

Present:

Mayor Piccolo

Councilmembers: Laurie Tryon, City Recorder
Jeff Nielson Gary Sonntag, Public Works Director
Rick Davis Nick Tatton, Community Director
Richard Tatton Aleck Shilaos, Police Chief
Kathy Hanna-Smith

Others Present: David Hansen, Sam White, Lisa Richens, Ron Brewer, Russell Seeley and Josie Luke

David Hansen of Hansen, Allen & Luce Engineers, provided an overview of the current status of Emma Park Wells #1 and #2. He stated that Well EP1 is completed and will be abandoned and capped off at the time that Well EP2 is abandoned and the property around each well will be reclaimed. He stated that the property owners will continue to be advised of what happens with the property and also asked for their input regarding reclamation.

Mr. Hansen stated that the geological report for EP1 was done by a geophysical logging tool which uses mechanical and atomic gauges to measure down hole conditions. The information is interpreted to help identify formations, faulting, fracturing and potential water producing wells etc. He stated that he had hoped to find more open fractures to find water but that was not the case. The tools that were used by the geologist assists them in predicting what will happen so they are able to decide what steps to take next. Mr. Hansen brought water samples to show the clarity of the water that was found in EP1. The water samples were tested for water quality and because metal values were so high, Mr. Hansen's firm had the samples double filtered. He stated that the lab results seem to show that the majority of the original concerns were alleviated as flows were disappointingly low and it did not appear to be economically feasible to develop the well further. He stated that if the well had produced 200 gallons of water per minute they would have felt comfortable keeping the well producing. But as it was only producing 50-60 gallons of water per minute, it would have been too expensive to keep going. EP1 was drilled to 1937 feet, fractures were sealed, water quality was initially thought to be poor but is likely acceptable as a drinking water source. Mr. Hansen stated that by not going forward with EPI, the amount of \$662,000 was not spent.

Mr. Hansen stated that during an examination of EP2, materials retrieved from lower sections within the hold, the geologist noted fractures but unlike EP1. He stated that the geologist indicated the fractures were not as sealed as those noted in EP1 which gave engineers hope that the well had better conditions. Mr. Hansen stated that the North Horn Formation is expected to be at depths between 1800-1900 feet and the Price River Formation is below that containing fewer slits and clays. The amount of continued fracturing is unknown but at 1795 feet, the drillers noticed significant problems with the drilling tools. He stated that the fracturing and bridging is different than EP1 and anything they have encountered and conditions have changed for this well. He stated that there is a 1 3/4 mile between the two wells. He stated that the material samples of water and dirt are much different from EP1, as the water is much clearer and the dirt samples are very different. He stated that an air lift pump recovery was done in the exploratory borehole with flows at 1,700 feet estimated to be 50-60 gallons per minute and data show a typical recovery curve. However, recovery is slow and shows the well is not high yielding to the depth drilled and water would have to be pumped from 1300' to get it out. Mr. Hansen stated that they have only hit the first fracture set and it's not a high producing well at this point but he would like to see the well drilled deeper to see if water is there. Mr. Hansen received a list of options to continue with drilling from the company doing the work, Layne Christensen Co.

(Increased unit costs result from, less new footage upon which to spread out mud costs, it is highly likely that after a couple of weeks, some cleaning will be required, reduce casing size to maintain upward velocity):

1. New rig necessary to do different type of drilling to 2300 feet would be brought in at \$37,000 to mobilize new rig.
2. Surface conduction casing to maintain upward velocity is necessary at \$10,500
3. Cost to clean the well hole- \$550 an hour for places that are bridged to get back to where they were.
4. Drilling hole to get down- \$45,045.00 and \$41,100.00
5. Maximum Recovery Cost: \$17,600 at 32 hrs x \$550/hr

6. LCM's noted are highly variable can also be expensive and could amount to several thousand of dollars. As proposed, added costs to continue could be: \$133,645 low end, \$211,245 with lost tools, \$211,245 with boring, LCM's.

Mr. Hansen stated that his firm does not agree to the company's Lost Circulation Material (LCM) method as it can be 3-5 times the normal costs and is not always 100% effective. He stated that the company claimed they can get it all out with acid but he does not believe that it will be at 100% removal and believes that the real solution is a mud program.

7. Estimated lost tool cost if drill bit is lost \$60,000.

Mr. Hansen stated he will speak to the company regarding the contract tool recovery charge and see if there is a type of insurance for tools that are broken while drilling or if the company can commit to the first contract where tools were included in the bid. He stated that because flow and water quality have changed, drilling methods also have to change which changes the costs related to the drilling. As drilling gets harder there is a risk that drill bits and other tools can be damaged or break which changes the contract. Mayor Piccolo stated that the City has already invested a half a million dollars and to stop now would be pointless. Mr. Hansen stated that the potential is encouraging to find the fractures on EP2 and if the well is drilled down another few hundred feet and nothing is found, then we can terminate it without a penalty from the drilling company. Mayor Piccolo stated that costs would be higher if the City brought in another drilling company to start another well and in order to maintain the City's water rights, he would like to continue drilling EP2. He stated that even at 200 gallons per minute, the City would keep the water rights and thinks it's worth the investment to secure those rights. Mayor Piccolo stated that if the drilling continues and nothing is found, it would not mean that the flow increase would at some point not increase. He stated that we have to hit more fracture sets to get the well more productive. Councilmember McEvoy stated that Layne Christensen Company was the lowest bidder and the most dedicated driller for the area and doesn't think that he would purposely cause problems or break his own tools. Councilmember Davis stated that he would like to stop the drilling and abandon EP2 before the City spends any more money and possibly try drilling in another area. Mr. Hansen stated that they could continue forward and drill down another 2,000 feet, bring in a logger tool, place the pipe in the ground, then add gravel to stabilize the formation and begin pumping water out to check the quality after geophysical testing. He stated that he just needed Council guidance on how to proceed.

Councilmember Nielson asked how much of the money is grant funded and how much is funded by a loan from the Community Impact Board (CIB). Mayor Piccolo stated that the money being spent at this time is the City's and the grant portion would be spent last, so it's a 50/50 loan/grant project with a total of 2.94 million for the project. He stated that the City has to spend up to 1 ½ million dollars before the CIB will even match it.

Mr. Hansen recommended Roger Fry, a Geologist that has previously worked for Pacificorp as a contact on the areas formation and possible assistance. **MOTION**. Councilmember Tatton moved to accept the proposal to continue with drilling on EP#2 to the 2,300' mark with the contract as outlined by David Hanson with Layne Christensen Company and to instruct staff to negotiate and continue working with Layne Christensen Company with the section in the contract regarding the replacement of tools clause. Motion seconded by Councilmember McEvoy. Councilmember Davis voted Nay. Motion carried with a four to one vote.

The regular City Council meeting adjourned at 4:45 p.m. by Mayor Piccolo pursuant to the motion by Councilmember Tatton.

APPROVED

ATTEST

Joe Piccolo, Mayor

Laurie Tryon, City Recorder