Westra, John

From: Ed Squires [ed@hydrologicinc.net]
Sent: Monday, March 03, 2008 9:35 PM
To: Westra, John
Cc: Whitney, Rob; Owsley, Dennis; Vincent, Sean; Spackman, Gary; Tuthill, Dave
Subject: FW: M3 Eagle Drilling and Well Rehabilitation Update 2-28-2008
Importance: High

Hydro Logic, Inc.
1002 W. Franklin St. Boise, ID 83702 (208) 342-8369 Fax: (208) 342-3100 Cell: (208) 631-6781

John et al:

This communication follows my e-mail of last week (see below).

1) **DEVELOPMENT TESTING OF SVR#7 TEST WELL:**
   a. As indicated below, we installed a test pump in the SVR#7 test well on Saturday.
   b. Today, we began development-testing to determine the effectiveness of our well-development techniques and the sustainable yield of the well.
   c. Short-term (after a couple of hours), we were producing 960 gpm with only 30 feet of drawdown; as much as we could have ever hoped to get from this 8-inch diameter test well and at least double the specific capacity of the testing conducted at the completion of the new well.
   d. We will continue our development pumping tomorrow and plan to do a stepped-discharge test on Wednesday (subject to schedules).
   e. After a night of recovery we intend to do a constant-discharge test of the well for pump design.
   f. If any Department personnel are interested in coming out to observe this testing just let me know and I will keep you posted as to scheduling.

2) **AN OPPORTUNITY PRESENTS ITSELF:**
   a. As you might imagine, this testing is quite expensive using generator power at the current high cost of fuel.
   b. The cost of fuel, alone, approached $1,000 per day.
   c. The 24-hour cost of running the generator, rental, and night watchman is ~$3K per day not including all of the set up and mobilization.
   d. Although this does not take the place of our planned regional scale aquifer test, using an efficient large bore production well that fully penetrates the aquifer at a higher discharge rate, pumping this well for a somewhat prolonged period would provide us with some useful data and could help us to refine our aquifer testing plan; especially with respect to the discharge.
   e. Although we do not have time to wait to measure off-site wells, we have several specially-equipped monitoring wells that are relatively close to the SVR#7 well that we would monitor (because they are already equipped with data-loggers).
   f. With only 30 feet of drawdown in this inefficient well (perforated completion with crushed gravel filter pack) the actual drawdown outside the well (minus well losses) is probably less than 15 feet. Therefore, we may have difficulty measuring drawdown at the distance of our monitoring wells.

g. We still have a short window of opportunity before the start of irrigation season and filling of the canals to conduct a meaningful test.
h. Discharge will be to a nearby constructed pond that will eventually spill over into a small drainage that eventually enters Big Gulch Creek. Based upon our observations to date, the discharge will not be a problem in any way. Of course, we will have personnel on site 24-hours a day during the testing to watch over the discharge.

3) REQUEST FOR PROLONGED TESTING IF WARRANTED:

a. Given the productivity of this well, and given the effort that has already gone into mobilizing test equipment to the site, we are suggesting that we take advantage of this situation and prolong the pump-design testing we have planned into a multiple day aquifer test and see what good data we can develop opportunistically.
b. The rub comes with the fact that we do not yet have a water right to produce the well for a prolonged period of time. As you know, we have secured a temporary water right but that only allows for 5 acre feet which, at the proposed pumping rate, would only allow us to pump for about 30 hours. Besides, I would rather not use up that water right which I procured for construction water for the development.
c. When we were seeking a water right for the Tamarack Resort, we requested IDWR's permission to conduct a 7-day pumping test of another 8-inch test well. The Department allowed us to do so under a section of the Idaho Code that Jeff Fereday directed our attention to; 42-1805 which states: *Additional Duties.- In addition to other duties prescribed by law, the director of the department of water resources shall have the following powers and duties:* (3) *To conduct surveys, tests, investigations, research, examinations, studies, and estimates, of cost relating to availability of unappropriated water, effective use of existing supply, conservation, storage, distribution, and use of water.* (4) *To prepare and compile information and data obtained and to make the same available to interested individuals or agencies.*
d. We are still not certain how the SVR#7 well will perform under prolonged testing but we are seeking the ability to continue the testing to the extent that our client is willing to foot the bill and we feel that the testing is providing useful results.
e. There are no domestic wells near to SVR#7 which is fairly remote midway between Highway 16 and Willow Creek Road in rural Big Gulch.
f. We view this opportunity as a small scale test using monitoring wells close to the pumping well and no attempts will be made to contact well owners or to measure the wells of others as we intend to do in the regional scale aquifer test of our prospectus using a large bore production well.
g. We are glad to notify, by e-mail, members of the North Ada County Technical Advisory Committee of the testing, and to invite visitors to observe the testing, but Hydro Logic, Inc. will make all technical decisions on the test duration, pumping rate, etc. subject to our client's willingness to fund an extended test based on our recommendations.
h. Of course, if we feel an extended test is warranted, all hand-measured and digitally-acquired data would be contributed to the public domain for public use and Hydro Logic, Inc. would likely analyze the test data and submit that to IDWR as well.
i. I apologize for the last-minute nature of this request but I wanted to offer up the opportunity to capitalize on this situation prior to the advancing irrigation season and while we have the infrastructure in place should everything work in our favor (including the weather, the generator, the pumping plant, and the discharge).
j. I regret that you do not have more time to consider this proposal but we need to move forward with our contracted work while we have the rental test equipment on site. If the Department can approve this request, we commit to making every effort to obtain good-quality and meaningful data but we would literally need to know tomorrow in order to

make arrangements to be able to extend the planned development testing into a multiple day test. We make no commitment as to how long the test would, or could, be continued; we are simply seeking the ability to make those decisions as the testing proceeds.

k. Because this request falls under several authorities and interests (Western Region and Hydrology Section), and because it will take place in a politically sensitive area, I have taken the liberty to also copy the decision makers in hopes of arriving at an expeditious decision. At the same time, I do not want to make this into more than it is. It is not the mother of all aquifer tests. Rather, it is an opportunity to extend an already planned well redevelopment pumping test into a research effort that could yield some meaningful results.

l. Realistically, this is an opportunity to obtain information that could easily cost $50K to $60K to obtain otherwise. We are excited by the possibility that presents itself and that the well can be pumped at a rate that stands a chance of being detected at the monitoring wells.

Please let us know if it would be possible to extend the length of our testing to opportunistically provide some additional information from the aquifer and to test our conceptual model of the aquifer should the opportunity present itself.

Respectfully,

Ed Squires

From: Ed Squires
Sent: Thursday, February 28, 2008 10:56 AM
To: Whitney, Rob
Cc: Westra, John
Subject: M3 Eagle Drilling and Well Rehabilitation Update 2-28-2008

Hydro Logic, Inc.
1002 W. Franklin St. Boise, ID 83702 (208) 342-8369 Fax: (208) 342-3100 Cell: (208) 631-6781

Dear Rob,

I have the following updates for you on the heels of our telephone discussion earlier this morning:

1) **M3 Eagle Test Well #4:**
   a. Recall that this was originally envisioned as a drill-and-fill test well which we decided, later, to construct into a monitoring well.
   b. Treasure Valley Drilling should be completing the piezometer nest today although we have had real problems with access due to the unexpected rain and warm temperatures of the last week; we have had trucks and trailers stuck in several places.
   c. As the currently muddy access allows, we intend to have Dave McLeran move his small cable-tool onto this test well in the days ahead to develop the tubes.

2) **Spring Valley Ranch Test Well #7:**
   a. This is one of the test wells in Big Gulch that you are familiar with,
   b. This is an 8-inch test well drilled by Adamson and tested by SPF.
   c. During the short test pump conducted on this well, the pumping water level increased the entire test period; we believe because the well was not entirely developed (in other words it was developing while it was pumped).

d. In discussing this well with Dave Adamson, he confirmed that the well had not been developed except by the test-pumping.
e. This well is one of the points of diversion for the temporary water right M3 has obtained from the Department for eventual construction water and dust abatement for the development until a water right can be obtained.
f. We want to design a temporary pump for this well but the available data is not sufficient as explained above; indeed, we have no real idea what the well will yield..
g. We had McLeran Well Drilling move over this well and scrape the encrustation from the perforations we observed with our camera. We further had him bail the infill from the well and develop the well by swabbing until the sand-production went away (louvered and perforated completion) and we are ready to conduct a pumping test to further develop the well and to determine the capacity of the 8-inch well and for pump design.
h. A second goal of developing this well is that we want it to be a viable observation well for the proposed aquifer test that would be part of M3 Eagle's water development program and after we are able to drill the first large bore supply well up in the Gulch.
i. Anyway, and as we discussed, I wanted to let you know about the development testing in case you would get any calls.

3) Planned Reconnaissance Trip:

a. We have talked about taking an afternoon reconnaissance trip to the M3 property so I can show you our monitoring wells.
b. We did such a trip with Sean Vincent and Dennis Owsley last fall and I believe it was helpful to them to see the project.
c. If you would want to bring Steve Lester or John Westra on such a trip, they are certainly welcome but I would like to keep the group to a single car if possible and I can drive.
d. It would not be possible to drive to several of the wells now given the mud and warm temperatures because our moving rigs and trailers and pump trucks up there has done some damage to the road we built last fall and some spots are virtually impassable now.
e. I will keep track of the road situation and get back to you when we could visit all wells; our excavator tells me we need only continued warm and some wind without rain. There is still snow in the gulch at this time and the melt waters have saturated the ground.

All for now.

Ed