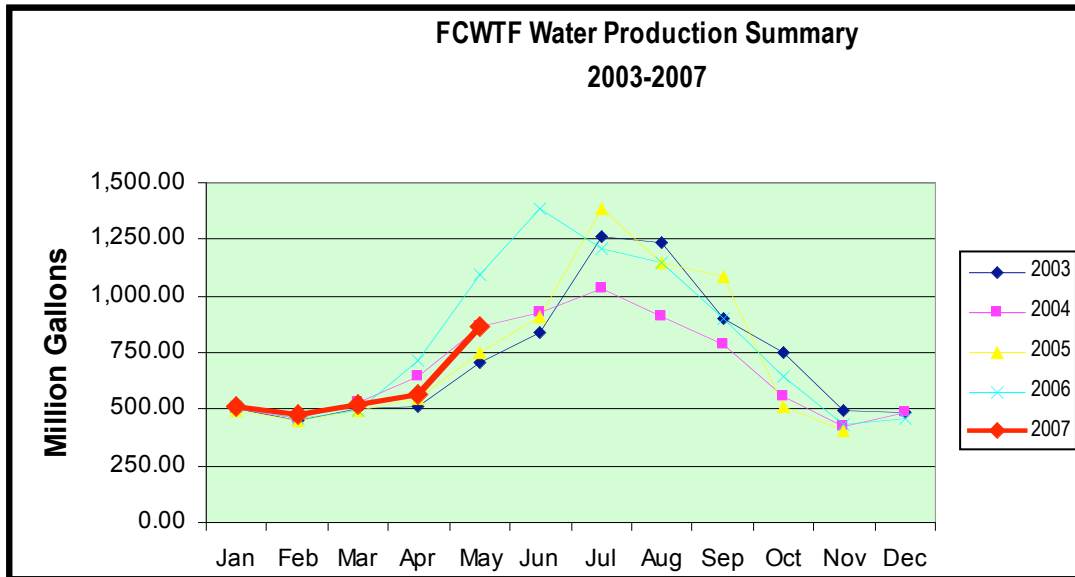


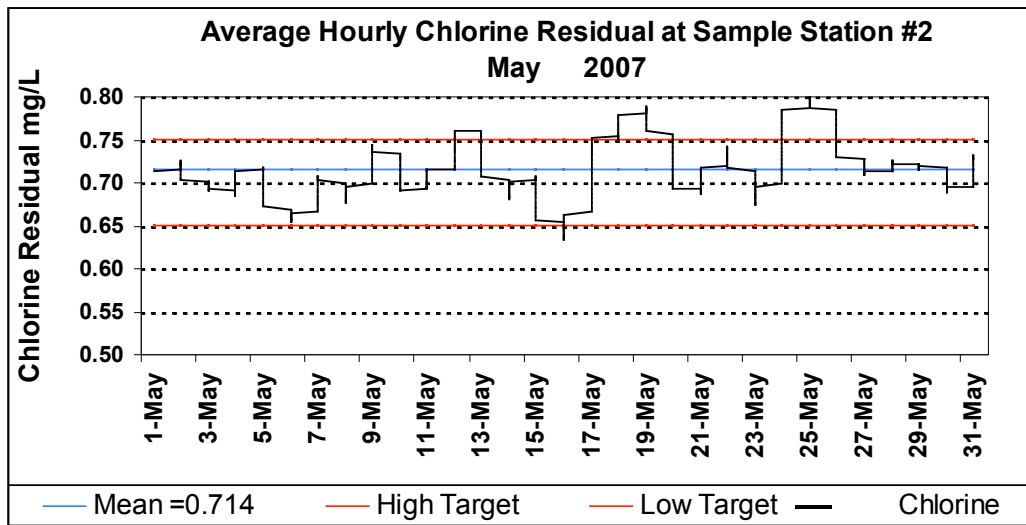
Figure S6. TOC values for HT and PR from January 2005 to present.



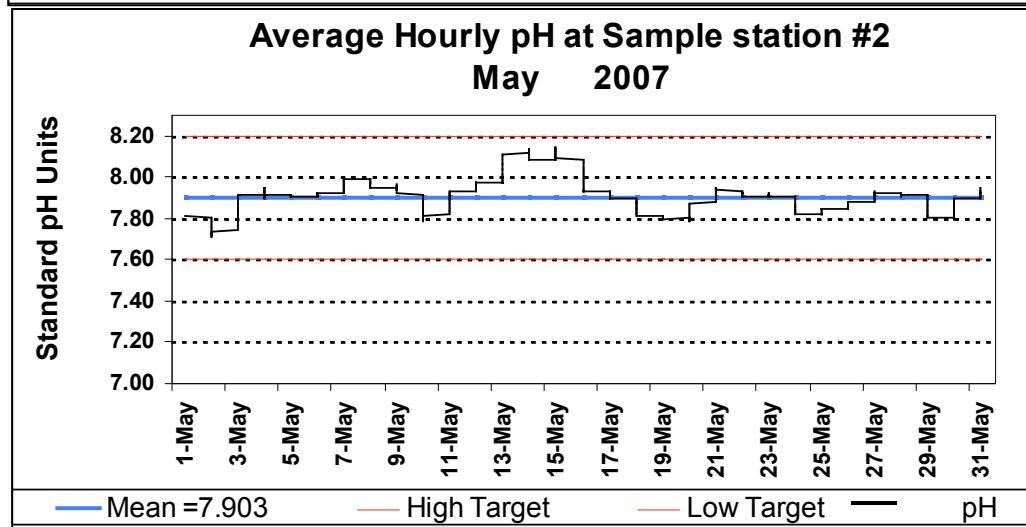
**Figure S7. FCWTF water production summaries.** (A) Production summary 2003-7. (B) Treated water production summary by raw water source, 2005-7.



A



B



C

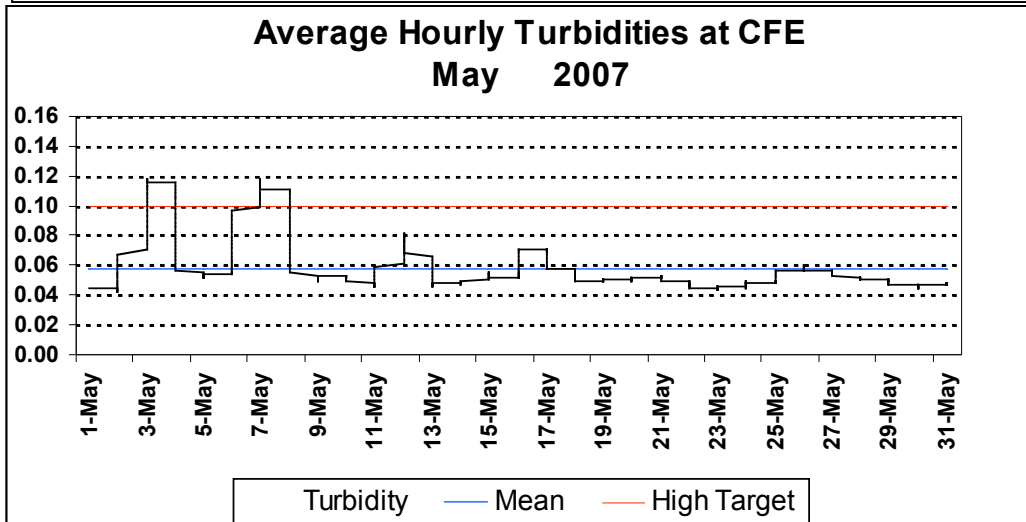


Figure S8. May 2007 averages for Chlorine residuals, pH and turbidity for finished water.

## References

- <sup>1</sup> Google Earth (2009).
- <sup>2</sup> *APHA, AWWA, and WEF. Standard Methods for the Examination of Water and Wastewater*, 20th ed. (Washington, 1998).