

**Bear River Water Conservancy District
Board Meeting
Wednesday November 13, 2019 7:00 p.m.
102 W Forest Street
Brigham City, UT 84302**

Minutes

Present: Trustees: Roger Fridal, Charles Holmgren, Russ Howe, Jay Carter, David Forsgren, Jay Capener

Absent: Jeff Scott, Tyler Vincent, Richard Day, Neil Capener, Mark Larson

Staff: General Manager Carl Mackley, Systems Operator Robert Thayne, Administrative Assistant Jill Jepps, Bill Bigelow – Hansen Allen & Luce

Welcome: Chairman Roger Fridal

Invocation: Jay Capener

Pledge of Allegiance: Dave Forsgren

Declaration of Conflicts of Interest: None

Adoption of the Agenda –Chairman Fridal

A motion was made by Board Member Jay Carter to approve the agenda. The motion was seconded by Board Member Jay Capener. All Board Members voted in favor of the motion.

Approval of the Minutes for the Board Meeting held October 23, 2019.

The minutes of the Board Meeting held October 23, 2019 were included with the packet that was provided to the Board Members.

Vice Chairman Dave Forsgren made a motion to approve the minutes for the meeting held October 23, 2019. The motion was seconded by Financial Chairman Charles Holmgren. All Board Members voted in favor of the motion.

Financial Business – Charles Holmgren

The financial statements for October 2019 were prepared and provided to the Board Members. Financial Chairman Holmgren has reviewed the reports. He asked for the Board to approve the financial reports.

A motion was made by Board Member Jay Carter to approve the financial statements as presented. The motion was seconded by Vice Chairman Dave Forsgren. All Board Members voted in favor of the motion.

Presentation of 2019 Amended Budget & 2020 Tentative Budget – Jill Jeppsen

A motion was made by Financial Chairman Charles Holmgren to approve the 2019 Amended Budget as presented. The motion was seconded by Board Member Russ Howe. All Board Members voted in favor of the motion.

A motion was made by Vice Chairman Dave Forsgren to accept the 2020 Tentative Budget as presented. The motion was seconded by Board Member Jay Capener. All Board Members voted in favor of the motion.

Project Updates –Bill Bigelow

Flat Canyon Well – We expected to hit bedrock between 80’ and 150’. We did not hit bedrock until 630’ so we had to quickly readjust our thinking on the well. We inserted an 8” casing down to 630’ with gravel pack around it. The casing has louvers between 430’ and 610’. There was a logging tool run into the bore hole that indicated where we needed to start the louvers. The well driller had a hard time putting the gravel pack in because the drilling mud was so thick, we were not originally planning to drill with mud, they got the gravel in as well as they could and added a 100’ grout seal. The seal was witnessed by a professional grout witness so if this well turns out to be used as a production well, we can get it approved as a public drinking water well. At that point, we made the decision to continue to explore by drilling deeper into the bedrock. We drilled from the 600’ down to 1200’ we found a few but, not a lot of fracture zones. Now that we had the well done, the well driller removed as much of the drilling mud as he could in a short time, about 10 to 15 hours. Then they air lifted the water to get a feel for what the well would produce. We asked him to put a test pump in the well and they ran a couple short pump tests. They ran 200 gallon per minute (gpm) for a little less than 24 hours. The well drew down and never stabilized. We let it recover overnight then ran the test pump at 300 gallons per minute and it drew down to the pump intake in 14 minutes. We concluded the way the well sits today it would probably produce 150 to 175 gpm. The data shows there is still a lot of drilling mud in the gravel zones and it has not been fully developed. As soon as we would stop pumping the water would come back immediately, but the steady yield was not there.

A good well development program is to put some chemicals in the well and surge it with the chemicals to thin the mud and pump it out, then surge the well, again. You then start bringing in the sand, and the big particles are left behind, the small particles will come through and are pumped out. The more you do this the more it yields and eventually you reach the point of diminishing returns. Now you have a fully developed well that won’t produce sand and you get very little draw down. From an engineering standpoint it would be our recommendation to develop the well in this manner.

We air lifted some water out of the well before we drilled deeper and took water samples and sent them to the laboratory. They came back quite good, none of the parameters were over the limits. The water was clear, and it wasn’t warm. However, by the time we put in the test pump we had already drilled down to 1200’, now the temp is about 75 degrees and has a little bit of a Sulphur smell, we believe this is coming from the deeper part of the well. We were able to get some water quality samples today of the combined water and will be able to compare them to the samples taken before we drilled deeper.

We want to seal the bottom of the bore hole (from 630' down) and develop the top portion where the good quality water is. We do not want the bad water from below getting into the good aquifer, so we want to do this soon. We have seen this before; we have seen wells where we have good water quality up high and as you keep drilling deeper and you start getting warmer water with higher mineral content. We have seen it the other way, too where wells that had poorer quality up higher and good water below, so there is no set of rules, it is just what you find. The mineral content of the water combined is in the 800-900 total dissolved solids (TDS) range. It is drinkable but it is a lot higher than you usually see on the east side which is typically 200-300 range as far as TDS. The original samples of this well were in the lower range, so we know the higher portion of the well has good quality water. We are hoping by sealing the bottom and developing the top part we will be able to make the well yield enough to put it in service for drinking water.

To seal the bottom of the well they will fill it with gravel and put a 30-foot concrete plug on top of that. Jim Goddard, a representative of state engineer, is in favor of doing this in order to save the upper part of the well. We want to seal it right away so that the bad water does not come up and spread out. We would like to develop the top right away as well because the longer you wait the harder it will be to remove the drilling mud. It was noted by General Manager Mackley that the money for these two items are included in the amended budget for 2019.

What does this tell us about drilling a second production well? When we test pump a well, we set up a constant rate test. We pump it for 24 hours without letting the flow rate change. Usually most wells will drop fast and then stabilize. We have some scientific equations that will tell us what the long-term drawdown will be and help us predict what kind of effect that will have on any neighboring wells. By using this data, we can determine if the aquifer can support a larger well 100 feet away, and how much interference there would be on other wells. We will get a pretty good answer to those questions by developing and test pumping this well. Another benefit of this development process we are doing is we are keeping an eye on the monitoring wells. There is one at Dewey Springs, one at Mr. Kliger's well and we have a monitoring probe on Dr. Bitner's spring. We will be watching the data from these probes while we are doing the test pumping to see what effect, if any, it has on any of these other wells. This is extremely valuable information for us as a District. General Manager Mackley added he pulled the monitoring data from Mr. Kliger's well today. There was no interference at all during the drilling and testing process of our well. We have learned a lot during this process of drilling a test well.

The project has taken some sharp turns but, we are pleased that we have the possibility to have a good well, something of real value for our investment.

Robbie Thayne –

We are going to replace the fence to the north parking lot with a new chain link fence. The north side is falling into the neighbor's yard and it needs to be replaced.

The operators attended some training this week in North Salt Lake.

We will be replacing the UDOT PRV. We are looking at upgrades to SCADA. It hasn't ever been upgraded and we have added to the system and we have no room for future growth. Tovey Ashby from SKM came up and gave a presentation to us about upgrading. The first step will be to add the generator in Bothwell to SCADA.

The new truck with the crane has been valuable to the operators.

Trustee Reports

Jay Carter – Reported it is getting dry again, we need another rainstorm.

Russ Howe – Reported things are dry in Thatcher, too.

Jay Capener – No report

Charles Holmgren – Reported he will be attending the Bear River Commission meeting on the 19th of this month. The director of Water Resources announced his retirement.

David Forsgren – No report

Roger Fridal – Not much going on in Tremonton related to water.

General Manager's Report – Carl Mackley

Flat Canyon Well Update - Referred to Bill Bigelow's report. General Manager Mackley expressed appreciation for the support of Bill in providing service for the District, especially on this well project.

He also expressed appreciation for Jill Jeppsen for her work in putting together the budget.

We received approval of our funding from Drinking Water Board for the well.

We received our grant for the asset management system. We had a meeting with them a week ago, and the equipment is being ordered. There will be 2 GPS units, which are accurate to 6" and the interface to the system is our phones. They are going to train us on the GIS and help us do everything for a year. It will be really good for us.

Public Comment – No comments

A motion was made by Vice Chairman Dave Forsgren to adjourn the meeting. All Board Members voted in favor.

The meeting adjourned at 8:10 P.M.