



Flint Water Quality Parameters

EPA Data Summit

January 10, 2017

Chicago



Thanks and Credits:

- **JoLisa McDay and staff, City of Flint**
- **Jon Bloemker and staff, DEQ**

Data location:

www.michigan.gov/flintwater/

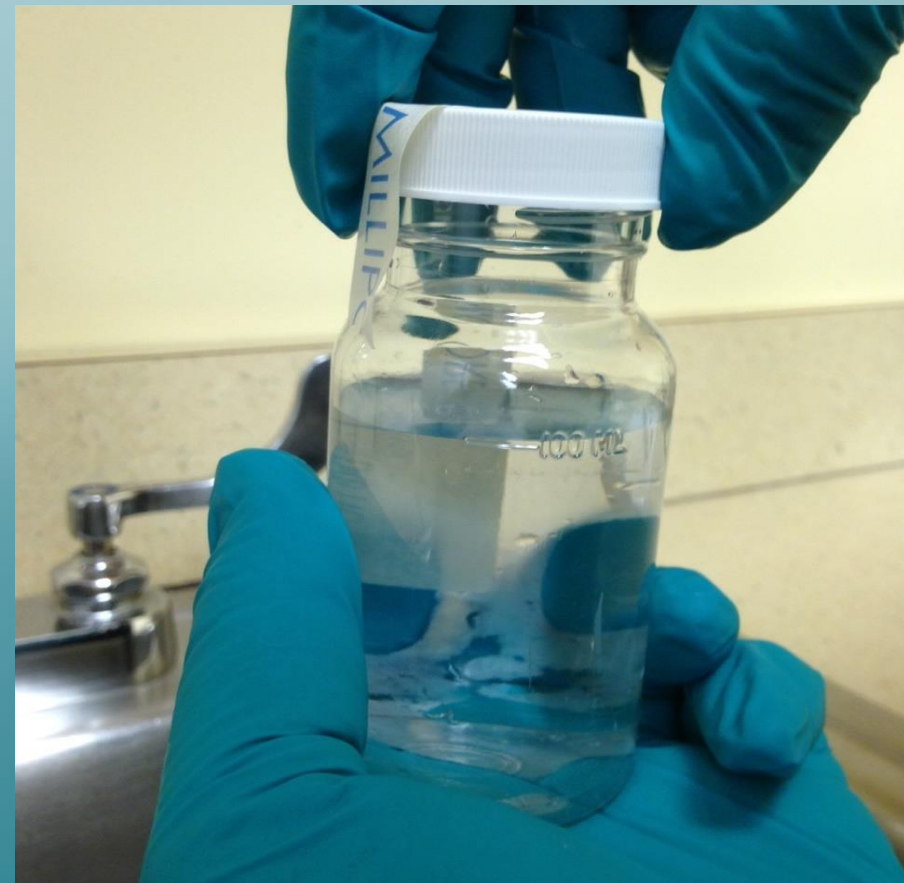
Links:

“DEQ Reports to EPA” and “Archived DEQ Reports to EPA”

“Monthly Operation Reports...”

“Weekly Enhanced Water Quality Parameter...”

Disinfection and Bacteriological Monitoring





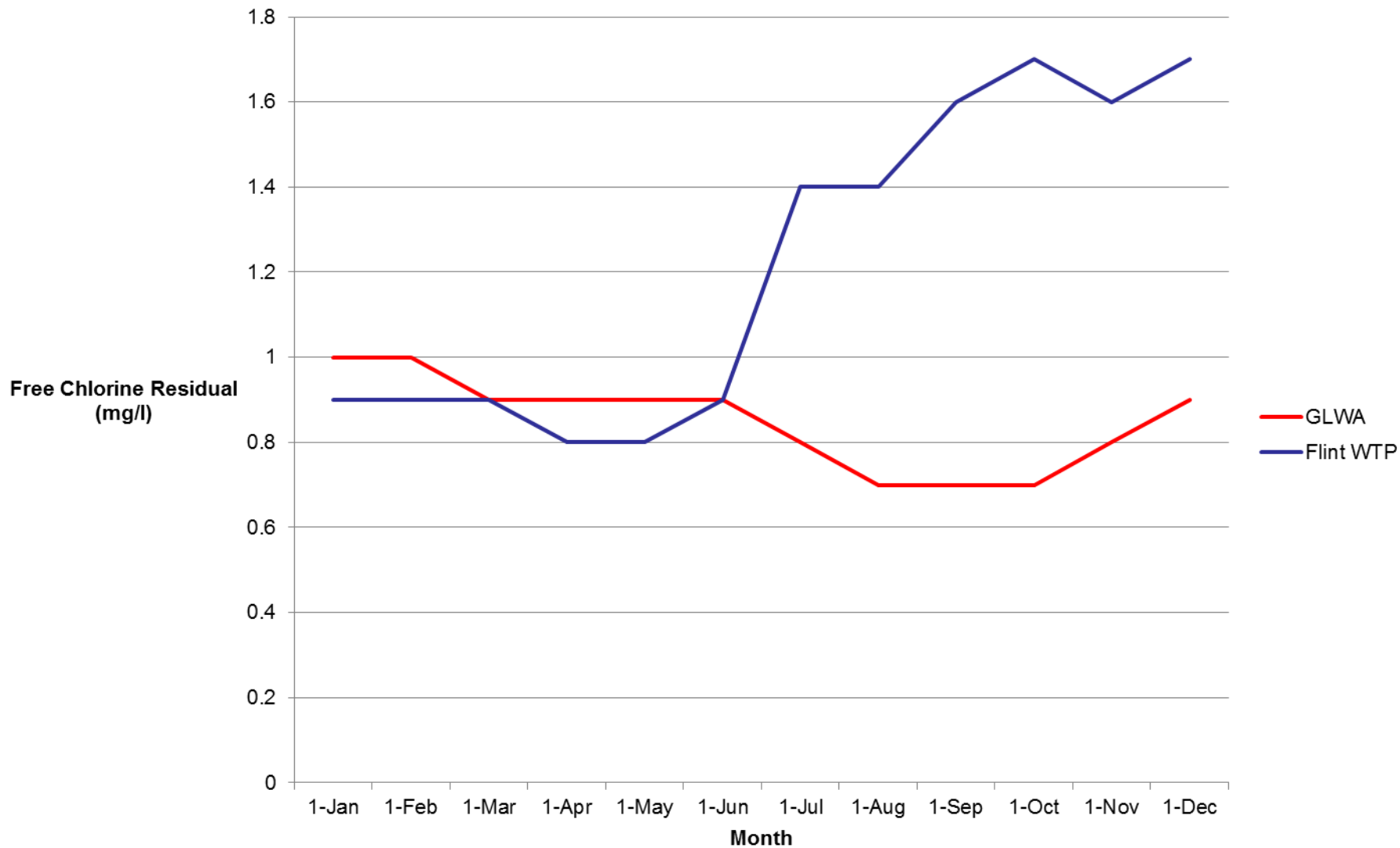
Distribution System Monitoring

WSSN 2310

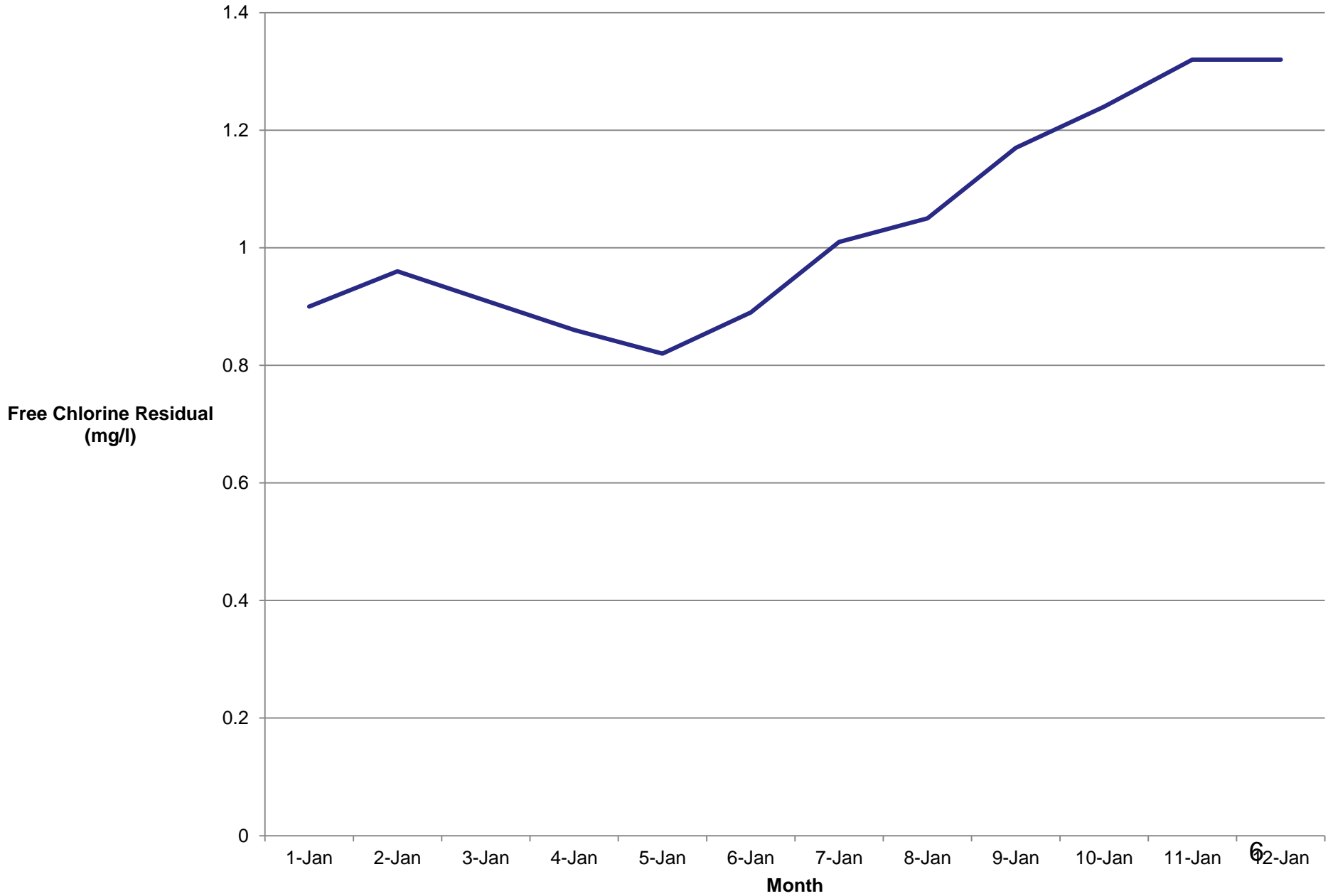
Dec-16

DATE	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l										Number of Samples
	1	2	3	4	5	6	7	8	CS	WR**	
1	1.65	1.44	1.54	1.33	1.13	0.46	1.57	1.62	1.19	0.83	10
2											0
3											0
4											0
5											0
6	1.56	1.42	1.41	1.32	1.04	0.48	1.33	1.35	1.62	1.27	10
7	1.57	1.52	1.37	1.29	1.18	0.53	1.42	1.52	1.54	1.16	10 ⁴
8	1.58	1.54	1.41	1.35	1.16	0.48	1.38	1.60	1.26	0.83	10

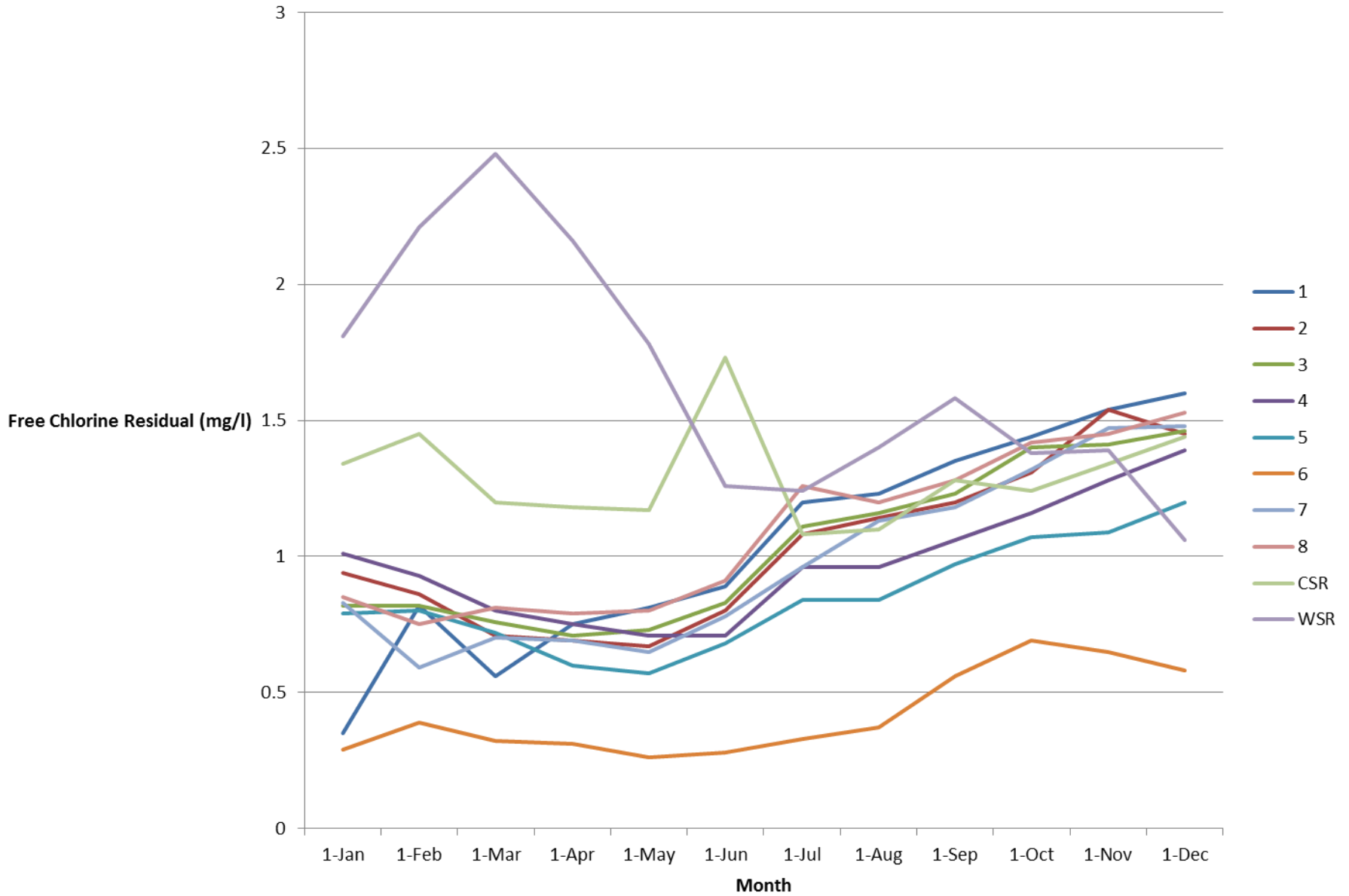
Free Chlorine Residuals for 2016 Monthly Averages GLWA vs. Flint



Monthly Average Free Chlorine Residual (mg/l) ALL Distribution Monitoring Stations



Monthly Average Free Chlorine Residual (mg/l) Distribution Monitoring Stations





Calcium hypochlorite feed system used at Westside and Cedar Street Reservoirs prior to July 2016. Contributed to the wide swings in chlorine levels.



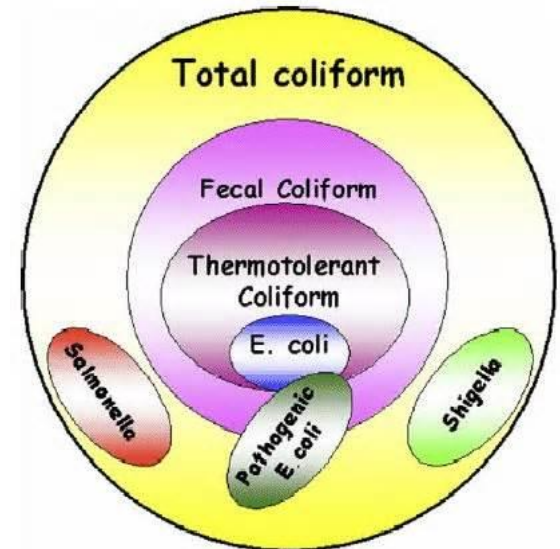
Sodium hypochlorite feed system installed at the Westside Reservoir.



Bacteriology

Calendar Year 2016

- Total Coliform
 - No positive coliforms routine distribution monitoring stations
 - 1 Positive from EPA (noncompliance) monitoring (June 17)
 - From church, collected mid-week (i.e. no or little use)
 - Low chlorine residual
 - All resamples negative
- Heterotrophic Plate Counts
 - Distribution
 - Overwhelmingly Not Detected (<2 cfu/ml)
 - A few with low counts

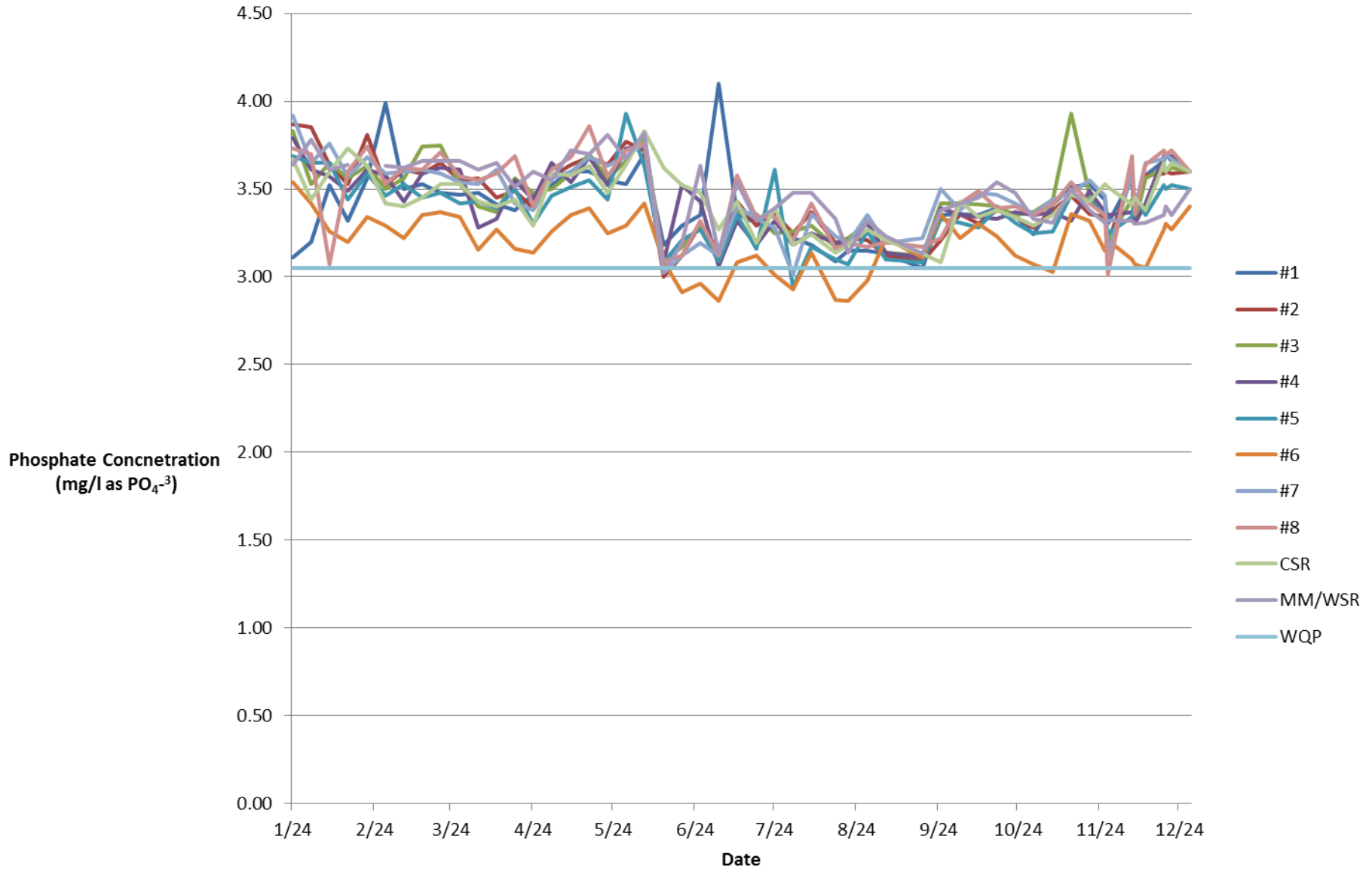




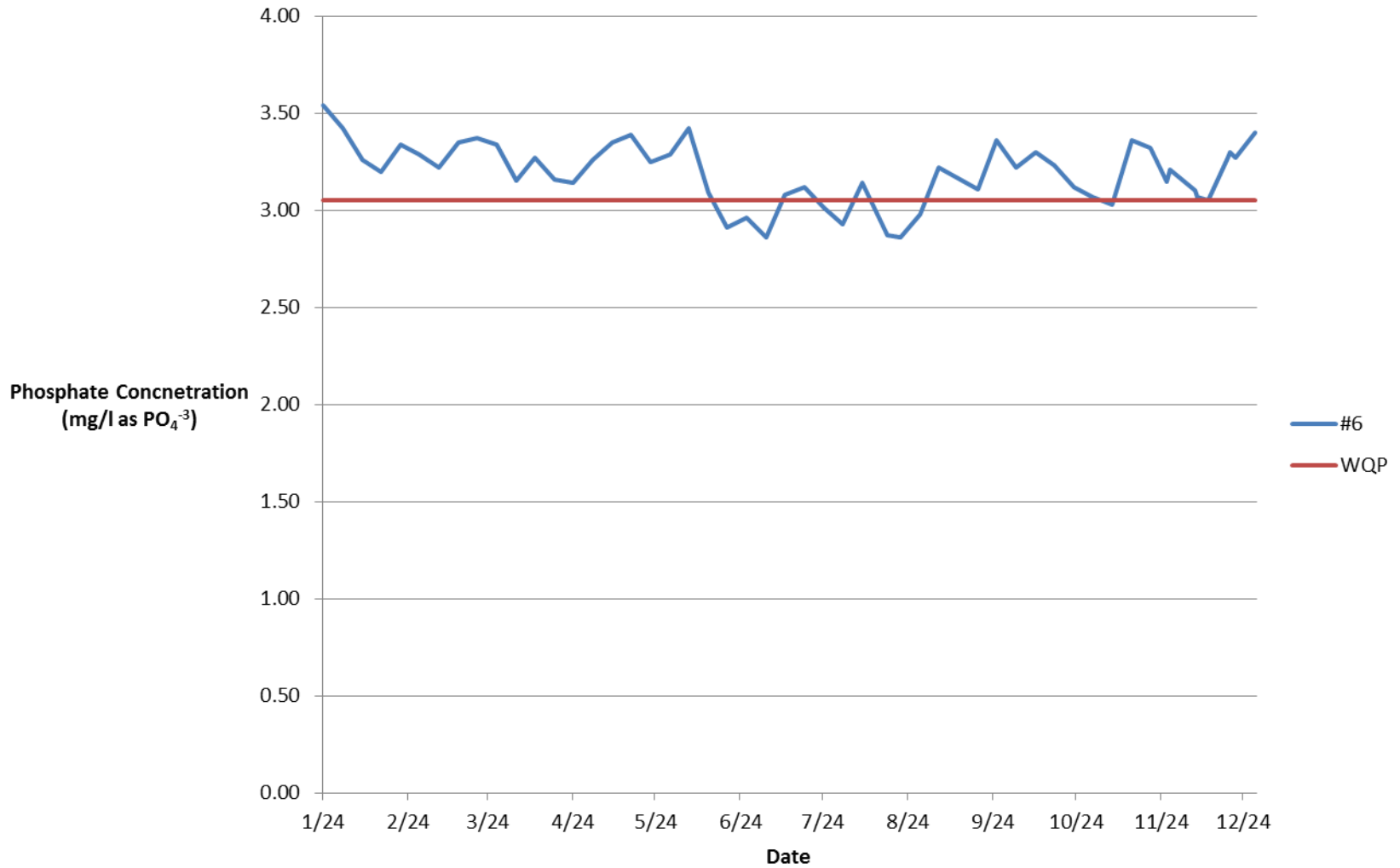
WEEKLY ENHANCED WATER QUALITY PARAMETER MONITORING

PARAMETERS AND RESULTS										**PRIOR WEEK RESULTS	
Temperature (°C)	Conductivity (mS)	pH (su)	Total Alkalinity (mg/L CaCO ₃)	Calcium (mg/L Ca ²⁺)	Hardness (mg/L CaCO ₃)	Turbidity (NTU)	Iron (mg/L)	Chloride (mg/L Cl ⁻)	Phosphate (mg/L PO ₄)		Lead (µg/L Pb)
9.2	0.22	7.23	70	29.7	98	0.325	0.02	13	3.7		ND
8.1	0.22	7.37	72	30.5	98	0.162	0.05	13	3.5		ND

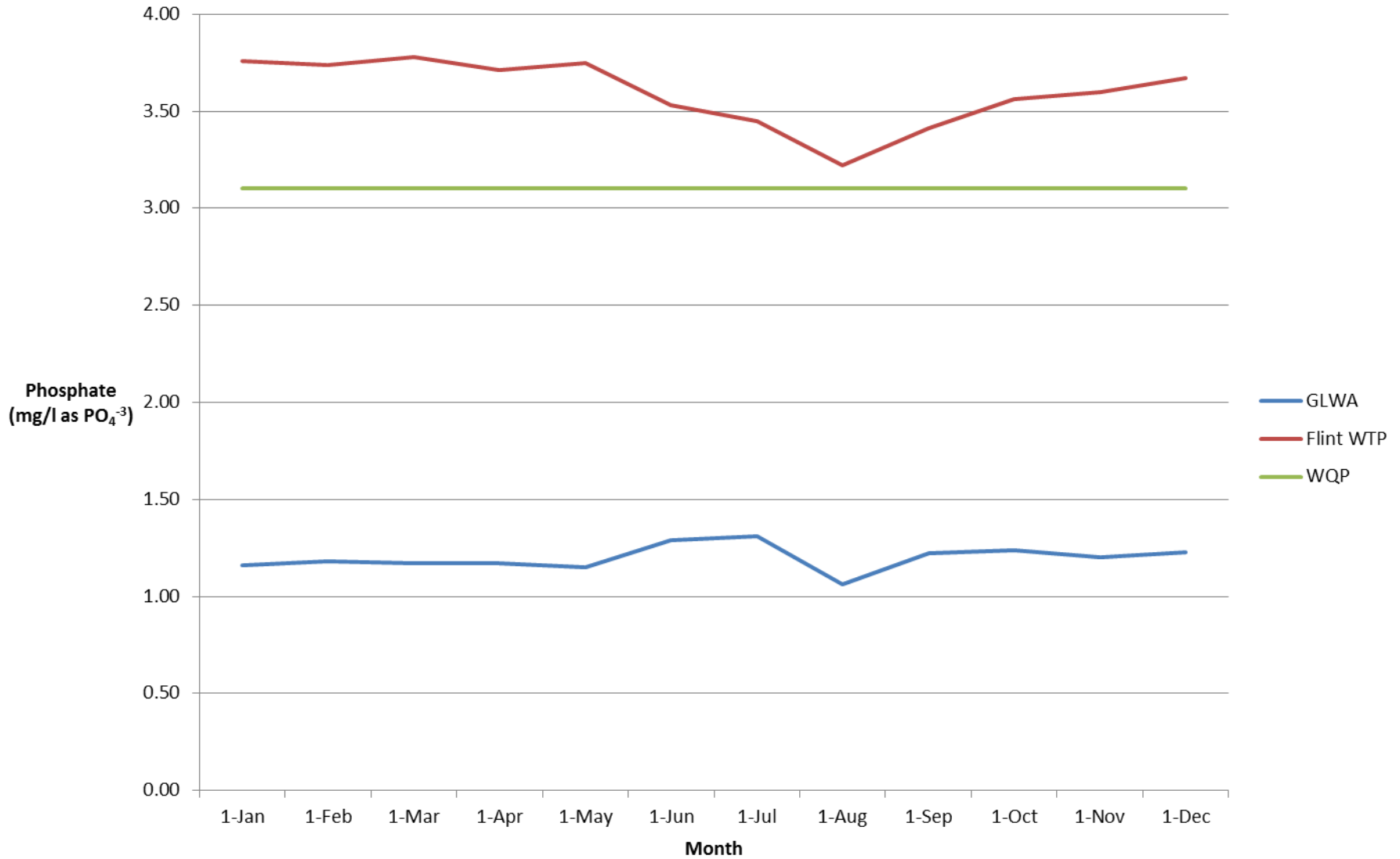
Phosphate Concentrations Distribution Stations Weekly WQP Reports



Phosphate Concentration Station #6 Weekly WQP Reports



Phosphate Concentrations 2016 Monthly Averages GLWA vs. Flint WTP



Questions?

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