

## **Minutes of the Idaho Well Driller's Advisory Committee Meeting, December 13, 2013**

The meeting was called to order at approximately 10:00 am. Tim Luke, Compliance Bureau Chief called the meeting to order and welcomed the participants.

Present at the meeting were the following members of the Drillers Advisory Committee: Robert Dawson - Robert Dawson Drilling, Kelly Clovis – Independent Drilling, Jeff Townsend – Cascade Drilling, Ron Stevens – Stevens and Sons Drilling, Tom Richardson – H2O Well Drilling and Pump, David Baker – Apex Drilling and Bob Gestrin – Gestrin Well Drilling. Present at the meeting from the Idaho Department of Water Resources Tim Luke, Tom Neace, Chad Hersley, Rob Whitney, Matt Anders, Sonny Hornbaker, Matt Weaver and Dennis Dunn - (via teleconference). Others present Representative Terry Gestrin, Idaho House of Representatives, Gary Duspiva – Gary Duspiva Well Drilling and Development, and Lee Baron – Camas Drilling, Lynn Tominaga – Idaho Ground Water Association, and Dr. Dale Ralston, consultant.

Tim Luke explained that Rule 80 provides authority for the Director to Appoint a Drillers Advisory Committee to provide recommendations and suggestions to the Director regarding revisions of driller licensing or well construction rules. One of the main purposes of the meeting is to evaluate the minimum seal depth that was established in the 2009 well construction rule revisions. The Department completed a study of well seal depths and geology in 2008 during the negotiated rulemaking for the revisions to the well construction standards rules. The results of the study suggested that increasing the minimum surface seal depth to 38 feet is more protective of the aquifer than the 18 foot minimum seal that was established in the old rules. A few drillers questioned the results of the 2008 IDWR minimum well seal study and the need for the 38 foot minimum seal in the 2013 Idaho Legislature, and suggested that the statutes be changed by the legislature to remove the 38 foot minimum seal requirement. Mr. Luke explained that Director Spackman committed to performing an independent peer review of the study to better evaluate the minimum surface seal depth. The Department contracted with Dr. Dale Ralston to conduct the peer review of the minimum surface seal study, conduct an independent evaluation focused on Northern Idaho and provide any additional recommendations including any areas that could be designated with different minimum surface seal depths.

Tim stated that a couple other issues have come up in relation to the minimum surface seal evaluation. First, the Department also would like to discuss the waiver process. In evaluating the waiver process we noticed we need to update the waiver process and Tom Neace will be discussing that issue. Second, Rob Whitney will discuss the 1994 policy which requires special approval for drilling a domestic well greater than 6 inches in diameter.

Rob Whitney discussed the history of the 1994 policy which requires special approval for drilling a domestic well greater than 6 inches in diameter. In 1994 the Department of Water Resources felt that domestic wells greater than 6 inch diameter may allow over appropriation of the water resource. The policy provided a waiver process if the driller or owner could provide good reason for drilling a domestic well greater than 6 inch diameter. The Department has evaluated that policy and feels that the policy should be more flexible regarding drilling of 8 inch diameter domestic wells. There are certain cases where it is a significant benefit to start with a larger diameter well especially where liners or multiple strings of casing need to be used. The plan is to change the policy to allow for 8 inch domestic wells without any additional paperwork. If a driller or well owner wants to drill a domestic well greater than 8

inches, an application would need to be submitted to justify a larger diameter casing. Modification of the policy will avoid unnecessary paperwork for the Department and drilling industry. There was a general concurrence amongst the participants that modifying the policy to allow 8 inch diameter domestic wells without an approved waiver was a positive change in Department policy.

Tim Luke introduced Dr. Dale Ralston to present his findings regarding the Evaluation of Minimum Seal Depths in Idaho. Dr. Ralston explained that he came to Idaho in late 1960's and has worked in geology and hydrogeology for over 40 years. In his first job in Idaho he worked with the State of Idaho regarding well construction standards and driller licensing requirements. Dr. Ralston later worked as a professor at University of Idaho in Hydrogeology for approximately 25 years, and now is a private consultant working in hydrogeology and well construction. He has also worked with the National Ground Water Association, teaching classes in hydrogeology and proper well construction. Dr. Ralston has worked extensively throughout Idaho with ground water resources and well construction. The Department contracted with Dr. Ralston to do an independent evaluation of minimum well seals in Idaho. This included a review of the well log study that was conducted by the Department during the negotiated rule making regarding the Well Construction Standards Rules in 2008, conducting an independent well seal evaluation in Northern Idaho and a discussion of minimum surface seal depths necessary to protect the ground water.

Dr. Ralston explained that most aquifers have overlying low permeability layers including competent rock formations that provide natural protection from contaminants at land surface or the shallow subsurface. Many of the areas where wells are being drilled have surface or near surface contamination sources. The State of Idaho overall has very good ground water quality, but we also have many contaminated areas that could affect groundwater. A well seal is vitally important to protect the individual well and the state's ground water resource. A well penetrates through the protective layers and, if not properly sealed, provides an avenue for downward movement of contaminated water from shallow zones to underlying aquifers. The seal should extend, from land surface, into a low hydraulic conductivity layer that overlies the aquifer. This properly installed seal generally prevents the well from being the avenue for downward movement of contaminated near-surface.

The seal requirement should be based on geology and thus be different for different geologic settings. The geology is highly variable throughout the state of Idaho. The minimum surface seal depth in the old rules was 18 feet deep. This standard was revised in 2009 to a 38 foot minimum surface seal.

One alternative is to have the driller select the seal depth based on area geology and assume some responsibility for potential contamination problems. A second alternative is to have the IDWR provide the required seal depth for each new well. Neither of these approaches are workable. The minimum 38 foot surface seal is the state wide standard with the potential for waivers to accommodate site-specific conditions. Approximately 90% of the wells drilled are domestic wells.

Contamination is present with major contaminant sources identified such as superfund sites and leaking petroleum storage tanks, and others. Land-use related contaminant sources such as agriculture are present as well as individual septic disposal systems.

IDWR conducted a study prior to finalizing the revised well drilling standards in 2009. Review of 697 randomly selected driller's reports from 44 counties in Idaho to evaluate whether 18-foot, 38-foot or 58-foot seals would provide protection for ground-water quality based on geologic conditions. The review

was based on identifying the depth to the first confining layer (clay/silt or consolidated rock) identified in well driller reports and comparing this information with alternative seal depths of 18 feet, 38 feet and 58 feet. 218 of the 697 wells encountered the first confining layer within 18 feet (31 percent). 238 of the 697 wells encountered the first confining layer between 18 and 38 feet (34 percent). 109 of the 697 wells encountered the first confining layer between 38 and 58 feet (16 percent). 132 of the 697 wells encountered the first confining layer below 58 feet or were currently sealed to greater than 58 feet (19 percent).

A seal to 18 feet would be effective for 31 percent of the wells.

A seal to 38 feet would be effective for 65 percent of the wells.

A seal to 58 feet would be effective for 81 percent of the wells.

Dr. Ralston checked about 100 of the 697 wells that were included in the IDWR study and generally agreed with their picks on depth to confining layers.

Ralston conducted a similar examination of well driller's reports in the area from Riggins to the Canadian border. Townships were selected to represent various geologic settings and well development areas in northern Idaho. About three wells were selected from each township for inclusion in the study; from upper, middle and lower portions of the township. Logs for 181 wells were examined. The decision of the appropriate seal depth was easy for about two-thirds of the wells

The decision relative to well seal depth was difficult in the remaining wells mostly because of problems in interpreting the geologic information given (i.e. 0 to 30 feet - clay with sand layers; or 0 to 45 feet - soft and hard layers of basalt).

About 50 percent of the wells encountered the first confining layer within 18 feet.

About 40 percent of the wells encountered the first confining layer between 18 and 38 feet.

About 10 percent of the wells encountered the first confining layer at a depth greater than 38 feet.

From a geologic viewpoint, a seal to 18 feet would have been effective for about 50 percent of the wells included in the Ralston analysis. A seal to 38 feet would have been effective for about 90 percent of the wells included in the Ralston analysis. A number of the wells included in the study had a surface seal deeper than the required minimum. The Ralston study supports the IDWR decision in 2009 to increase the required seal depth from 18 feet to 38 feet.

Constructing a surface seal to 38 feet increases the cost of the well as compared to an 18-foot seal. Four drilling firms active in northern Idaho were asked to provide cost information relative to installation of a 38-foot seal versus an 18-foot seal for a 200-foot domestic well.

Data provided by four drilling firms in northern Idaho show that the increased cost of a 38-foot seal as compared to an 18-foot seal surrounding a 6-inch diameter steel casing for a domestic well is in the range of \$440 to \$1,080. One driller noted that the greater seal depth added about 9% to the cost of the well.

Installation of a well seal is a one-time cost that will provide protection for the aquifer for the life of the well, which can be many decades. Requiring a deeper seal on new wells is a relatively small price to pay to protect the water resource that is the drinking water source for more than 90 percent of Idaho residents. The deeper seal depth also provides additional protection of the water supply for the well owner. To be effective, the seal should be installed into the uppermost confining layer that overlies the aquifer. The statewide IDWR (2008) well study and the Ralston (2013) study of wells in northern Idaho both show that a minimum seal depth of 38 feet provides more protection of ground-water quality than does a minimum seal depth of 18 feet because a greater percentage of the wells would have a seal that penetrates a confining layer.

IDWR Waiver program provides the needed avenue to deal with specific areas where a 38-foot seal may not be needed. Ralston stated that the present program administered by IDWR provides an effective balance between protection of the ground-water resource of the state and flexibility for well construction in local areas.

The focus should be on protection of ground-water quality. Remediating problems of ground-water contamination not only is very expensive but often is unsuccessful. The ground water is owned by the state. What the well owner is paying for with a proper well seal is safe access to the public resource. This is a one-time expense to protect the well, protect the aquifer and to protect the state's water resource. The state wide standard is important and in his 40 + years of experience, he has seen many contaminated wells with very high costs associated with remediation of the ground water. Many times aquifer remediation is not successful.

A discussion took place amongst the group regarding contamination and improper well construction that can provide conduits for contamination lower aquifers. Dr. Ralston provided several examples with ground water contaminated with nitrate, petroleum fuels and extensive metals contamination in the Coeur d' Alene basin. He reiterated that the minimum surface seal is necessary to protect the resource. Waivers can be utilized to accommodate alternative minimum seal depths where appropriate.

## LUNCH BREAK

Tom Neace, Manager of the Ground Water Protection Program provided a presentation regarding waivers of the minimum well construction standards rules. This includes waivers submitted in 2013 with related statistics, waiver processing guidance for the IDWR Regional office well inspectors. The presentation also includes a description of areas that, based on the geology, may qualify for a alternative minimum seal depth.

Questions arose in the legislature in 2013 concerning the 38 foot minimum surface seal depth that was established in 2009. A few drillers had complained to legislators that the 38 foot seal was unnecessary in many cases. The Director of IDWR stated that the waiver process could accommodate alternative seal depths based on the geology in the area.

Waivers of the minimum standards are provided for in the Well Construction Standards Rules. The rule states that ***“in unique cases where ground water resources will be protected from waste and contamination and public health and safety are not compromised, a waiver of specific standards may be approved prior to construction, decommissioning or modifying a well.”***

An updated waiver form was posted on the IDWR website in June, 2013, including detailed instructions on completion of the waiver request form. IDWR well inspectors have been working with the drillers to complete the waiver request forms and provide the information the Department needs to evaluate the waiver.

- Thirty (30) waivers requests were submitted for wells completed between 4/6/13 and 12/4/13.
  - Twenty nine (29) waivers were approved. One (1) Waiver was denied based on inaccurate Information that was submitted.
  - Sixteen (16) different companies requested waivers.
  - Twenty eight (28) waivers were submitted regarding Sealing Requirements
  - 9 wells had a shallow confining layer to seal into.
  - 11 wells had a shallow production zone.
  - 7 wells encountered an unstable formation (heaving sands, etc).
  - 1 well had temporary casing stuck in the boring.

The Department has been flexible working with drillers when waivers are requested and necessary. The Department looked at the distribution of waiver requests statewide, to identify areas which have numerous waivers submitted. If specific areas could be identified, it may suggest an alternative minimum surface seal depth. The waivers were broadly distributed throughout the state and did not identify specific areas that would justify alternative minimum seal depths.

The Department has been evaluating areas of the state where the geologic conditions may warrant alternative minimum sealing requirements. Four specific areas were identified by input from the drilling industry and the IDWR regional inspectors, including:

Flood Gravels near Rigby

Fractured basalt and rhyolite in Island Park

Alluvial gravel deposits in the Wood River Valley near Hailey

Alluvial sand and gravel near Weiser

The Department plans to spend additional effort to evaluate these four areas in 2014.

Bob Gestrin described an area in Valley County where layered sands and clays are encountered. Ground water is shallow with a number of small clay confining layers. Most of the wells are 50 to 60 feet deep. Mr. Gestrin asked if a shallow seal would work in that environment. The Department agreed to work with Gestrin, to evaluate the geology and determine if that area would be considered an alternative seal depth area.

The Department has drafted guidance for well inspectors regarding processing of waivers. The goal of the guidance is to strive for statewide consistency in the consideration of waiver requests. The guidance provides a description of the common waiver requests, information necessary to process the waiver, well owner concurrence with the waiver request, evaluation of the waiver request to assure that information on the waiver is correct, and data base entry of waiver requests into the IDWR wells data base. Well inspectors are encouraged to field verify geologic conditions that were used to support the specific waiver on the request form.

Representative Gestrin commented that the term waiver has a negative connotation. The group discussed the issue and one possible solution suggested was to rename the waiver form "alternative seal standard form".

Ron Stevens stated that there is an area in downtown and north Boise where there is little or no overburden and the aquifer consists mainly of sand and gravel. These areas may qualify for an exemption. He indicated that the waiver process works but if we can agree to an 18 foot seal for a 60 foot well if the conditions are right (as described above) it would avoid some paperwork.

Bob Gestrin asked if there was state wide contamination in Idaho. Tom Neace explained that there a large number of contaminated sites throughout the state. That point was made by Dr. Ralston in his presentation showing a DEQ map with contaminated sites. Bob Gestrin suggested we should have an area of drilling concern near these contaminated areas and look at more shallow seals in other areas. Dr. Ralston stated that the deeper seal is needed for prevention of contamination for the future and indicated that the waiver process seems to work for unique situations. Ralston stated that the State of Idaho has good water quality and we need to support prevention of contamination. Tom Richardson stated that in certain areas of Washington State, the surface seal is required to be 400 feet deep into the Grand Ronde Formation. Ralston added that the better we can utilized the waiver process the better we can accommodate unique geology and still protect the resource.

Tom Richardson asked if the Department had a task or question for the committee regarding these issues. Tim Luke asked the committee if the waiver process worked. The committee indicated that it did work and that maybe the Department could look for ways to make it better.

Tim Luke asked if the committee was interested in changing the well construction rules and if the Department should initiate negotiated rule making. Each of the 7 committee members present indicated that that we should leave the rules in present form and use waivers for unique situations.

Mr. Neace asked the committee to consider two ideas the Department was considering for the future regarding submission and availability of data on line. Currently the external well search only provides the well log. Permits and waivers while present in the data base do not show in the IDWR public web site external search.

Question 1 - should the external search include website access to waivers and permits?

A comment was made by Dennis Dunn that financial institutions and others in the real estate business have been requesting all documents associated with wells including permits, waiver forms and drilling permits. Currently only the drilling permits are available to the public on line. A discussion was held on

the requests for these documents. The advisory committee consensus was to not provide these documents via the external web search but to provide these documents as requested by the public.

Question 2 - Should the Department prepare to allow online submission of driller reports, applications for permits, metal tag sales and credit card payment for well tags. Currently IDWR is not set up to allow online submission of driller reports, online application for permits, online metal tag sales, or credit card payment for permits. The consensus of the advisory committee was that the Department should plan for future online submission of documents and provide for credit card payment for well tags.

Tom Neace asked that we quickly discuss the continuing education program and get feedback from the committee. Jeff Townsend indicated that last year's continuing education was great because drillers can get credits for rules and regulations for Washington and Oregon at the Idaho conference. Tom Richardson indicated that the classes have limited variety in class room environment. It would be good to get hands on training in the field. Others commented that it would helpful to get drillers out in the field. Geology may be a good topic with cuttings and rock samples for the drillers at the continuing education seminar. Ron Stevens suggested that wire rope training is a good subject since drillers all use wire ropes on the rig. This can be an important rig safety issue. Video recording may be an avenue to help drillers who miss the rules and regulations sessions for continuing education. The IGWA could charge a fee for the DVD. Lynn Tominaga gave an update of the upcoming 2014 conference. Presentations will include the Nebraska Seal Study and lessons learned. A number of presentations deal with safety including tire safety for drill rigs, and a presentation by an Occupational Safety and Health Administration inspector. Rules and regulation training will be provided for Idaho, Oregon and Washington. There will be two presentations regarding ground water quality in Idaho. David Baker indicated that since he has been involved with the continuing education IDWR has been very flexible and many in the drilling community have commented that they appreciate the flexibility. There was discussion about allowing more credit for pump related presentations. The Advisory Committee suggested that the Continuing Education Committee look at the credit issue regarding pumps in their next meeting. Tom Richardson asked about enforcement issues this year. The Department described the 2 enforcement actions this year. One driller was drilling a well without a license. One driller did not follow permit conditions. Both were issued NOV's with fines.

The newly formed Lewiston Ground Water Management Area was discussed briefly and it was agreed that the Department would address the new management plan and drilling requirements. The management plan was developed with the help of a local advisory committee. The group discussed the problem with depleting aquifers in the Lewiston area and well construction details regarding sealing and drilling to the regional aquifer at a depth greater than 800 feet. Lewiston Orchards is proposing to drill several large diameter wells into the regional aquifer for domestic and irrigation purposes. Dr. Ralston indicated that development of public water systems was one potential solution but is very expensive.

Dr. Ralston provided an update on the water migration issues dealing with minimum low flows on the Spokane River based on pumping in the Rathdrum Prairie Aquifer. This is a major issue because out of state interests are protesting all new ground water rights in the area.

The meeting ended at approximately 3:45 pm.

