

**Summary of City of Flint (City) Actions
In Response to the
EPA Emergency Administrative Order
Updated: September 29, 2016**

Chapters 52, 57, 59a & 59b: Weekly Conference Call Regarding Flint Water Plant Operations September 29, 2016.

EPA Order Due Date: Weekly

MDEQ and the Flint Water Treatment Plant staff held the weekly call on September 29th to review and discuss the summary of water quality and corrosion control parameters reported on the City's September operation report completed to date, a summary of water quality parameters collected the week of September 25th from the 10 sites monitored weekly.

The following observations were noted:

- The supplemental phosphate dosage was consistent and ranged between 2.43 and 2.49 milligrams per liter (mg/l). The phosphate residuals measured at the plant tap ranged from 3.06 to 3.60 mg/l entering the distribution system.
- All pH measurements were greater than 7.0 at all 10 of the Enhanced Water Quality Monitoring (EWQM) sites and the Point of Entry (Control Station #2) to the system. The pH levels ranged from 7.40 to 7.51 in the water received from Great Lakes Water Authority (GLWA) and from 7.39 to 7.52 at the 10 distribution system sites.
- All of the established 10 weekly distribution system sites reported a phosphate residual at or above 3.1 mg/l, ranging between 3.1 and 3.5 mg/l of phosphate.
- Guidance in the form of standard operating procedures is to be discussed by DEQ, EPA and Flint WTP staff to establish response protocols when the phosphate residual or pH level is unacceptable at any of the EWQM sites.
- Iron levels at EWQM sites ranged from 0.01 to 0.15 mg/l. Plant tap iron concentrations were all measured at 0.01 mg/l in the last week.
- Lead samples taken at the EWQM sites during the week of September 20th all reported no lead detected.
- The supplemental chlorine feed at Control Station #2 ranged from 1.14 to 1.33 mg/l and the plant tap free chlorine residuals ranged from 1.7 to 1.9 mg/l.
- The free chlorine residuals at the 10 EWQM sites in the distribution system ranged from 0.61 to 1.67 mg/l. The low residual was at site #6, and the high residual was at the Cedar Street Reservoir. The lowest free chlorine residual at the other 9 EWQM sites during the past week was 1.09 mg/l.

The following information was provided through daily operation summary reports prepared by DEQ staff during the week of September 25th and in discussions with Flint staff.

- On September 26th, the City was unable to use any of the three pumps at the Cedar Street Reservoir for most of the day. Control logic problems with the switch gear prevented the city from running the 5 MGD pump, which is the pump normally used on a daily basis. The 8 MGD capacity pump is waiting repairs, and the Purchase Order for this work is making its way through channels. The 12 MGD pump is strictly used for emergencies due to the potential of creating water hammer and damaging the

distribution system. After the switch gear was repaired, the City briefly ran the pump and measured an acceptable free chlorine residual of 1.76 mg/l.

- On September 26th, the tap pH slightly decreased to ~7.27. The Flint WTP lab was having problems with the existing pH electrode not stabilizing and producing drifting readings, +/- 0.16 units, when measuring both the tap water and the 4.0, 7.0 and 10.0 pH buffers. After consultation, the electrode was removed from service and the backup was employed. The backup is an older electrode but it produced stable readings. The slopes of both the new and old electrode were within the manufacturer's suggested limits. Tomorrow the lab is scheduled to receive a new Hach Chemical specific ion meter, pH electrode and fluoride electrode.
- The water plant lab reported a problem with the bacteriological sample bottles from Idexx Analytical. The cap liners are sticking to some of the bottles, when the caps are removed. The problem was reported to Idexx, which is sending a box of new bottles via overnight delivery. Sample collectors have been apprised of the problem and they will take an additional bottle out to the sample sites in the event they encounter a defective bottle. All defective bottles are being discarded on discovery.
- There were discussions between plant and DEQ staff about pumping the water out of the Dort Reservoir, which is located at the plant site, in order to prepare the reservoir to be returned to service. Plant personnel were reminded that the plant may be starting its test runs within the next 7 months.
- On September 28th, there was a chlorination issue while filling West Side tank overnight. The operator inadvertently turned on the chlorinator at Cedar Street instead of turning on the chlorinator at West Side while the West Side tank was being filled. This oversight led to underfeeding chlorine at West Side and overfeeding at Cedar Street. The error was caught in the middle of the night and corrective actions were taken, so no highly chlorinated water entered the distribution system. This issue points out the need to complete the SCADA upgrades, address the chlorination mixing issues, install the downstream chlorine analyzer at West Side, and automate the chlorine feed operation along with alarms at this outstations.
- On September 29th, it was reported that the chlorine residual readout of the CL-17 on-line analyzer in the water plant basement is routinely checked against analyses of grab samples. When operations staff noted that the CL-17 readout did not match grab sample results, the CL-17 was recalibrated and results are back in agreement.
- On September 29th, the following items were discussed during an on-site visit:
 1. The conversion of the ferric storage tanks to alum storage
 2. The disposal of water from the Dort Reservoir
 3. The scoring procedure for existing staff to qualify for DEQ's F certification exams
 4. The need for an SOP for how quickly to open/close fill valves at the Cedar Street and West Side reservoirs to minimize water hammer