

CASE REPORT  
Division of Environmental Public Health  
Water Programs Section

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Type of Violation(s): Drinking Water  
Date Submitted: June 25, 2010

**VIOLATOR**

City of Boca Raton Utility Services  
Chris Hilfrich, Utilities Director  
1401 Glades Road  
Boca Raton, Florida 33431

**LOCATION OF VIOLATION**

City of Boca Raton – Drinking Water Treatment Plant and Distribution System

**NATURE OF THE VIOLATION(S)**

The Division of Environmental Public Health (Division) has been investigating complaints filed by a former City of Boca Raton (City) utility employee and City records indicating possible violations of the drinking water regulations of Chapters 62-4, 62-550 and 62-555 of the Florida Administrative Code (F.A.C.) and Article 15, of the Palm Beach County Unified Land Development Code (ULDC).

This case involves the following issues:

- Operation of a drinking water distribution system with a minimum gauge pressure of less than 20 pounds per square inch (p.s.i.);
- Notification to the Division when the drinking water distribution system pressure falls below a minimum gauge pressure of 20 p.s.i.;
- Collection of two consecutive days of satisfactory bacteriological sample results from an affected area of a low pressure incident;
- Installation of improper cross-connection controls at residential properties served by reclaimed water;
- Failure to implement the approved cross-connection control program after deficiencies at residential properties served by reclaimed water were identified;
- Notification to the Division and the State Warning Point upon re-discovery of an illegal chemical injection system at the Boca Arbor Club Apartments;
- Collection of water quality parameter samples as required under the Federal Lead and Copper Rule;

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- Placing a well into service without prior Department approval; and
- Collection of repeat samples following total-coliform-positive test results in the drinking water distribution system.

### System Pressure Issues

Rules 62-555.320(15)(a)2<sup>1</sup> and 62-555.350(7)<sup>2</sup>, F.A.C. establish the requirement for the City to design and operate its drinking water distribution system for a minimum operating pressure of 20 p.s.i. throughout the system and up to each customer's point of connection (Water Meter).

The rules do not specify any system pressure monitoring requirements. In addition, the rules do not establish any specifications for the type(s) of acceptable pressure sensors nor their proper location(s). The decision to monitor pressure in the drinking water distribution system, along with the type(s) and location(s) of any pressure sensors, is left to the utility operating and maintaining the system.

Information<sup>3</sup> provided by the City indicates that they have been monitoring system pressure since the early 1970's. In early 2008, the City was operating and maintaining twelve (12) pressure sensors located throughout the drinking water distribution system. Following a low pressure incident on February 6, 2008, the City properly notified the Department and issued a "Precautionary Boil Water Notice" for the affected area. In response the City questioned the requirement to monitor pressure and after learning that it was not a regulatory requirement elected to remove most of the pressure sensors in their distribution system. The City's position was "*why monitor if all it can do is get us in trouble*" and although the Division explained that it could help reduce the area impacted by an event the City went forward and removed most of the pressure sensors. Currently the City has five (5) pressure sensors in service (Water Treatment Plant, 3 – Water Repump Stations, & Yamato Road).

On October 22, 2008 the Department received correspondence<sup>4</sup> from Ms. Christine Ferrigan that reportedly documented low pressure readings within the City of Boca Raton's drinking water distribution system. The data included graphically presentations of the pressure readings within the drinking water system collected from seven (7) City owned and operated lift stations. The information indicated the City had recorded pressure levels below 20 p.s.i. on twenty-two separate occasions. At the time the information was provided Ms. Ferrigan was an employee of the City of Boca Raton's Utility Services, she had provided information to the Florida Department of Environmental Protection (FDEP) related to other potential violations and was seeking protection from FDEP under the "Whistle Blower" laws.

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<sup>1</sup> Attachment 1, Rule 62-555.350(15)(a)2, F.A.C.

<sup>2</sup> Attachment 2, Rule 62-555.350(7), F.A.C.

<sup>3</sup> Attachment 3, "City of Boca Raton Water Distribution System – Pressure Sensor Locations", Received July 8, 2009 in Response to Warning Letter WP-084-09

<sup>4</sup> Attachment 4 – October 17, 2008 Letter, Christine Ferrigan, Utility Programs Coordinator, City of Boca Raton

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On February 20, 2009 the Division requested information<sup>5</sup> from the City related to the data provided by Ms. Ferrigan. On March 9, 2009 Division staff reviewed the City's data and determined the data provided by Ms. Ferrigan was valid, simply meaning, the data submitted was actual data collected and recorded by the City.

The Division also discovered that the some of the pressure sensors, mainly Lift Station #84, had been located downstream of a "reduced pressure zone" backflow prevention device. The Division determined that the location would impact the pressure readings by a set amount resulting in recorded pressure readings below the actual readings within the distribution system. The Division also determined that the recorded pressure values could be used to evaluate distribution system pressure by adjusting the readings with the design/actual pressure drop values for the Series 825Y backflow prevention device. The 825Y specification sheet<sup>6</sup> reports minimum pressure drops across the assembly of 5 p.s.i. during flow conditions and 2 p.s.i. during no flow conditions. Based on the specification sheet, the Division determined that 8 of the 22 incidents reported in Ms. Ferrigan's October letter required further investigation.

On March 27, 2009 the Division met informally with the City's Utility Director and discussed the findings of the investigation. The Utility Director was provided a proposed Consent Order<sup>7</sup> to review and consider for purposes of resolving the violations. During the meeting the Utility Director requested 2 weeks to review the proposed Consent Order because the City was involved in disciplinary actions against Ms. Ferrigan.

In response to the proposed Consent Order the City's hired attorney (John J. Fumero) issued a letter<sup>8</sup> on April 14, 2009 to the Health Department Director discrediting the Division staff, the initial findings of the investigation and suggesting that investigation be closed.

On April 24, 2009, after the City declined the offer to resolve the issue through a Consent Order, the Division issued Warning Letter WP-084-09<sup>9</sup> addressing several issues including the low pressure issue. Through the Warning Letter the Division requested additional information in accordance with DEP Rule 62-550.730(1)(i), Florida Administrative Code.

On May 5, 2009, in response to the Warning Letter the City's hired attorney submitted a formal Public Records Request<sup>10</sup> to the Department's attorney. The information requested by the City's hired attorney was provided.

On July 8, 2009 the City's hired attorney provided a response<sup>11</sup> to the Warning Letter. Attached to the response was a Letter Report<sup>12</sup> from a professional engineer offering an opinion of the

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<sup>5</sup> Attachment 5 – February 20, 2009 Request, Darrel J. Graziani, P.E., Environmental Administrator, PBCHD Water Programs

<sup>6</sup> Attachment 6 – Specification Sheet, Series 825Y Reduced Pressure Zone Assemblies

<sup>7</sup> Attachment 7 – Proposed Consent Order addressing the low pressure incidents

<sup>8</sup> Attachment 8 – April 14, 2009 Response to the Proposed Consent Order, John J. Fumero, Lewis, Longman & Walker, P.A.

<sup>9</sup> Attachment 9 – April 24, 2009 Warning Letter, John O'Malley, P.G., R.S., Director, Division of Environmental Public Health, PBCHD

<sup>10</sup> Attachment 10 – May 5, 2009 Public Records Request, John J. Fumero, Lewis, Longman & Walker, P.A.

<sup>11</sup> Attachment 11 – July 8, 2009 Warning Letter Response, John J. Fumero, Lewis, Longman & Walker, P.A.

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validity of the pressure data recorded by the City. In addition to the Letter Report, the City had previously provided a copy of the November 2008 Hydraulic Modeling report<sup>13</sup>

Within the Warning Letter the Division requested that the City install pressure gauges at Lift Station 84. On December 11, 2009 Division Staff (Darrel Graziani & John O'Malley) met with the City's Utility Director at the lift station and conducted a number of tests. The findings of the site visit were documented in an e-mail<sup>14</sup> and confirmed the Division's position that during no flow conditions the recorded values can be used to evaluate distribution system pressure.

The Division's review of the electronic pressure data provided by the City in response to the Warning Letter noted an issue associated with the information submitted by Ms. Ferrigan and the information provided to the Division staff on March 9, 2009 by the City. The issue was addressed by the City with the submittal of additional information (1-minute data points vs. 1-hour data points) on March 11, 2010<sup>15</sup>.

On March 18, 2010 the Division completed its review of the City's pressure data and issued a request<sup>16</sup> to the City for a description of each low pressure event identified. On April 7, 2010 the City's hired attorney provided a general response<sup>17</sup> to all of the low pressure readings identified by the Division.

The Division believes that it is important to determine *when* the City became aware of the low pressure readings, *what* the City knew about the pressure readings, and *why* they decided the City did not have to comply with the notification requirements. The City respond to the March 18, 2010 request for clarification for each event did not address each event and the Division was placed in a position to rely on the information provided.

The July 8, 2009 Letter Report and the November 2008 Report indicate that the City was aware of the low pressure data as early as August 14, 2007. The July 8 2009 Letter Report appears to "White-Wash" the November 2008 report as it relates to the scope of the original project and their findings. Specifically the July 8, 2009 Letter Report states that the City hired the consultant to "*...update the model including insertion of new pipes in the computer model and verification of the accuracy of the model against several hydrant pressure flow tests and pressure logged at several of Boca's facilities, including Wastewater Lift Station 84 and the Hidden Valley Pump Station.*" In addition, the July 2008 Letter report now concludes the calibration issues with the model in the Hidden Valley Area were the result of the use of the pressure sensors data and not the closed valves in the drinking water system as reported in the November 2008 Report. The

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<sup>12</sup> Attachment 12 - July 8, 2009 CDM Letter Report, Ernest C. Sturtz, P.E., Associate, Camp Dresser & McKee, Inc.

<sup>13</sup> Attachment 13 - November 2008 Report, "City of Boca Raton, Water Transmission Systems Hydraulic Modeling Update", CDM

<sup>14</sup> Attachment 14 - December 11, 2009 e-mail Boca Raton Drinking Water System, Darrel J. Graziani, Water Programs, PBCHD

<sup>15</sup> Attachment 15 - March 9, 2010 Response Letter to request for additional information on the electronic pressure data, John J. Fumero, Rose, Sundstrom & Bentley, LLP

<sup>16</sup> Attachment 16 - March 18, 2010 e-mail regarding the Pressure Data Review, Darrel J. Graziani, Water Programs, PBCHD

<sup>17</sup> Attachment 17 - April 7, 2010 Response Letter to the request for information on the individual low pressure events, John J. Fumero, Rose, Sundstrom & Bentley, LLP

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July 2009 Letter Report appears to be either fabricating the project scope and findings or the November 2008 Report was intentionally written to avoid public disclosure of the issue.

The Division requested clarification<sup>18</sup> of the scope and findings of each report. On May 19, 2010 the City's hired attorney responded<sup>19</sup> to the request. No response has been received from the consultant as of this date.

Based on the information and data collected by the Division the following is known:

- The City located, installed, operated and maintained pressure sensors within its drinking water distribution system since the early 1970's;
- The City knew of the low pressure issues as early as August 14, 2007 and was unable to identify the cause of the low pressure readings in the Hidden Valley Area;
- The City obtained outside consultants to investigate and identify the cause of the low pressure problem;
- The CDM reports indicate that the City had knowledge of the low pressure readings in the Hidden Valley Area prior to the Division receiving Ms. Ferrigan's complaint.
- The pressure data obtained from the City for the period January 1, 2007 and May 27, 2009 shows at least 53 days when pressure was recorded at levels below 20 p.s.i.;
- The pressure data includes several extremely high and low values (>95 p.s.i. and <1.0 p.s.i.) that the Division eliminated from the data set as valid readings;
- For Lift Station 84 the Division identified two days, September 8, 2007 and September 15, 2007<sup>20</sup> when the adjusted pressure readings for the drinking water system were below 20.p.s.i.; and
- The City had not been reporting all the low pressure incidents/readings to the Division prior to the February 6, 2008 incident.

The results of the investigation revealed two incidents where system pressure was most likely below 20 p.s.i. based on the best available data. Each incident lasted for less than 3 minutes. During these periods the Division does not believe that the drinking water distribution system was compromised to an extent that would have required a Boil Water Advisory for the area.

The results of the investigation revealed that the City was aware of the low pressure readings in the drinking water distribution system and elected not to notify the Division in accordance with

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<sup>18</sup> Attachment 18 – May 12, 2010 Letter from D. Graziani, PBCHD to E. Sturtz, CDM.

<sup>19</sup> Attachment 19 – May 19, 2010 Letter from J. Fumero to D. Graziani, PBCHD

<sup>20</sup> Attachment 20 – Lift Station 84 Pressure Data for September 8 and 15, 2007

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PBC Environmental Control Rule II Drinking Water Supply Systems<sup>21</sup> as required. The Division believes that the City's failure to provide notification is a violation of ECR II. Further the Division believes that City's failure to provide notification was an intentional act to conceal an unexplainable problem and source of complaints in the Hidden Valley Area.

**Residential Backflow Prevention Issues**

Rule 62-555.360, F.A.C.<sup>22</sup> establishes a requirement for community water systems, and all public water systems that have service areas also served by reclaimed water systems regulated under Part III of Chapter 62-610, F.A.C., to establish and implement a routine cross-connection control program to detect and control cross-connections and prevent backflow of contaminants into the water system. The rule requires a written plan that is developed using recommended practices of the American Water Works Association set forth in Recommended Practice for Backflow Prevention and Cross-Connection Control, AWWA Manual M14, as incorporated into Rule 62-555.330, F.A.C. Implementation of the rule requires the water systems to enforce their program. It is the responsibility of the Division to enforce the requirement to have a program and ensure that it is being followed by the water system.

Information available to the Division<sup>23</sup> indicates that Ms. Christine Ferrigan approached the Florida Department of Environmental Protection (FDEP) to report several compliance issues associated with the City of Boca Raton in early 2008. The FDEP investigation was concluded without any formal enforcement actions. This resulted in Ms. Ferrigan elevating her concerns to Mr. Larry Morgan Chief Deputy General Counsel, Florida Department of Environmental Protection<sup>23</sup>. In response to Ms. Ferrigan's letter to Mr. Morgan, Ms. Lisa Self of the FDEP's Southeast District Office prepared a response<sup>24</sup>. Within her response, Ms. Self advised the FDEP's Southeast District Manager that the cross-connection control issue was under the jurisdiction of the Division.

On March 24, 2009 the Division became aware of the FDEP's conclusions following review of a press release<sup>25</sup>. The basis of Ms. Ferrigan's complaint is that the City installed single check valves in areas where dual check valves were required by Rule 62-555.360(5), F.A.C.; that the City became aware of the violations in February of 2006; and that the City knowingly and intentionally deceived the FDEP and Division about the violations.

The Division's investigation included a review of the City's Cross Connection Backflow Prevention program<sup>26</sup>. The Division's review noted that the City's program addresses "Auxiliary Water Supply" and requires backflow prevention devices as required by D.E.R. regulation Chapter 17-22 (now Chapters 62-550 and 62-555, F.A.C.)

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<sup>21</sup> Attachment 21 – SECTION 7, ARTICLE 15, HEALTH REGULATIONS, CHAPTER B (ENVIRONMENTAL CONTROL RULE II) DRINKING WATER SUPPLY SYSTEMS

<sup>22</sup> Attachment 22 – Rule 62-555.360, F.A.C.

<sup>23</sup> Attachment 23 – November 5, 2008 Letter from C. Ferrigan to Larry Morgan, Chief Deputy General Counsel, Florida Department of Environmental Protection.

<sup>24</sup> Attachment 24 – November 24, 2008 e-mail from Larry Morgan to C. Ferrigan.

<sup>25</sup> Attachment 25 – March 24, 2009 e-mail from Tim O'Connor, PBCHD Public Information Officer to Mr. Darrel Graziani, PBCHD Water Programs

<sup>26</sup> Attachment 26 – The Boca Raton Cross Connection Backflow Prevention Ordinance, dated 1-23-1990.

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The Division reviewed the City's August 2007 Annual Reuse Report<sup>27</sup>. The report included three cover pages distributing the report to different locations (two signed by Ms. Ferrigan and one signed by Mr. Donald M. Kree, Quality Control Manager, City of Boca Raton, Utility Services Department). Page 7 of 9 of the Annual Reuse Report, Part VIII – Cross-Connection Control Activities, Item 1 is marked "No" and an explanation provided. The Division was also provided a different version<sup>28</sup> of the explanation prepared by Ms. Ferrigan which was not provided by the City as part of the Division's record request. In addition, Ms. Ferrigan provided an internal memo<sup>29</sup> regarding the Backflow/Cross Connection Program and Reclaimed System that was not provided by the City as part of the Division's record request.

Rule 62-555.360(5), F.A.C. allows for the use of dual check valves at residential properties served by reclaimed water unless the local rules or other hazards require a greater level of backflow prevention. Reclaimed water service is considered to be an auxiliary water supply and under the City of Boca Raton's program requires a backflow prevention device.

In the response<sup>11</sup> to the Division's Warning Letter<sup>9</sup> it was reported that the "*City staff found no credible information or data related to the installation, or operation of, any single check valves in the system for residential reclaimed water customers.*" In a separate letter<sup>30</sup> the City's hired attorney again re-stated their findings that the City has no record that single check valves were ever purchased or installed at potable water meters where reclaimed water was used.

The City's response to the Division records request included receipts<sup>31</sup> for the purchase of dual and double check valves beginning in May of 2006 and ending in November 2007 and the list of residential homes with reclaimed water service<sup>32</sup>. Review of the invoices noted that 834 backflow devices were purchased by the City at a cost of about \$48,000. Twenty of these backflow devices were dual check valves and the remainder **non-testable** double check valve assemblies.

The City has reported several times<sup>11, 15, & 30</sup> that they have no records of the purchase or use of single check valves at homes with reclaimed water service. In the City's November 7, 2007 internal memo<sup>29</sup> the Utility Director reports "*We also are aware that during the replacement program that single checks were also installed over the past 10 years; however, as of today all but 7 have been replaced.*"

The City's response to this matter has not been consistent. In the August 2009 letter<sup>30</sup> it is reported that only 6 of the addresses have reclaimed water service and the City's inspections in July 2009 shows that all the homes have dual check valves. Given that the City's corrective action plan required the replacement of the single check valves by October 31, 2007 their findings does not surprise the Division. In the March 2010 letter<sup>15</sup>, drafted in response to the

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<sup>27</sup> Attachment 27 – City of Boca Raton's Annual Reuse Report for October 1, 2005 through September 30, 2006, Dated August 13, 2007, Cover Pages, Explanation of Annual Reuse Report and page 7 of 9.

<sup>28</sup> Attachment 28 – City of Boca Raton Letter Head, file P:\Ferrigan\AnnualReclaimReport.doc, unsigned and undated.

<sup>29</sup> Attachment 29 – November 7, 2007, City of Boca Raton Memorandum from C. Hilfrich to C. Ferrigan

<sup>30</sup> Attachment 30 – August 6, 2009 letter from J. Fumero to D. Graziani – "Response to False Allegations"

<sup>31</sup> Attachment 31 – City of Boca Raton Receipts for the purchase of backflow prevention devices.

<sup>32</sup> Attachment 32 – City of Boca Raton's List of Residential properties with reclaimed water service.

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Division's identification of the internal memo<sup>29</sup> to the City, it is reported that the City was replacing the *existing dual check valves with new dual check valves for 7 homes* with addresses provided.

Based on the information and data collected by the Division the following is known:

- Prior to August 13, 2007, the City had knowledge of a problem with its cross-connection control program in areas served by reclaimed water.
- That on July 20, 2007, the City's Utility Coordinator (C. Ferrigan) certified the truth, correctness and completeness of the Annual Reuse Report<sup>27</sup>.
- That on August 13, 2007, the City's Quality Control Manager (D. Kree) submitted the Annual Reuse Report<sup>27</sup> to the FDEP including the finding that the City was not actively implementing its cross-connection control program within the areas served by reclaimed water.
- That the City's Utility Coordinator (C. Ferrigan) was so concerned over the issue and the City's failure to notify the regulatory agencies of their findings that she sought protection from the FDEP as a whistle blower.
- That the City's cross-connection control program<sup>26</sup>, in effect on August 13, 2007, required an approved double check valve assembly (Sec. 17-194(3)(c)2.).
- That the FDEP regulations<sup>22</sup> allow use of dual check valve for residential properties with reclaimed water service. As an auxiliary water source the FDEP's regulation allows for a backflow prevention device that provides a lower level of protection than that required by AWWA's M-14 Standard and the City's cross connection control program.
- That the City did not identify or report the problem to the Division upon learning of it. This resulted in the Department being unable to inspect or verify any of the allegations, the City's reported findings or the City's corrective actions.
- That the Annual Reuse Report<sup>27</sup>, the draft explanations<sup>28</sup>, and the internal memo<sup>29</sup> all address an issue associated with the areas served by reclaimed water. None of these documents specifically reports or states that the City had single check valves on residential properties with reclaimed water service. However, they all address a common compliance issue.
- That the City's use<sup>32</sup> of non-testable double check valves on potable single family water meters at properties with reclaimed water does not comply with the City's approved cross-connection control program<sup>26</sup>. This is based on the program's requirement that this type of device be *readily accessible for in-line maintenance and testing*.



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- That the City's approved cross-connection control program establishes a maximum of 30 days to correct a violation and penalties of up to \$500 per day for individual's failing to comply with program.
- That dual check valves, as required by the DEP regulation<sup>22</sup>, provide less protection than spring loaded double check valve assemblies.

The City reported the problems to the FDEP's wastewater program after completing its own investigation and initiating corrective actions. The City negotiated a corrective action schedule with the FDEP and completed most of the corrective actions without reporting the problem to the Division. In November 2007 the corrective actions had not yet been completed as noted in the internal memo<sup>29</sup>. Because the alleged violations were not reported to the delegated drinking water program, the Division is relying on the approved Cross-Connection Control Program<sup>26</sup>, Annual Reuse Report<sup>27</sup> and the internal memo<sup>29</sup> to evaluate compliance. The City was unable to produce any work orders or other documentation related to field work associated with the check valve replacements.

Based on the information available, the Division believes that the City was not implementing its Cross-Connection Control Program<sup>26</sup> as approved. The information indicates that in July 2007 the City did not have an adequate system in-place to document and track the requirements of its cross-connection control program<sup>26</sup> and as a result was forced to report that they were not actively implementing and enforcing it. In addition, the City failed to take immediate corrective actions as required by Rule 62-555.360(3), F.A.C.<sup>22</sup> upon learning of the potential violations and cross-connections.

#### **Boca Arbor Club Chemical Injection System Issue**

On December 16, 2008 the City of Boca Raton filed a complaint<sup>33</sup> related to the unpermitted construction and operation of two chemical injection systems within its drinking water distribution system. Because of the nature of the incident, the City was asked if they had notified the State Warning Point and when they responded "no" they were advised by D. Graziani to do so as soon as possible. On December 16, 2008 the Division staff visited the sites<sup>34</sup> and confirmed the construction of the chemical injection systems. During the site visit the systems were not in operation.

On December 22, 2008 the City of Boca Raton issued a letter<sup>35</sup> to the property owner documenting the findings of the City's investigation. In the letter the City reports that on November 18, 2008 they were notified of the systems; that they investigated the systems; and that they disconnected the systems from the City's water main. The City further reported in the letter that they had no knowledge of the systems prior to November 18, 2008.

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<sup>33</sup> Attachment 33 – December 16, 2008 – Complaint Record on the Chemical Injection System

<sup>34</sup> Attachment 34 – December 16, 2008 e-mail and pictures of the Chemical Injection Systems

<sup>35</sup> Attachment 35 – December 22, 2008 City of Boca Raton Letter to the Boca Arbor Club.

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Based on the City's response the Division initiated enforcement actions against the property owner and eventually their engineer. Information obtained by the Division was used to negotiate a settlement with the engineer. A Consent Order is being drafted.

The Division's investigation noted the following:

- The City provides drinking water to the Boca Arbor Club Apartments.
- During a property transaction, a site assessment<sup>36</sup> noted elevated levels of lead in drinking water tap samples collected from the Boca Arbor Club Apartments.
- The assessment reports that the City of Boca Raton (D. Kree) was contacted regarding the high lead levels.
- The City declined to assist with corrective action (pages 9 & 10, Attachment 36).
- The City was sent a letter on January 31, 2000<sup>37</sup>, in response to a call from the City related to construction activities at the Boca Arbor Club Apartments.
- The engineer is willing to testify that the letter<sup>37</sup> was sent to the City and that City staff visited the construction site.
- An interview with the recently departed Jim Pierce of the City of Boca Raton noted that Mr. Pierce was not familiar with the engineer or the project. Mr. Pierce did not remember receiving the letter<sup>37</sup> nor discussing the matter with anyone prior to November 18, 2008. Mr. Pierce did acknowledge that he has and does receive mail that is addressed to City Hall.

The Division's Warning Letter<sup>9</sup> noted that the City had not contacted the State Warning Point<sup>38</sup> as required by Rule 62-555.350(10), F.A.C.<sup>39</sup> as of April 24, 2009. In the response<sup>11</sup> to the Warning Letter<sup>9</sup>, the City's hired attorney down played the event as not a big deal based on their investigation. The response<sup>11</sup> was significantly different from that of the City's December letter<sup>35</sup> which addressed "tampering" and security issues with a threat of possible imprisonment of up to 20 years and a civil penalty of up to \$1,000,000.

Based on the information obtained through its investigation, the Division believes that the City was questioned by the current owners of the Boca Arbor Club Apartments about the chemical injection systems and that between on November 18, 2008 and December 16, 2008 the City conducted an internal investigation looking for any documents, permits or approvals granted by the City before contacting the Division.

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<sup>36</sup> Attachment 36 – Phase II Environmental Site Assessment Report – GID Company, October 1997

<sup>37</sup> Attachment 37 – January 31, 2000 Letter from G. Miller to J. Pierce, City of Boca Raton.

<sup>38</sup> Attachment 38 – State Warning Report Incident Tracker reports (12/12/08 – 12/19/08 & 12/19/09 – 12/23/08)

<sup>39</sup> Attachment 39 - Rule 62-555.350(10), F.A.C.

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The Division's investigation did not find a direct contact between the City, the engineer or the contractors that installed, operated and maintained the chemical injection system. The issue of compliance with the Federal Lead and Copper Rule is not being investigated as part of this enforcement action. However, reports<sup>40</sup> obtained from the engineer indicate that *the chemical inject systems were not secure at all times and that the chemicals injected may have been contaminated*. The Division believes that the City's findings on November 18, 2008 is considered a Level 2 Incident<sup>40</sup> and should have been reported to the State Warning Point immediately in accordance with Rule 62-555.350(10)a), F.A.C.

**Lead and Copper Rule Sampling Issues**

On April 3, 2008 and the Division designated the optimal water quality control parameters<sup>41</sup> (OWQCP) triggering the requirement to conduct monitoring under 40 CFR 141.86(d)(3)<sup>42</sup> with the initial monitoring to be completed by June 30, 2008. At the request of the City, based on time restraints and a chlorine burn, the Division agreed that the first monitoring period would begin on July 1, 2008 and end December 31, 2008. Rule

On August 7, 2009 the Division sent a Short-Form Consent Order and Warning Letter (Case WP-197-09<sup>43</sup>) to the City for failure to collect the required samples during the six-month period beginning on July 1, 2008 and ending on December 31, 2008. On August 24, 2009, the Division met with the City and discussed the proposed settlement. As a result it was agreed that the City did not complete the monitoring. The penalty amount was negotiated and agreed to at \$1,000.

Based on the information and data collected by the Division the following is known:

- The federal rule requires the City to collect samples for water quality parameters after OWQCP are designated.
- OK The City was unable to collect the samples during the initial six-month period because of a free chlorine burn and time restraints.
- The Division accepted the delay and used discretion and did not initiate any formal enforcement actions.
- During the next six-month sampling period the City failed to collect two sets of tap samples.

Based on the information obtained through its investigation, the Division believes that the City failed to collect the required samples in accordance with the requirements of 40 CFR 141.87(a)(2)<sup>44</sup>.

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<sup>40</sup> Attachment 40 – Information (Report & Invoice) provided by Miller Engineering, Inc.

<sup>41</sup> Attachment 41 – April 3, 2008 Letter designating optimal water quality parameters for the City of Boca Raton.

<sup>42</sup> Attachment 42 – 40 CFR 141.86(d)(3)

<sup>43</sup> Attachment 43 – August 7, 2009 Short Form Consent Order and Warning Letter (Case WP-197-09)

<sup>44</sup> Attachment 44 – 40 CFR 141.87(a)(2)

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**Well Release – Well 26 West**

In response to the Division's review of the December 2009 Triggered Monitoring Report, the City was instructed to disinfect and bacteriologically survey Wells 26 and 40 West on January 21, 2010<sup>45</sup> in accordance with Rule 62-550.518(7)(a)<sup>46</sup>. On February 9, 2010 the Division met with the City and discussed the basis of the January 21, 2010 letter requiring the disinfection and sampling. As a result of the meeting it was agreed that the City would comply with the requirement and conduct the required sampling on Well 26 West. The Division agreed that Well 40 West did not have a significant history of testing positive for total coliform and thus would not need to be tested at this time.

Between March 1 and March 10, 2010 the City collected bacteriological samples. On March 18, 2010 the data submitted by the City was invalidated by the Division because the City failed to check/report residual chlorine levels within the well as required. On March 22, 2010<sup>47</sup> the City reported that they had returned the well to service on March 18, 2010 and taken it out of service on March 19, 2010 after learning that the Division invalidated the samples. Rule 62-555.315(6)(d), F.A.C.<sup>48</sup> required approval from the division prior to placing it back into service.

Based on the information and data collected by the Division the following is known:

- That Well 26 West has a history of bacteriological contamination.
- That the current regulations allow for the Division to require a system to disinfect and bacteriologically survey a problem well.
- That the City, when instructed to disinfect and bacteriologically survey Well 26 West, took more than 30 days to comply.
- That the City failed to conduct the sampling in accordance with FDEP requirements and methods.
- That the City placed Well 26W into service without approval from the Division.

Based on the information obtained through its investigation, the Division believes that the City failed to comply with Rule 62-555.315(6)(d), F.A.C. by placing the well into service prior to receiving approval from the Division.

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<sup>45</sup> Attachment 45 – January 21, 2010 Letter to the City of Boca Raton, L. Moore, PBCHD

<sup>46</sup> Attachment 46 – Rule 62-550.518(7)(a), F.A.C.

<sup>47</sup> Attachment 47 – March 22, 2010 e-mail from D. Kree, City of Boca Raton to L. Moore, PBCHD

<sup>48</sup> Attachment 48 – Rule 62-555.315(6)(d), F.A.C.

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**Total Coliform Monitoring**

Rules 62-550.518(7), 62-550.518(9) and 62-555.518(11)<sup>49</sup> establish requirements to collect repeat samples, procedures for invalidating samples, and notification requirements for systems that fail to comply with monitoring requirements.

On April 6, 2010, samples collected by the City at site 7D-H055 tested positive for total coliform. On April 8, 2010 repeat samples were collected from site 7D-H055 along with upstream and downstream samples. The sample collected from site 7D-H055 again tested positive for total coliform with the upstream and downstream samples absent of any total coliform. Following the sampling on April 8, 2010 the City reportedly discontinued sampling at the site.

Rule 62-550.518(7)(d), F.A.C. requires systems to continue to collect samples until either the sample point clears or a violation of the total coliform standards occurs.

On May 6, 2010 the Division received a request to invalidate the routine distribution system samples collected from site 7D-H005 during April 2010.

Based on the information and data collected by the Division the following is known:

- The City collected a total coliform positive sample from site 7D-H055 on April 6, 2010.
- The City collected a repeat sample from site 7D-H005 along with upstream and downstream samples on April 8, 2010.
- The repeat sample from site 7D-H005 tested positive for total coliform.
- The City elected to invalidate the samples themselves without contacting the Division.
- The City elected to discontinue sampling in violation of by Rule 62-550.518(7)(a), F.A.C.
- The City failed to notify the Division within 48 hours as required by Rule 62-550.518(11)(b), F.A.C. of its failure to comply with the monitoring requirements.

Based on the information obtained through its investigation, the Division believes that the City failed to comply with the monitoring requirements of Rule 62-550.518(7), F.A.C. Under Rule 62-550.518(9)a), F.A.C. the Division is responsible for evaluating and invalidating samples. The City's failure to promptly notify the Division of the situation and their decision to stop monitoring without consultation with the Division is inappropriate. The City does not have the authority to quit sampling or invalidate the samples. This is a repeat incident and the first was accepted without formal enforcement.

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<sup>49</sup> Attachment 49 – Rules 62-550.518(3) thru 62-550.518(11), F.A.C.

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**RECOMMENDATIONS FOR CORRECTIVE ACTIONS**

The Division requests that a complaint be filed seeking civil penalties, corrective actions, and recovery of administrative costs as appropriate for the violations.

The corrective actions include the following:

- Installation of sufficient pressure sensors within the City's drinking water distribution system to accurately and adequately monitor system pressure.
- Installation of automatic controls at all ground storage tanks to control flow from the system to the tanks so that a minimum pressure of 35 psig is maintained in the distribution system.
- Revision of the City's Cross-Connection control program to allow:
  - Use of dual-check valves and non-testable double check valves at residential properties with reclaimed water service; and
  - Immediate disconnection of any property not complying with the cross-connection control program.

**SETTLEMENT NEGOTIATIONS**

**System Pressure Issues**

The Division, the Legal Department and the City have met several times. The City has provided responses to the Division's requests for information. The City was not able to provide all the information requested. For example, the Division requested documentation (Work Orders / Field Logs) for the replacement of the single check valves. The City has responded that they did not maintain field records for these activities.

The Division believes, based on the City's position during the various meetings and calls, that they are not willing to settle the system pressure issues and the residential backflow prevention issues through a Consent Order process at this time. These issues are tied directly to the City's litigation with Ms. Ferrigan.

Prior to issuance of the Warning Letter<sup>9</sup>, the Division offered a Consent Order<sup>7</sup> to the City to resolve the system pressure issues. The Consent Order<sup>7</sup> included a penalty of \$18,500 for the City's failure to notify the Division (22 incidents) as required<sup>21</sup>, failure to collect two days of samples (12 incidents) as required<sup>21</sup>, and operation of the system pressure below 20 psig (3 incidents) as required<sup>1, 2</sup>. Based on information collected through the investigation, the Division has calculated the following penalty for the 53 incidents not reported by the City:

ECR II Penalty - \$500 per day maximum at 53 incidents

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- Maximum Penalty - \$26,500
- Base Penalty - [Settlement Purposes - \$4,370]
  - 53 incidents not reported: \$500 for the first and \$25 for each subsequent [**\$1,800**]
  - Economic Benefit - 106 BacT Samples: \$20 per sample [**\$2,120**]
  - Lack of Good Faith Before and After their Discover [**\$450**]

DEP Penalty - \$5,000 per day maximum at 2 incidents

- Maximum Penalty - \$10,000
- ELRA Penalty \$500 per day – [**\$500**]
- DEP Guidelines \$5,000 per day – [**\$5,000**]
  - o 50% reduction based on duration of each low pressure event

**Suggested Penalty Range \$4,870 to \$9,370**

**Residential Backflow Prevention Issues**

The recommended penalty is based on information obtained from the City<sup>27, 29</sup>.

DEP Penalty - \$5,000 per day maximum at 6 violations (Properties)

- Maximum Penalty - \$60,000
- ELRA Penalty \$4,000 per day – [**\$24,000**]
- DEP Guidelines \$4,000 per day – [**\$24,000**]

**Suggested Penalty Range \$12,000 to \$24,000**

**Boca Arbor Club Chemical Injection System Issue**

The City initially agreed to a possible short-form consent order for not notifying the State Warning Point and a penalty of \$1,000. Because the City failed to notify after being advised to call, the penalty has been enhanced 100 percent for lack of good faith following discovery. Settlement is only for not calling the State Warning Point.

DEP Penalty - \$5,000 per day maximum at 1 violation

- Maximum Penalty - \$5,000

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- ELRA Penalty \$1,000 per day – [~~\$2,000~~]
- DEP Guidelines \$2,300 per day – [~~\$4,700~~]

**Suggested Penalty Range \$1,000 to \$4,700**

**Lead and Copper Rule Sampling Issues**

The City met with the Division and was willing to settle for \$1,000.

DEP Penalty - \$5,000 per day maximum at 1 violation

- Maximum Penalty - \$5,000
- ELRA Penalty \$2,000 per day – [~~\$2,000~~]
- DEP Guidelines \$2000 per day – [~~\$2,000~~]

**Suggested Penalty Range \$1,000 to \$2,000**

**Well Release – Well 26 West**

The well is currently not in service nor has it been released. The well was placed into service for two days. The well was modified without obtaining a permit and the Division is using enforcement discretion on the permitting matter requiring an after-the fact permits for all wells that were modified.

DEP Penalty - \$5,000 per day maximum at 2 days

- Maximum Penalty - \$10,000
- ELRA Penalty \$500 per day – [~~\$1,000~~]
- DEP Guidelines \$5000 per day – [~~\$10,000~~]

**Suggested Penalty Range \$1,000 to \$10,000**

**Total Coliform Monitoring**

This is a second incident were the City elected to invalidate samples and stop sampling by itself. The City is not authorized to invalidate the samples as was done in this case. The City avoided documenting a possible MCL violation by taking this action. It is a Division responsibility to make the determination and the City failed to collect the samples as required.

DEP Penalty - \$5,000 per day maximum at 1 day



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- Maximum Penalty - \$5,000
- ELRA Penalty \$2,000 per day – [**\$2,000**]
- DEP Guidelines \$4,000 per day – [**\$4,000**]

**Suggested Penalty Range \$1,000 to \$4,000**

**Total Penalty Ranges \$20,870 to \$54,070**

**ATTACHMENTS**

Attachment 1, Rule 62-555.350(15)(a)2, F.A.C.

Attachment 2, Rule 62-555.350(7), F.A.C.

Attachment 3, “City of Boca Raton Water Distribution System – Pressure Sensor Locations”, Received July 8, 2009 in Response to Warning Letter WP-084-09

Attachment 4 – October 17, 2008 Letter, Christine Ferrigan, Utility Programs Coordinator, City of Boca Raton

Attachment 5 – February 20, 2009 Request, Darrel J. Graziani, P.E., Environmental Administrator, PBCHD Water Programs

Attachment 6 – Specification Sheet, Series 825Y Reduced Pressure Zone Assemblies

Attachment 7 – Proposed Consent Order addressing the low pressure incidents

Attachment 8 – April 14, 2009 Response to the Proposed Consent Order, John J. Fumero, Lewis, Longman & Walker, P.A.

Attachment 9 – April 24, 2009 Warning Letter, John O’Malley, P.G., R.S., Director, Division of Environmental Public Health, PBCHD

Attachment 10 – May 5, 2009 Public Records Request, John J. Fumero, Lewis, Longman & Walker, P.A.

Attachment 11 – July 8, 2009 Warning Letter Response, John J. Fumero, Lewis, Longman & Walker, P.A.

Attachment 12 - July 8, 2009 CDM Letter Report, Ernest C. Sturtz, P.E., Associate, Camp Dresser & McKee, Inc.

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Attachment 13 – November 2008 Report, “City of Boca Raton, Water Transmission Systems Hydraulic Modeling Update”, CDM

Attachment 14 – December 11, 2009 e-mail Boca Raton Drinking Water System, Darrel J. Graziani, Water Programs, PBCHD

Attachment 15 – March 9, 2010 Response Letter to request for additional information on the electronic pressure data, John J. Fumero, Rose, Sundstrom & Bentley, LLP

Attachment 16 – March 18, 2010 e-mail regarding the Pressure Data Review, Darrel J. Graziani, Water Programs, PBCHD

Attachment 17 – April 7, 2010 Response Letter to the request for information on the individual low pressure events, John J. Fumero, Rose, Sundstrom & Bentley, LLP

Attachment 18 – May 12, 2010 Letter from D. Graziani, PBCHD to E. Sturtz, CDM.

Attachment 19 – May 19, 2010 Letter from J. Fumero to D. Graziani, PBCHD

Attachment 20 – Lift Station 84 Pressure Data for September 8 and 15, 2007

Attachment 21 – SECTION 7, ARTICLE 15, HEALTH REGULATIONS, CHAPTER B (ENVIRONMENTAL CONTROL RULE II) DRINKING WATER SUPPLY SYSTEMS

Attachment 22 – Rule 62-555.360, F.A.C.

Attachment 23 – November 5, 2008 Letter from C. Ferrigan to Larry Morgan, Chief Deputy General Counsel, Florida Department of Environmental Protection.

Attachment 24 – November 24, 2008 e-mail from Larry Morgan to C. Ferrigan.

Attachment 25 – March 24, 2009 e-mail from Tim O’Connor, PBCHD Public Information Officer to Mr. Darrel Graziani, PBCHD Water Programs

Attachment 26 – The Boca Raton Cross Connection Backflow Prevention Ordinance, dated 1-23-1990.

Attachment 27 – City of Boca Raton’s Annual Reuse Report for October 1, 2005 through September 30, 2006, Dated August 13, 2007, Cover Pages, Explanation of Annual Reuse Report and page 7 of 9.

Attachment 28 – City of Boca Raton Letter Head, file P:\Ferrigan\AnnualReclaimReport.doc, unsigned and undated.

Attachment 29 – November 7, 2007, City of Boca Raton Memorandum from C. Hilfrich to C. Ferrigan

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Attachment 30 – August 6, 2009 letter from J. Fumero to D. Graziani – “Response to False Allegations”

Attachment 31 – City of Boca Raton Receipts for the purchase of backflow prevention devices.

Attachment 32 – City of Boca Raton’s List of Residential properties with reclaimed water service.

Attachment 33 – December 16, 2008 – Complaint Record on the Chemical Injection System

Attachment 34 – December 16, 2008 e-mail and pictures of the Chemical Injection Systems

Attachment 35 – December 22, 2008 City of Boca Raton Letter to the Boca Arbor Club.

Attachment 36 – Phase II Environmental Site Assessment Report – GID Company, October 1997

Attachment 37 – January 31, 2000 Letter from G. Miller to J. Pierce, City of Boca Raton.

Attachment 38 – State Warning Report Incident Tracker reports (12/12/08 – 12/19/08 & 12/19/09 – 12/23/08)

Attachment 39 - Rule 62-555.350(10), F.A.C.

Attachment 40 – Information (Report & Invoice) provided by Miller Engineering, Inc.

Attachment 41 – April 3, 2008 Letter designating optimal water quality parameters for the City of Boca Raton.

Attachment 42 – 40 CFR 141.86(d)(3)

Attachment 43 – August 7, 2009 Short Form Consent Order and Warning Letter (Case WP-197-09)

Attachment 44 - 40 CFR 141.87(a)(2)

Attachment 45 – January 21, 2010 Letter to the City of Boca Raton, L. Moore, PBCHD

Attachment 46 – Rule 62-550.518(7)(a), F.A.C.

Attachment 47 – March 22, 2010 e-mail from D. Kree, City of Boca Raton to L. Moore, PBCHD

Attachment 48 – Rule 62-555.315(6)(d), F.A.C.

Attachment 49 – Rules 62-550.518(3) thru 62-550.518(11), F.A.C.

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**OTHER INFORMATION**

Since April of 2009, the Division has been investigating the City of Boca Raton as it relates to the compliance issues noted above. The investigation has raised serious concerns over the City's ability to operate and maintain the drinking water system in compliance with the federal, state and local regulations. These regulations are in place to protect the public's health, safety and welfare by ensuring that public water systems provide safe drinking water. Within Palm Beach County, it is the Division's responsibility to monitor and ensure compliance with the regulations including investigating noncompliant activities.

The main concern is the City's apparent "*Cleaning of the Crime Scene*" before the Division can respond to a complaint or conduct an investigation. This type of behavior is unacceptable, is worse than the actual violations, and needs to be corrected. The City's concern that these compliance issues will undermine public confidence in the water system can not override their responsibilities to be truthful.

The Division is aware that the City is engaged in litigation with Ms. Ferrigan over her dismissal. Ms. Ferrigan is seeking protection under the "Whistle Blower" laws. However, this matter is not within the jurisdiction of the Division and should not play a significant role in our enforcement action.