UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, BOSTON, MA 02114

MEMORANDUM

DATE: May 14, 2013

SUBJ: CWA Complaint Inspection at Russell F. Tennant Water Treatment Facility, Attleboro, MA

FROM: Kenneth B. Rota, Senior Enforcement Analyst
OES Enforcement Office

TO: City of Attleboro, Russell F. Tennant Water Treatment Facility File

I. General Information

A. Facility Name: City of Attleboro
Russell F. Tennant Water Treatment Facility
1296 West Street
Attleboro, MA 02703

B. Environmental Contact(s): Christine Millhouse, Water Superintendent
Kourtney Wunschel, Assistant Superintendent

C. Date of Inspection: May 7, 2013

D. Purpose of Inspection: Complaint Investigation

E. Personnel Participating in Inspection: Ken Rota, US EPA
Dave Turin, US EPA
Christine Millhouse, Water Superintendent
Kourtney Wunschel, Assistant Superintendent

II. SDWA Reporting/Information Requirements

A. PWS I.D. No.: MA4016000
B. Type of Operation: Community Water Supply (Local Government)
C. Primary Water Source: Surface
D. Population Served: 43,593 (SDWIS)

III. Facility Description

The City of Attleboro Russell F. Tennant Water Treatment Facility is located at 1296 West Street, Attleboro. The facility came online in June of 1995. Water from nearby Orr's Pond is screened and drawn into a pretreatment basin where it is mixed with polyaluminum chloride

(PAC) for coagulation and then flows into a series of flocculation basins where fine particles (floc) are formed from suspended and dissolved material brought out of solution. The floc swirls in the flocculation basins and grows in size as smaller particles of floc gather together and form larger particles. The water may be treated with ozone at certain times of the year when Total Organic Carbon levels increase due to events such seasonal turnover in Orr's Pond.

After flocculation, the water flows into several sedimentation basins where, over time, the now heavier floc particles settle to the bottom and are removed as sludge. The clearer supernatant is directed to the Control Building where it passes through a mixed-media filtration system of activated carbon and sand.

After filtering, the water is treated with potassium hydroxide to adjust the pH. Polyphosphate is added to sequester metals and help reduce corrosion of household plumbing. Sodium hypochlorite is added to destroy pathogens, and fluorosilicic acid is added for dental hygiene. To ensure that the chemicals are thoroughly mixed in the water, the water passes slowly through a large contact chamber. From there it flows into a storage clear well before being pumped into the distribution system. The water at this point is now ready for consumer use.

As a whole, residents and industry in Attleboro withdraw between 3 and 6 million gallons of water each day, depending on the season.

IV. General Observations

At approximately 9:00 a.m., on May 7, 2013, EPA inspectors Ken Rota and Dave Turin (the "Inspectors" or "Inspection Team) arrived at the Russell F. Tennant Water Treatment Facility located at 1296 West Street in Attleboro, MA. The Water Treatment Facility is owned by the City of Attleboro and operated by the City Water Department. The Inspection Team entered the Main Office area, identified themselves as EPA inspectors and asked to speak with the responsible person for the facility. The receptionist stated that she would get the facility Superintendent, Christine Millhouse.

Ms. Millhouse met the Inspection Team at the reception/lobby area and introduced herself. Ms. Millhouse asked the purpose of our visit. The Inspection Team stated that they were at the facility in response to a complaint and asked Ms. Millhouse if there was an office or conference room where we could elaborate. Ms. Millhouse led the Inspection Team to her office. The Inspection Team told Ms. Millhouse that EPA received an anonymous complaint by telephone the day before, May 6th, which alleged that the City of Attleboro's Drinking Water Treatment Facility was discharging filter backwash into Orr's Pond. The Inspection Team told Ms. Millhouse that their review of EPA databases indicated that the facility doesn't have a permit to discharge process waters. The Inspection Team told Ms. Millhouse that the purpose of their inspection was to determine whether the alleged complaint was accurate. The Inspection Team presented their credentials to Ms. Millhouse and stated that they would like to begin the inspection at the at the granulated activated carbon area ("GAC") where filter backwash is generated to review the process and determine what the potential discharge points were.

The Inspection Team asked Ms. Millhouse if she could describe the treatment process and whether she had any maps or diagrams for us to look at before they conducted a walk-through. Ms. Millhouse stated that she could provide the Inspectors with an overview of the operations conducted at the facility and a binder for the facility with various diagrams and schematics. Ms. Millhouse contacted Assistant Superintendent, Kourtney Wunschel, to assist her and to accompany the Inspection Team during the walk-through of the facility. Ms. Wunschel met the Inspection Team in the office area and they re-explained the purpose of their site visit to her.

After a brief discussion of the process, Mses. Millhouse and Wunschel led the Inspection Team from the office area and to a stairwell that led to the GAC area. The GAC filters were located inside one of the buildings that connected to office area. Ms. Millhouse stated that the GAC system consisted of four (4) concrete pits/basins. Ms. Millhouse stated that each concrete pit/basin was a GAC filter and that each filter bed contained granulated activated carbon with gravel supporting media. The Inspection Team asked Ms. Wenschel to identify the daily volume of drinking produced at the plant. Ms. Wenschel stated that the facility produced approximately 4,750,000 gallons of drinking water per day

The Inspection Team asked Mses. Millhouse and Wunschel to describe the maintenance/ backwash frequency for the GAC. Ms. Millhouse stated that the GACs were cleaned and repacked approximately once a year. The Inspection Team asked Ms. Wunschel what the backwash frequency for the filters was. Ms. Wunschel stated that the GACs were designed to backwash every 100 hours or 7 feet of head, which ever was first. The Inspection Team asked Ms. Wenschel to identify the current backwash frequency. Ms. Wenschel stated that the GAC filters were currently backwashing approximately every 20-40 hours. Ms. Wenschel stated that the reason the GAC system backwashed every 20-40 hours was because it reached 7 feet of head before the 100 hour design frequency. The Inspection Team asked Ms. Wunschel what percentage of the total amount of water produced was used to backwash the GAC filters. Ms. Wunshel stated that approximately 6% of the total production volume was used.

The Inspection Team asked Mses. Millhouse and Wunschel where the filter backwash was discharged after the GACs. Ms. Millhouse stated that the filter backwash was sent back to the headworks of the facility and recycled. The Inspection Team asked Mses. Millhouse and Wunschel if there were any bypasses located after the GAC that could be used to re-direct the filter backwash elsewhere without treatment. Ms. Wenschel stated that there were no bypasses and Ms. Millhouse stated that all filter backwash was sent to the headworks of the facility to the pretreatment tank and recycled.

The Inspection Team continued following the process flow and asked Mses. Millhouse and Wunschel to lead them to the next phase of the process, after the filters had been backwashed. Mses. Millhouse and Wunschel led the Inspection Team outside, to a grassy area located immediately outside the building. The grassy area had two above-ground vents and two above-ground valves protruding from the grass. The Inspection Team also immediately noticed a yellow fire hose pumping large amounts of water onto the asphalt drive for the facility. The Inspection Team observed the hose coming from the roof of a concrete structure located directly across from the grassy area. The Inspectors further observed that the water discharging from the

hose flowed into two storm drains. One storm drain was located next to the hose. The second storm drain was located down gradient from the first drain approximately 100-200 feet away. Water that did not enter the first storm drain flowed into the second storm drain where it disappeared into the drainage system and was conveyed elsewhere.

The Inspection Team asked what the discharge was and Ms. Millhouse stated that the facility was cleaning out the basins to their pretreatment system and identified the discharge as "raw water." Ms. Millhouse stated that this discharge may be what our anonymous call is about. The Inspection Team concurred and told Ms. Millhouse that we would evaluate the discharge situation after we complete our review of the handling of the filter backwash waste first.

The Inspection Team re-focused their attention on the aboveground vents and associated operating valves at this location (See Photographs 1 and 2). Ms. Wenschell stated that two (2) underground tanks were located at this area and were used to store the filter backwash from the GAC. The Inspection Team asked Ms. Millhouse if there were any bypasses that could divert filter backwash before or after these tanks. Ms. Millhouse stated that there were no bypasses and told the Inspection Team that the filter backwash flowed directly from the GAC to these tanks and, from there, to the pretreatment tank (See Photograph 3). Ms. Millhouse stated that the filter backwash was recycled at the headworks of the plant.

The Inspection Team observed an employee working by an open hatch located next to the filter backwash storage tanks. The open hatch had a ladder protruding from the inside to the outside and appeared to be an access point to an underground tunnel or vault of some kind.
Ms. Millhouse stated that an ozonator was at this location. Ms. Millhouse stated that raw water from Orr's Pond was treated by ozone injection for organics when an increase in the total organic levels in the raw water warrants this procedure. Ms. Millhouse stated that the "turnover" of Orr's Pond in the spring and fall is an example when the TOC level in the water would increase and ozone injection would be required. Ms. Millhouse stated that the filter backwash may also get treated by ozone injection prior to recycling.

The Inspection Team returned to the hose discharge and asked Ms. Millhouse to explain what was occurring. Ms. Millhouse stated that the facility was discharging "raw water" from the pretreatment tank. The Inspection Team asked Ms. Millhouse what she meant by "raw water" and whether the "raw water" included filter backwash or other sludge from the tank system. Ms. Millhouse told the Inspection Team that the raw water did not include filter backwash or sludge and that it was water that had undergone pretreatment but had not passed through the GAC. Ms. Millhouse indicated that there were four basins used for pretreatment. Ms. Millhouse stated that the discharge from the hose was the raw water that remained after the sludge from the pretreatment system was removed and discharged to the sewer. Ms. Millhouse stated that they were cleaning the last of the four basins used in their pretreatment system.

The Inspection Team asked Ms. Millhouse to describe the cleaning procedure. Ms. Millhouse stated that the four pretreatment tanks are cleaned out annually. According to Ms. Millhouse, the cleaning procedure involved removing the bottom two (2) feet of sludge that accumulated during the year. The sludge was removed by manually turning valves located on top of the pretreatment

tank to allow the sludge from the pretreatment tank to discharge into the City of Attleboro's Wastewater Treatment Facility ("WWTF"). After the sludge was removed from the pretreatment tank, the remaining "raw water" was discharged into a retention pond located onsite according to Ms. Millhouse. The Inspection Team told Ms. Millhouse that they wanted to examine the top of the pretreatment tank to better understand the process and to directly observe the cleaning activities. The Inspection Team and Mses. Millhouse and Wenschel climbed the stairs on the concrete pretreatment tank to access the roof of the pretreatment system.

From the top of the pretreatment tank the Inspection Team was able to observe the yellow fire hose coming out of one of the pretreatment tank basins and discharging water in the asphalt drive as described by Ms. Millhouse. The end of the yellow fire hose inside the pretreatment tank basin was secured by a rope. Inspector Rota pulled on the hose and it appeared to be weighted down to keep the hose below the liquid level of the basin. The Inspection Team observed a transfer pump, in service, and actively pumping the contents of this tank (identified later as Basin #1 for analytical testing conducted on the discharge). The Inspection Team also observed a portable generator on top of the pretreatment tank and a fully charged fire hose. The charged hose was not in use at the time of inspection but appeared to be used for rinsing the basins to aid in the cleanout process.

Ms. Millhouse directed our attention to a series of manual valves located at the far end of the pretreatment tank. Ms. Millhouse stated that these valves were used to discharge the sludge that accumulated on the bottom of the pretreatment tank to the sewer system. Ms. Millhouse stated that meters were installed by the City of Attleboro's Wastewater Treatment Plant to record the volume of wastewater discharged to the city sewer system, which her department would be billed for.

The Inspection Team walked back to the area where the Inspector Team first observed the fire hose actively discharging onto the pavement and into two storm/catch basins. The Inspection Team observed that the discharge was clear and, at that time, did not appear to be discharging any bottom sludge from the pretreatment tank. The Inspection Team did observe sediment along the discharge area (See Photographs 4, 5 and 7). The Inspection Team asked Ms. Millhouse where the catch basins discharged. Both Mses. Millhouse and Wenschel stated that the storm drains emptied into a retention pond. The Inspection Team followed the drainage system to the rear of the property. Mses. Wenschel and Millhouse pointed to the low lying area located west of the building and directly beneath us. This area was parallel to a paved parking area located at the rear (west) of the building (See Bing® Site View map). Ms. Millhouse stated that this area was the retention pond for the storm drain system and pointed to an area where the water was turbulent and identified this area as the discharge point into the retention pond.

Inspector Rota climbed down the embankment to view the discharge and examine the retention pond. At the bottom of the embankment, Inspector Rota observed a concrete headwall. Green PVC piping was located in the center of the headwall. The PVC piping was approximately 24" in diameter and actively discharging water from the storm drain system into the retention pond. Inspector Rota walked along the edge of the retention pond to gain better access to this discharge point and observed a second concrete headwall with a PVC pipe located to the north of the first

discharge point. The second pipe was located built into the north side of the retention pond and connected the retention pond to Orr's Pond.

As Inspector Rota walked along the edge of the retention pond to access the second pipe location, Inspector Turin, accompanied by Mses. Millhouse and Wunschel followed a clearing/ footpath to this location from a different direction. Inspector Rota reached the second pipe, which was approximately 12-18 inches in diameter, and observed water flowing from the retention pond into the pipe. The end of the pipe was not visible from inside the retention pond. Inspector climbed the retention pond berm and relocated the end of the pipe on the opposite side. Inspector Rota observed water flowing from the end of the pipe and discharging in a north/northeast direction, approximately 5-10 feet, across the land and directly into Orr's Pond.

Inspector Rota returned to the area where Mses. Millhouse and Wunschel and Inspector Turin were standing. Inspector Rota told Ms. Millhouse that there was a discharge from the retention pond that flowed directly into Orr's Pond. Inspector Rota further stated that the lower portion of the pipe between the retention pond and the Orr's Pond was partially submerged because of the height of the water in the retention pond. Ms. Millhouse turned to Ms Wunshel and made a comment about how she thought pumping rate should not have resulted in any discharges to the pond. Inspector Rota stated that he couldn't comment on that topic. Inspectors Rota and Turin told Mses. Millhouse and Wunschell that Orr's Pond is a water of the United States and that the discharge, which Inspector Turin explained was process water, is a direct discharge that required a NPDES permit. Ms. Millhouse asked the inspectors if she should shut down the pumping. The inspectors responded that this was a good idea.

Ms. Millhouse indicated that she wanted to collect samples for analysis before shutting down the pump. The Inspectors agreed with this plan. The Inspection Team and Mses Millhouse and Wunschel walked back to the fire hose and there was a brief discussion between Inspector Turin and Mses Millhouse and Wunschel regarding which parameters the samples should be tested for. Ms. Wunschel went into the facility and returned a few moments later with another staff member and sample bottles. After the sample collection process was completed by the facility, Ms. Millhouse turned off the pump and terminated the discharge at 10:26 a.m.

The Inspection Team held an Exit Briefing and asked Ms. Millhouse to describe the tank clean out process and capacity of the treatment tank and to identify how long the cleaning process has been going on. Ms. Millhouse stated that the pretreatment tank was actually four tanks, each holding approximately 332,000 gal for a total volume of approximately 1.2 million gallons. Ms. Millhouse provided the Inspection Team with a photocopy of document that identified the name and dimensions of the various tanks involved and the total volume for each tank, in gallons. Ms. Millhouse drew two lines on the photocopied document. Between the two lines were the words "Scum Removal" "Rapid Mix" "Flocculators" and "Sed Basins." Ms. Millhouse stated that these tanks were the main tank involved in the clean out. The photocopied document listed the total volume, in gallons, for these units. Ms. Millhouse drew a bracket in the column marked "2 Basins in Service" and stated that the total volume for each basin was calculated by adding up the total gallons identified for the four tanks identified in the brackets and dividing by two (See Attachment).

Inspector Turin asked how long the cleanout process had been going on. Ms. Wunschel responded that the pump out of the first tank had begun on April 18th, but that there were days that they did not discharge. The Inspectors were also told that this was the first year that the water from the tanks was discharged on-site to the catch basins instead of the municipal sewer system. Ms. Millhouse asked the Inspectors whether the facility could receive a permit for these discharges. Inspector Turin indicated that determination would be made by EPA Region I's NPDES office and he couldn't speak to what their decision would be.

Ms. Millhouse indicated that she thought there was a general permit that they could have applied for under the drinking water program, but on additional reflection, acknowledged it was a NPDES permit for drinking water facilities that allows for discharges of filter backwash waters. The Inspectors indicated that they weren't familiar with this permit. Ms. Millhouse commented that she had directed her staff to keep the pump level to a rate that avoided a discharge from the retention pond, but "in their enthusiasm" had apparently failed to do this.

Ms. Millhouse was told that the next step would be for EPA is to write up an inspection report and to confer with the EPA's legal staff and management.

The inspection was concluded at 10:36.

Photograph Appendix

Photograph 1

Vent pipe and tank valve associated with one of the two underground storage tanks located at this area and used to stored filter backwash generated by the GAC. The filter backwash water collected in these tanks are returned to the pretreatment tank and recycled back into the system.

Photograph 2

Photograph of vent pipe, control valve and manhole access to one of the underground storage tanks used to store filter backwash waste stored prior to pretreatment. Water discharged from the Basin #1 of the Pretreatment Tank is visible in the foreground.

Photograph 3

View of the pretreatment tank located directly across the road from the two underground storage tanks used to collect filter backwash waste from the GAC. In the foreground of this photograph is the active discharge of supernatant from the pretreatment tank system (Basin #1). The fire hose is visible on the right side of the pretreatment tank and can be observed hanging from the structure before reaching the ground (marked off by the orange cones in this photograph).

Photograph 4

Discharge of the process water from Basin #1 of the Pretreatment Tank (identified as "raw water" by Water Superintendent, Christine Millhouse). The other end of the yellow hose (not photographed) is located and was observed inside Pretreatment Tank, Basin #1.

Photograph 5

Storm drain located next to the fire hose collected the process waters discharged from Basin #1 of the pretreatment tank.

Photograph 6

Process water discharge (note hose line across the road) flowing past the storm drain photograph in Photograph 5 above, down gradient on asphalt paving past

Photograph 7

Photograph of a manhole cover marked "DRAIN" that was located along the path of the process water discharge.

Photograph 8

Storm drain located down gradient from the fire hose and was the final drainage system entry point for pretreatment process waters that did not enter the access points shown in photographs 5 and 7 above.

Photograph 9

Process water discharge from the stormwater collection system entering the retention pond.

Photograph 10

Process water discharge from the storm water collection system entering the retention pond (different angle).

Photograph 11

Photograph of the discharge from the storm water collection system into the retention pond (the discharge pipe shown in Photographs 9 and 10 is located off the photograph at the bottom left side)

Photograph 12

Photograph of the concrete headwall and PVC pipe exiting the retention pond through the berm of the pond to Orr's Pond, located on the opposite side of the berm.

Photograph 13

PVC pipe (shown exiting the retention pond in Photograph 12) discharging process waters from the retention pond (to Orr's Pond).

Photograph 14

Process water discharge from the retention pond to the ground and overland into Orr's Pond (Orr's Pond is visible at the top right of the photograph).

Photograph 15

Process water discharge from retention pond outfall pipe flowing directly into Orr's Pond.

Photograph 16

Photograph of process water discharge from the pretreatment tank terminated after samples were collected for analysis.

Site View (using BING Maps)

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City of Attleboro, Massachusetts
Water Treatment Facility

KOURTNEY WUNSCHEL
ASSISTANT SUPERINTENDENT

GOVERNMENT CENTER
77 PARK ST.
ATTLEBORO, MA 02703

WEST STREET FACILITY
PHONE: (774) 203-1857
FAX: (508) 223-2271

City of Attleboro, Massachusetts
Water Treatment Facility

CHRISTINE MILLHOUSE
SUPERINTENDENT

WEST STREET FACILITY
1296 WEST STREET
ATTLEBORO MA 02703

OFFICE: 774-203-1850
FAX: 508-223-2271
water@cityofattleboro.us

2opt

2703

Superintendent

+ ONC with Gravel supporting media

1x Year

4 3/4 MGD – 6%

2 feet Head loss or 100 hrs

20 – 40 hrs

Pretreatment –

ADD coagulant + ozone – CM

KW – 2 DPYS to drain

2 outside tanks

Backwash to two outside tanks

↓

Pretreatment

– ozone injection prior to pretreatment

EPCD Bc 332K per

– April 18th – Basin 4

Lower 2 feet

10:26 pumps turned off

10:36 – photo of discharge – of

5/7/13 Attleboro Water Dept
9:00 am 1296 West St
Attleboro, MA 02703

PWS MA4016000

Christine Millhouse, Superintendent
West Street facility
1296 West St
All

Kourtney Wunschel,
Asst. Superintendent

4 GDC with Gravel supporting media

1x Year

4 3/4 MGD - 6%

2 feet Head loss or 100 hrs

20-40 hrs

Pretreatment -
ADD coagulant - CM
+
ozone

Kw - 2 ppys to drain

2 outside tanks

Backwash to two outside tanks

↓

Pretreatment

- ozone injection prior to pretreatment

Epco Bc 332 K per

- April 18th - Basin 4

Lower 2 feet

10:26 pumps turned off

10:36 - photo of discharge - off

5/7/13 ICBA
Attleboro MW Plant

Stage	Number of units	Dimensions (ft)	Total Volume (gallons)		
			4 Basins in Service	**3 Basins in Service**	**2 Basins in Service**
Raw Water (Before Venturi)	1	2x690	16,206	16,206	16,206
Raw Water (After Venturi)	1	3x190	10,041	10,041	10,041
Split at Pretreatment	2	2x45	2,114	2,114	2,114
Scum Removal	4	8x8x15.5	29,681	22,260	14,840
Rapid Mix	4	8x8x15.5	29,681	22,260	14,840
Flocculators	8	17x17x15.5	268,053	201,040	134,027
Sed Basins	4	129x17x15.25	1,000,622	750,467	500,311
Settled Water Effluent Flume	1	3x250	13,212	13,212	13,212
Filters	4	23x19x16	209,201	209,201	209,201
Filter Effluent to Contact Tank	1	3*460	24,309	24,309	24,309
Contact Tank	1	140x10	1,150,873	1,150,873	1,150,873
From Contact Tank to Clearwell	1	3x660	34,878	34,878	34,878
Clearwell	1	78x31x22	397,906	397,906	397,906
Total Plant Volume (gallons)			3,158,415	2,826,406	2,494,397

	Total Plant Retention Time (Hours)		
Raw Water Flow (MGD)	4 basins online	3 basins online	2 basins online
3.00	25.3	22.6	20.0
3.25	23.3	20.9	18.4
3.50	21.7	19.4	17.1
3.75	20.2	18.1	16.0
4.00	19.0	17.0	15.0
4.25	17.8	16.0	14.1
4.50	16.8	15.1	13.3
4.75	16.0	14.3	12.6
5.00	15.2	13.6	12.0
5.25	14.4	12.9	11.4
5.50	13.8	12.3	10.9
5.75	13.2	11.8	10.4
6.00	12.6	11.3	10.0
6.25	12.1	10.9	9.6
6.50	11.7	10.4	9.2
6.75	11.2	10.0	8.9
7.00	10.8	9.7	8.6
7.25	10.5	9.4	8.3
7.50	10.1	9.0	8.0
7.75	9.8	8.8	7.7
8.00	9.5	8.5	7.5
8.25	9.2	8.2	7.3
8.50	8.9	8.0	7.0
8.75	8.7	7.8	6.8
9.00	8.4	7.5	6.7

Filter Effluent to Contact Tank	1	3*460	24,309
Contact Tank	1	140x10	1,150,873
From Contact Tank to Clearwell	1	3x660	34,878
Clearwell	1	78x31x17	307,473
			1,517,533

Retention Times For Chemical Pump Adjustments

Filter Effluent Flow (MGD)	Retention Time (days)	Retention Time (hours)
2.25	0.67	16.19
2.50	0.61	14.57
2.75	0.55	13.24
3.00	0.51	12.14
3.25	0.47	11.21
3.50	0.43	10.41
3.75	0.40	9.71
4.00	0.38	9.11
4.25	0.36	8.57
4.50	0.34	8.09
4.75	0.32	7.67
5.00	0.30	7.28
5.25	0.29	6.94
5.50	0.28	6.62
5.75	0.26	6.33
6.00	0.25	6.07
6.25	0.24	5.83
6.50	0.23	5.60
6.75	0.22	5.40
7.00	0.22	5.20
7.25	0.21	5.02
7.50	0.20	4.86
7.75	0.20	4.70
8.00	0.19	4.55

5/7/13 Attleboro Water treatment plant 9 AM in 1036 →
1296 West St
Attleboro MA

Christopher Millhouse - Supt.

Kourtney Wunschel - Asst Supt.

Panel in brief

Carbon filters replaced ex. year drain & backwash w/ finished ~~to~~ H2O output goes into tank & back into

4 filters ~~or backwashed~~
100 hrs or 7' head loss.

* emptying pre treatment basin that is off line → detention basin (coagulant & ozone add) sludge settling
offline for spring cleaning & clean mechanical insp. 4 tanks done in series, currently draining last tank (taken 2 days to drain

polyal chloride coagulant & ozone injection occurs prior to H2O into pre treatment tanks

(66)

flow from filter backwash goes to underground tank & is fed back to plant intake (not source ponds).

Sludge from pretreatment tanks is pushed out to S.(?) end & into sewer system. Only other discharge is seasonal pump down for Sp. maintenance.

This is 1st year that "supernate" was discharged to

332,000 gal per basin
4 basins

Ap. 18 w/ basin 4, some days w/o pumping

Supt made decision; no notification to treatment plant or other entity

* samples collected by treatment plant staff from hose draining pre-treatment tank.
* Pump turned off & discharge ceased

* just before we left, Supt Made comment about

(67)

having directed staff to keep level in detention ponds below release pipe. Indicates that staff, "in its enthusiasm" (or similar), didn't manage to do this.

Rota, Ken

From: Christine Millhouse <water@cityofattleboro.us>
Sent: Tuesday, May 14, 2013 9:09 AM
To: Rota, Ken
Cc: Turin, David
Subject: Re: Attleboro

Follow Up Flag: Follow up
Flag Status: Flagged

Hello...sorry for the confusion...Basin #1 are the analytical results from the samples collected from the discharge hose. Raw Water are the results from our routine sample collected from the discharge side of our pump. Essentially the Raw Water sample is pond water. No chemicals have been added at that point.
We included the raw water just for comparison.

----- Original Message -----
From: Rota, Ken
To: Christine Millhouse
Cc: Turin, David
Sent: Tuesday, May 14, 2013 8:56 AM
Subject: RE: Attleboro

Thanks for the analytical Christine.

The only question I have at this time is about the headings "Raw Water" and "Basin #1?". I'm not sure what the designations "Raw Water" and "Basin #1" are referring to. Dave and I had requested, among other things, that BOD, coliform and aluminum be tested for the discharge we observed from the hose. I'm assuming the data for "Basin #1" is the discharge from the hose since it has the results for these analytes. If you can confirm this and explain why there are two sets of data (and clarify what the terms "Raw Water" and "Basin #1" represent), that would be helpful.

Ken

Kenneth B. Rota, Senior Enforcement Coordinator
US EPA, Region 1
Enforcement Office (OES-04-4)
5 Post Office Square, Suite 100
Boston, MA 02109-3912
(617) 918-1751

From: Christine Millhouse [mailto:water@cityofattleboro.us]
Sent: Monday, May 13, 2013 3:42 PM
To: Rota, Ken; Turin, David
Subject: Attleboro

Hello,

Attached is the sample analysis table that has been updated with the BOD results (highlighted in yellow).

Please let me know if you need additional information.

Regards,
Christine
Christine Millhouse
Water Superintendent
City of Attleboro
77 Park Street
Attleboro, MA 02703
774 203 1850

City of Attleboro, Massachusetts

WATER DEPARTMENT
Government Center, 77 Park Street
Attleboro, Massachusetts 02703
Phone 774-203-1850 ♦ Fax 508-223-2271

Sample Results for Pretreatment Basin #1
Sample Date: May 7, 2013
All parameters analyzed at the Attleboro Water Department except for those listed as analyzed by Netlab.

Parameter	Date Analyzed	Raw Water Results	Basin #1 Results	Units	Analyst
HPC	4/24/2013	260		CFU/mL	M. Rebelo
HPC	5/7/2013		320	CFU/mL	M. Rebelo
Turbidity	5/7/2013	1.93	1.80	N.T.U.	M. Rebelo (Raw), K. Wunschel (basin)
pH	5/7/2013	7.25	7.28	pH units	M. Rebelo (Raw), K. Wunschel (basin)
Color	5/7/2013	32	32	Color units	M. Rebelo (Raw), K. Wunschel (basin)
Alkalinity	5/7/2013	24.4	21.1	mg/L	M. Rebelo (Raw), K. Wunschel (basin)
Conductivity	5/7/2013	445	465	µS/cm	M. Rebelo
Total Manganese	5/8/2013	0.220	0.361	mg/L	M. Rebelo
Dissolved Manganese	5/8/2013	0.044	0.206	mg/L	M. Rebelo
Total Iron	5/8/2013	0.222	0.058	mg/L	M. Rebelo
Dissolved Iron	5/8/2013	0.000	0.000	mg/L	M. Rebelo
Total Coliform	5/1/2013	Present		P/A	M. Rebelo
Total E. coli	5/1/2013	Absent		P/A	M. Rebelo
Total Coliform	5/7/2013		Present	P/A	M. Rebelo
Total E. coli	5/7/2013		Absent	P/A	M. Rebelo
Coliform	5/7/2013		13	Per 100 mL	Netlab
E. coli	5/7/2013		<1	Per 100 mL	Netlab
BOD	5/7/2013		<4	mg/L	Netlab
Total Settleable Solids	5/7/2013		928	mg/L	Netlab
Total Aluminum	5/8/2013		2.18	mg/L	Netlab

6/13/13 Attleboro WPCF - 774-203-1820
IPP Office - 774-203-1823

Sewer Rate $8.65/CF Sewer fee is 90% of actual meter reading

9:30am Aaron Dumont 70K/DAY

I4 - 1.3 mg/l Pretreatment
Meters installed prior to April 11th
Discharge

9:08 - Paul Kennedy - 774-203-1821 Supt. WW
Left a message

4h 1:25pm Paul Kennedy - Aug or Sept 2012 meter installed

- Sludge 2x shift - DID NOT KNOW HOW MUCH

OPEN a valve for 10 minutes

5/2 - email to John Reed 210 ug/l ⇒ 122 ug/l

JR to PK 5/3 - email forwarded

- DAILY REPORTS 6/2-6/8 - 6K

[illegible] - sludge 2x shift