

Rim Trail Domestic Water Improvement District
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Draft Minutes for the Board of Directors Meeting on July 12, 2013

The meeting was called to order by the Chairman at 9:05 am. A quorum of the Board was present, being Ray Tanner and Dick Johns. The District Manager, Harry Jones, was also present.

The topic of the meeting was the recent turbidity issue affecting stream water. The following is a summary of a July 2nd report on this issue from the District Manager to the Chairman, that was provided to the full Board on July 7th.

- The river system was off-line for much of April, May and June while the new turbidity meter and data logger instruments installed over the winter were being tested. During the tests, high turbidity levels were measured, apparently due to very high concentrations of un-oxidized iron at sizes below 1.0 micron in the raw river water. This causes a yellowish tint to the water but there are no issues with water safety.
- It appeared the high iron content was from Cragin Reservoir water being pumped into the river, which started on May 10th. The treatment plant was designed to deal with a normal range of turbidity, but was not designed to treat the very high concentrations of small, colloidal iron currently appearing in the water. Turbidity measurements after May 10 ran about 7 – 8 times the ADEQ/EPA “secondary standard” which deals with color taste and odor, not health related issues. Turbidity measurements without the Cragin water were at 1/3 to 2/3 of the standard.
- Highland Water Resources and A Quality Water Company, with assistance from SPI, have been evaluating the treatment system to determine why it is not adequately reducing the turbidity and removing the iron. It was discovered that the bag in the filter vessel were not working efficiently because optional metal sealing rings were needed to make a tighter seal. Sealing rings were obtained and installed on June 28.
- On June 25 and 28, additional tests were run but the yellow color remained. After discussions with the treatment plant designer (SPI), it was agreed that it is unlikely the treatment plant will be able to remove these particulates without additional pre-treatment such as flocculation and/or oxidation methods.
- On June 25 – 27, the district’s two water wells went dry and failed to pump. The district was within 20,000 gallons of running out of water. This was partly due to abnormally high summer water usage.
- On June 28, it was necessary to inject some water exceeding the ADEQ turbidity levels into the distribution system. Before doing so, a bacterial test was done to confirm that the water met standards for human consumption. This was resolved two days later when the Cragin system was shut down for repairs, so natural river water was again available and could be mixed with well water becoming available to pump.
- In an effort to reduce the colloidal iron, somewhat higher than normal levels of chlorine are being injected into the raw river water before filtration. The iron may also be reduced by dilution with well water. However, it is expected that at times, we will have to inject additional

discolored water into the distribution system. In addition, some level of reserve funds may be required to fix the problem.

- Highland Water Resources recommends the following actions:
 1. The treatment plant be operated only when storage levels approach unsafe levels and/or when groundwater wells are unable to keep up with demand.
 2. Conservation measures are also encouraged in these times.
 3. The District must engage ADEQ in discussions concerning the realities of the Cragin source and the current filtration plant's capabilities towards amending the permit condition for turbidity.
 4. Contact the Payson Ranger District to open discussions about the possibilities of moving the District's water intake to a diversion point up stream of the Cragin inflow point.
 5. Investigate the costs to add flocculation to the treatment process.

On July 2, 2013 the District Manager sent a report to the Chairman regarding this situation, and also notified the full Board on July 7th.

Both of the Board members expressed strong concern about the lack of any earlier notice regarding the turbidity problem. Harry agreed that he probably should have notified the Board of the situation earlier, but he thought he had the authority to deal with it and did not see a need to involve the Board, especially in view of the time they were having to spend on finalizing the budget.

There was then a discussion of the types of issues the District Manager should handle, and the types that should be escalated to the Board. The Board agreed that it is important for them to be notified of any issues that are out of the norm for day-to-day operations as part of their oversight and budget responsibilities.

This led to a discussion of the District Manager's authority to commit District funds. Ray noted that under the 2013-2014 budget requirements, expenditures for a situation like this would require Board approval, and the commitment of reserve funds would also require Board approval.

Harry suggested that the Board should define in more detail the types of activities and expenditures that the District Manager is authorized to undertake without prior Board approval, which would include definitions for "emergency", "day-to-day operations" and "maintenance/repairs" vs. "upgrades" as used in the budget and the District Manager's agreement. The Board agreed that this should be done, and Dick will develop drafts.

The discussion then turned to the cause of the turbidity issue and what should be done to address it.

It was noted that the yellow color appears to be from Cragin water, but it could also be from river sediment being stirred up when the Cragin water enters the stream, or from runoff such as occurs from thunderstorms. It was also noted that in the past, coloration issues have often cleared up after a few hours. However, the Board agreed that Salt River Project should be approached to discuss the situation, and to help with the District's costs if it turns out the Cragin water is causing the problem.

It was also agreed that discussions should be started with the Forest Service regarding moving the District's water inlet above the Cragin generator. This would involve crossing both Forest Service land and private land. Additional potential sources of uncontaminated water were also discussed.

Harry pointed out that a sample set of 0.5 micron filter bags are on order, which might reduce the turbidity problem at a low cost. If not, we could then run jar tests to determine whether flocculation would be effective. The Board agreed that this should be done.

The Board discussed the recommendations from Highland Water Resources, and agreed to the following.

1. The treatment plant will be operated as little as possible, and we will rely primarily on the two wells. However, if the wells have difficulty producing water, then the river water will be used as necessary to maintain an adequate supply.
2. Conservation measures are not necessary at this time. However, in order to avoid restrictions on water use, the main storage tank will be kept at least half full. If overall water storage drops below 25% of capacity for any reason, water users will be requested to implement appropriate conservation measures such as not watering lawns.
3. Harry will check with Kevin Alexander of SPI to determine whether we are required to notify ADEQ of the iron and turbidity exceedances, whether any penalties are likely, and whether Kevin believes we should request a variance or permit amendment from ADEQ. Harry will report back to the Board, which will decide how to proceed further.
4. Ray will contact the Forest Service to find out who we should deal with if we want to pursue moving the intake pipe. Harry will also ask Mike Ploughe to make an initial inquiry with the Forest Service about this. Actual discussions with the Forest Service will not occur until Ray and Harry report back to the Board and the Board decides how to proceed.
5. The issue of flocculation treatment will be tabled for now.

There being no further discussion, the meeting was adjourned at about 11:30 am.