Anderson, Alan

From: Heath Ward <hward@springdalewater.com>
Sent: Tuesday, July 29, 2014 11:24 AM
To: Anderson, Alan
Cc: 'Charles Holt'; dsprouse@springdalear.gov; Chris Weiser; 'Sam Goade'; 'Don May'; West, Alison; Leanna; 'Brad Stewart'; Jennifer; Kim; Ricky; Shawn; Terry; Tim
Subject: Spring Creek
Attachments: Scan40001.PDF

Alan-

I know you have been busy in Little Rock. Here is a summary of activities on this bizarre issue that I am confident Allison has filled you in on. We appreciate her meeting with us earlier in the week.

This is a summary of our mystery issue at Spring Creek. We believe that there may be sewage of some type getting into a section of the stream through the karst formations from an unknown location. Thus far massive and lengthy dye testing over the last 10 days from logical areas upstream have yielded no results. The D.O. levels are acceptable and the fish are thriving and so is wild life. However, our organoleptic observations and other tests tell us something is going on and we are not sure of the source. It may be a private line, septic tank, step system or some other extreme distance sewer issue we have not discovered yet. We have found no evidence it is our sanitary sewer, but we are not ruling it out due to the nature of the geology. We have placed hay bales downstream to prevent and to contain the "migration" of any solids that may be there. We do know the following:

1. We see no immediate threat to public health or to others downstream. There is no known wells or intakes nearby.
2. The wildlife does not seem to be affected. The fish seem to be very active and local wildlife feed off of them.
3. The water seems to be getting clearer with each day we are further away from a rain event. It may be associated with rain events. We continue to look for this as a verifiable clue.
4. The D.O. levels are at 1.0 and seem to be fine.
5. We know there is the presence of some fecal coliform.
6. We know the area in question is fed by multiple springs coming out of the rock.
7. We know it is karst type geology in the area.
8. We have investigated old sewer lines and have found no way they could be discharging into the area.
9. Thus far, no SWU sewers have shown to be contributing, although we continue to test.
10. There is an odor near the area and the wind obviously affects it.
11. The problem seems localized to this small area of the creek.
12. Some persons claim it is seasonal, and comes in the spring and summer. We are still trying to verify this as a possible clue.
13. No one from the public has complained. We believe it is due to it being in a remote area at this time.

We contacted the local ADEQ office last week. Yesterday we toured the site with Alison West and Matt Holden. We covered our actions and plans for next steps in trying to solve this perplexing issue. It was generally agreed that we were doing the right things and taking appropriate measures in this unusual case. A recommendation was made to contact the U of A and talk to a specialist on staff who is a Phd in karst hydrology. This seemed to be a logical person to consult. We will be calling him.

We have also contacted Charlie Holt, our district engineer with ADH. He has no immediate concerns, but has asked us to keep him posted as we are planning to do with ADEQ on this strange and difficult investigation.

Although George's Inc. operates a chicken plant close to the area, there is no evidence that they or the SWU sewer line nearby are contributing to the problem at this time. We are ruling nothing out 100%, but it is low on the likelihood list based on evidence.

Attached is a timeline of the past 14 days actions. A special camera crew is here this morning at a cost of $16,000, we will continue to dye, and our team will cover this at a weekly meeting to discuss next steps. Our plan is to continue to try different things and monitor for clues. Our lab supervisor is looking for other sampling techniques or tests to help us determine a source. At this point we are gathering as many clues as we can.

Our team will meet again next Tuesday at 8:30 a.m. We will send another report as the situation develops. Please call if you have questions.

Heath

Heath A. Ward
Executive Director
Springdale Water Utilities
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TIME LINE AND ACTIONS ASOCIATED WITH INSPECTION OF SPRING CREEK AND COLLECTION SYSTEM.

7/17/14:
Possible contamination noticed in what appears to be a spring feed pool by employee inspecting Spring Creek for potable water or waste water leaks.

Tested suspected spring for chlorine residual, results were negative.

Installed straw bales across pool immediately below spring.

Introduced sewer testing dye via manholes into 30" waste water collection main directly upstream and south of straw bales in pool.

Walked and visually inspected Spring Creek upstream from straw bales in pool to Dry Branch Tributary.

Continued inspecting manholes and dye testing upstream to major sewer junction vault and monitoring pool.

7/18/14:
Attempting to take advantage of lower flow conditions, camera personnel mobilized to camera 30" sewer main between the hours of 3:30- 5:30 AM. Flow still proved too great to camera with our current camera attachments.

Continued dye testing from junction vault using soaked towels dangled in flow to create constant dye stream. Continued to monitor pool throughout day for dye.

Collected 3 samples in pool and delivered to Waste Water Treatment Plant for Fecal Coliform Tests.

Continued walking and inspecting upstream in Spring Creek and its tributaries for any signs of contamination.

7/19/14:
Continued constant dye trail testing from vault and monitored pool throughout day.

7/20/14:
Continued constant dye trail testing from vault and monitored pool throughout day.

7/21/14:
Exhausted supply of dye and reordered more.

Began camera inspection of small diameter sewer mains along N. Thompson to the East and North of the pool.

Using long incremented probe to determine depth, crew inspected manhole inverts for any obvious deterioration of concrete bases that might allow leakage. Nothing definitive was discovered.

7/22/14:
Received shipment of dye in red and green and resumed dye testing collection system upstream from vault in two separate large diameter mains.

WWTP personnel performed several Dissolved Oxygen test above, in and below pool of concern.

Samples were collected above, in and below the pool and tested for Fluoride with the highest reading being 0.3 ppm. From past experience's this is typically the amount of natural Fluoride found in area springs.

Inspection of small diameter lines along N. Thompson utilizing CCTV camera continues.

7/23/14
Relocated dye towels further upstream in collection system to three different large diameter mains.

Dye introduced directly in tributary north of Tyson Berry St. Plant.

Pulled old plans and identified abandoned collection mains upstream from old decommissioned Treatment Plant which is located just west of the spring pool. Located and inspected abandoned mains where they cross Spring Creek and found discharge of neither waste nor ground water from them.

Monitored spring for dye throughout day.

7/24/14:
Inspected spring for dye starting at 3:00 AM during low flow period and monitored rest of day.

Tracked dye introduced in tributary at Tyson Berry St. through isolated holes of water west to Mill St. where water and dye eventually disappeared under stream bed and did not resurface.

Camera crew found both an off set and a small hole in the bottom of a 6" diameter clay line along N. Thompson and east of the spring Pool. Only intermittent flow on this line due to only a couple of services in it.

7/25/14:
Heavily Introduced Dye back into Junction vault upstream from creek crossing and spring pool.

Once again walked and visually inspected Spring Creek and its tributaries upstream from spring pool for any sign of dye.

7/26/14:
Monitored Spring pool for dye throughout day.

7/27/14:
Monitored spring pool for dye throughout day.

7/28/14:
Met ADEQ on site, continued to monitor.

Dye tested offset and hole in 6" clay line along N. Thompson and prepared to dig and repair.

Note:
Additional samples were also collected thru the week by WWTP personnel for more in depth testing.