# Well Said Newsletter

**March 24, 2011**
Issue 32

News from the Water Resources Department's Well Construction and Compliance Section

### Articles

**Page 1**
Integrated Water Resources Strategy
Ground Water Awareness Week
Special Standards

**Page 2**
Well Log Water Level Math
Gray Water Reuse and Disposal Systems Rulemaking
How Are Bentonite Abandonments Doing?

**Page 3**
License Renewals
Continuing Education Credit Reminder
Public Water Well Contamination

**Page 4**
Environmental Protection Agency Issues Guidance for Chromium-6 in Drinking Water
Domestic Well Testing in Real Estate Transactions
Safety Corner

**Page 5 and 6**
Exempt Use Water Well Recording
Environmental Protection Agency to Regulate Perchlorate in Drinking Water
E-Filed Start Cards and Well Logs

**Page 7 thru 9**
Photos

**Page 10**
Region Office Directory
Enforcement Staff Directory


## INTEGRATED WATER RESOURCES STRATEGY

What is an integrated water resources strategy? It is a plan to answer difficult questions regarding long-term water supply, including "where and how much water is needed?", "Where and how much water is available?" and "what types of policies and tools will we need to meet our future water needs?" Oregon is currently developing the State's first Integrated Water Resources Strategy (IWRS). It will take into account water quantity, water quality, and ecosystem needs. The strategy is needed to help develop a vision of what Oregon's livability and economic viability will look like for future generations. It will take into account the fact that while no two communities are identical, they all have similar hydrologic elements, such as river systems, aquifers, springs, and ecosystems. Communities have other similarities too, including a need to coordinate with neighbors, a need for local solutions to local challenges, and a need for funding.

The focus during 2011 is on the development of a framework and a set of recommended actions. The strategy will include tools, data, and resources with *statewide* relevance that communities can use to better understand and meet their water needs. Information and opportunities to comment will begin this spring and continue through 2012. The Strategy, when completed, will serve as an action plan for the state.

As the lead agency, the Oregon Water Resources Department will continue to work closely with the Departments of Environmental Quality, Fish and Wildlife, Agriculture and other agencies, tribes, stakeholders, and the public on the development of the Strategy. For more information about the Integrated Water Resources Strategy visit the Department's website at www.wrd.state.or.us. You will find the draft strategy paper and a set of issue papers that describe why Oregon is planning for our water future. Public comment was accepted through March 1, 2011. You can also contact IWRS Project Manager, Brenda Bateman at (503) 986-0879 with any questions or concerns. Please feel free to join the IWRS electronic mailing list, a way to stay informed of recent progress, upcoming meetings, and other opportunities to provide input. To join, visit http://listsmart.osl.state.or.us/mailman/listinfo/iwrs.

## GROUNDWATER AWARENESS WEEK

Adapted from www.cdc.gov and www.ngwa.org

National Groundwater Awareness Week was March 6-12, 2011. The annual observance focused on yearly water testing and well maintenance.

Clean water is one of the world's most precious resources and it is something that everybody needs. People use water every day for a variety of reasons, such as drinking, bathing, recreation, agriculture, cooling and industry. Although water plays an essential role in every person's life, many individuals are not aware that much of their water comes from the ground in the form of groundwater.

Groundwater Awareness Week is meant to spotlight one of the world's most important natural resources — groundwater. Groundwater is essential to the health and well being of the environment as well as every living human being on earth, whether you get your water from your own private well or from a community water system. The National Groundwater Association (NGWA) sponsors National Groundwater Awareness Week because it believes that groundwater awareness is important to everyone.

For more information about National Groundwater Awareness Week go to the NGWA web site at http://www.ngwa.org/public/awarenessweek/index.aspx

## SPECIAL STANDARDS

Providing additional information such as photos, global positioning system (GPS) coordinates or maps may help expedite a special standard request. One of our goals is to provide good customer service and new technology is just one more tool that can be used to accomplish this goal.

Before abandoning a


### *Well Said* Newsletter

Available on the web at www.wrd.state.or.us/OWRD/GW/forms.shtml.

Please share with others at your organization.

*Well Said* is a production of the Oregon Water Resources Department's Well Construction and Compliance Section and is designed to inform the drilling industry and the public about program activities and other items of interest. Questions or suggestions about this newsletter can be directed to Kristopher Byrd at (503)986-0851 or Kristopher.R.BYRD@wrd.state.or.us.

gravel pack well, the well constructor must request and obtain approval from the Department. The request should ensure that vertical movement of water is completely stopped and that the groundwater resource is protected. Questions about special standard requests or gravel pack wells should be directed to Kristopher Byrd at (503) 986-0851 or by e-mail at Kristopher.R.Byrd@wrd.state.or.us

## WELL LOG WATER LEVEL MATH

The current water well report form references all measurements to land surface. A check box under the "plus (+) sign" is used to designate a feature that extends above land surface. For example, if casing extends 2 feet above land surface, an "x" is placed in the box under the "plus (+) sign" adjacent to the number 2. In contrast, if the top of a liner is installed at 2 feet below land surface, the check box is left unchecked.

A similar logic applies to static water levels. An "x" in the check box in front of a static water level of 11.6 feet indicates a static water level that is 11.6 feet above land surface. Therefore, static water levels that occur below land surface should not have an "x" in the check box. The box should only be checked for flowing artesian wells that have static water levels that rise above land surface. For example, a flowing artesian well with a stable shut-in pressure of 5 psi has a water level that is 11.6 feet above the gage (5 psi * 2.31 ft/psi). If the gage is at land surface, and if the water level is reported in feet, an "x" should be placed in the check box to indicate that the water level would rise to, and stabilize, at 11.6 feet above land surface if a water-tight tube is extended 12 or more feet above the top of the casing.

The well log database cannot differentiate the number 5 from the number plus (+)5 since both are positive numbers. Therefore, when an "x" is placed in any checkbox under the "plus (+) sign", the database stores the number adjacent to the checkbox as a negative number. When water levels are plotted in graphical form, a negative number indicates water levels above land surface and a positive number indicates water levels below land surface. If a well constructor incorrectly checks the box under the "plus (+) sign" for a static water level that is below land surface, plots produced from the database file will incorrectly interpret this as a water level above land surface.

## GRAY WATER REUSE AND DISPOSAL SYSTEMS RULEMAKING

The Department of Environmental Quality (DEQ) is proposing new rules for the permitting of gray water reuse and disposal systems. Increasing demand on Oregon's limited water resources has prompted public interest in using gray water as an alternate water source. Gray water is wastewater originating from showers, baths, bathroom sinks, kitchen sinks and laundries. Gray water does not include toilet or garbage wastes, or wastewater contaminated by soiled diapers. The proposed rules would allow the voluntary reuse of gray water for beneficial uses such as landscape irrigation when authorized by a permit. Copies of the proposed rules can be found on the DEQ web site at http://www.deq.state.or.us/wq/reuse/gwrulemaking.htm. Comments on the proposed rules were due to DEQ by 5:00 pm on March 11, 2011.

## HOW ARE BENTONITE ABANDONMENTS DOING?

We are about half way through the bentonite abandonment "test period" which went into effect in January 2009. Since then, 11 wells have been abandoned using bentonite. Well inspectors were on site and observed 8 abandonments. Well depths have ranged from 11 feet below ground surface (bgs) to 397 feet bgs. Preliminary data shows bentonite bridging during placement in two wells. One well exhibited high total dissolved solid readings greater than 800 parts per million (ppm) and after reviewing the meter readings, the well was abandoned without further delays. Preliminary data indicates that ¾-inch bentonite works better because there is less settling in the bags and screening is easier. Data also shows the importance of screening the "fines" since "fines" tend to settle on top of the water which may cause bridging. Inspectors were not able to observe two bentonite

*"Serving the public by practicing and promoting responsible water management."*

abandonments because of scheduling conflicts in which the 72 hour notice was not provided, and one job required an expedited abandonment. The bentonite abandonment trial period is still in effect and continues to December 2013. The data provided here does not include wells abandoned under a special standard. If you have questions or concerns contact Kristopher Byrd at (503) 986-0851.

## LICENSE RENEWALS

If your Well Constructor's License expires June 30, 2011, you should already have received a Renewal Form. You may renew your license online at: http://www.wrd.state.or.us/OWRD/GW/resources-well-constructors.shtml or via paper by completing the Renewal Form and returning it with the $150 fee by June 30, 2011. There is a $100 late fee for renewals postmarked or received after June 30, 2011. If you have questions, contact Tracy Fox at (503) 986-0856.

## CONTINUING EDUCATION CREDIT REMINDER

Oregon licensed well constructors are required to obtain 14 continuing education credits (CEC's) in each two year licensing cycle. The required CEC's are listed below:

- A minimum of two CEC's pertaining to groundwater, well construction, Oregon Revised Statutes and Oregon Rules must be obtained during each two year licensing cycle; and
- Four CEC's may be obtained through Hazardous Materials training courses; and
- Four CEC's may be obtained through safety, first aid and CPR courses; and
- Two CEC's may be obtained through approved exhibitions.

Credits may be offered through professional organizations, clinics, schools, or seminars. Upcoming courses are available on the Department's web page. Well Constructors are encouraged to check current credits earned by accessing the Well Constructor's Web Page at http://apps.wrd.state.or.us/apps/gw/driller_education_view_only/. To access this information, you will need your license number, your last name, or first and last name. Questions regarding continuing education credits or courses should be directed to Tracy Fox at (503) 986-0856.

## PUBLIC WATER WELL CONTAMINATION

Adapted from USGS Circular 1346 "Quality of Water from Public-Supply Wells in the United States 1993-2007 Overview of Major Findings"

According to a new study by the United States Geological Survey (USGS) that included wells from 30 regionally extensive aquifers in 41 states, more than one-third of the nation's population receives their potable water from a public water system that relies on groundwater and, according to the study, at least 20 percent of water samples from over 900 public wells contain at least one contaminant at levels of potential health concern.

The findings show that naturally occurring contaminants, such as radon and arsenic, account for about 75% of contaminant concentrations greater than human-health benchmarks in untreated groundwater. Naturally occurring contaminants are mostly derived from the geologic materials that make up the aquifers from which well water is withdrawn.

Besides the naturally occurring contaminants, there were also man-made contaminants found in untreated water samples from the wells. The water samples were mostly from unconfined aquifers and included contaminants such as herbicides, insecticides, solvents, disinfection by-products, nitrate, and gasoline related chemicals. The man-made contaminants accounted for about 25% of contaminant concentrations greater than human-health benchmarks and were detected in 64 percent of the samples.

Detection of contaminants should not always cause concern for human health because current analytical methods can detect many contaminants at concentrations that are far below the human-health benchmarks. By assessing contaminants in these small amounts, water systems can track emerging issues in their aquifers and identify contaminants that may warrant inclusion in future monitoring.

*Did you know that Oregon leads the Country in flow restoration?*

Treated drinking water from public wells is regulated under the Safe Drinking Water Act. Water utilities, however, are not required to treat water for unregulated contaminants. The Environmental Protection Agency (EPA) uses USGS information on the occurrence of unregulated contaminants to identify contaminants that may require drinking-water regulation in the future.

People served by public water systems can obtain information about their drinking-water quality from the Oregon Health Division (OHD). Selected water suppliers provide an annual water-quality report. Some reports are available on the Department of Human Services website at http://www.oregon.gov/DHS/ph/dwp/index.shtml

## ENVIRONMENTAL PROTECTION AGENCY ISSUES GUIDANCE FOR CHROMIUM-6 IN DRINKING WATER

Adapted from EPA press release dated January 11, 2011.

On January 11, 2011, the United States Environmental Protection Agency (EPA) issued guidance to all water systems on how to assess the prevalence of hexavalent chromium (aka chromium-6) in drinking water. The recommendations are in response to emerging scientific evidence that chromium-6 could pose health concerns if consumed over long periods of time. The guidance provides recommendations on where the systems should collect samples and how often they should be collected, along with analytical methods for laboratory testing. Systems that perform enhanced monitoring will be able to better inform their consumers about any presence of chromium-6 in their drinking water.

EPA provides that their latest data shows no public water systems are in violation of the chromium standard and the science behind chromium-6 is evolving. They also indicate that they regularly re-evaluate drinking water standards and have already begun a review of chromium-6's health effects based on new science. In September 2010, the agency released a draft of the scientific review for public comment. When the human health assessment is finalized in 2011 the EPA will be determining if a new standard needs to be set. For more information about the EPA's Hexavalent Chromium guidance see the EPA's website at http://water.epa.gov/drink/info/chromium/index.cfm

## DOMESTIC WELL TESTING IN REAL ESTATE TRANSACTIONS

Oregon Revised Statute (ORS) 448.271, requires the seller of property containing a water well supplying groundwater for domestic purposes have the water tested for arsenic, nitrates and total coliform bacteria. Once an offer is accepted to purchase the property, the seller must have the well tested. The seller is required by law to submit the test results to the Department of Human Services (DHS) Drinking Water Program and also provide a copy to the buyer within 90 days of receiving the results of the test. The water sample has to be collected according to DHS requirements and analyzed by an accredited laboratory. A list of accredited laboratories for domestic well testing and information about the Domestic Well Testing Program can be found on the DHS website at http://www.oregon.gov/DHS/ph/dwp/dwt.shtml or by calling (971) 673-0405.

## SAFETY CORNER

Adapted from National Institute for Occupational Safety and Health (NIOSH) Information Circular/2005 IC9483

According to NIOSH, in the United States an estimated 93 people die each year from being struck by lightning. Believe it or not, lightning strikes cause more deaths than most other natural disasters, such as hurricanes or tornadoes. Since water well drilling requires working outside in all conditions, workers need to pay special attention to weather conditions for changes in wind velocity, rain and potential lightning. Most lightning strikes occur outdoors every year between May and September. One lightning strike can injure or kill one person or many people depending on the circumstances. Thirty percent of people struck by lightning will usually die within one hour of injury. In order to provide a safe work environment, the following information about lightning should be part of monitoring weather conditions:

- Pay attention to weather forecasts during the thunderstorm season.
- Realize that lightning is present in all thunderstorms.
- Appreciate that lightning occurs before rain and can strike as far as 10 miles away from a thunderstorm.
- Seek shelter immediately when thunder is heard.
- Remain inside your vehicle.

*The vision of the Water Resources Department is to assure sufficient and sustainable water supplies are available to meet current and future needs.*

**We're on the Web!**
*See us at:*
www.wrd.state.or.us

# EXEMPT USE WATER WELL RECORDING

New exempt uses of groundwater require submittal of a $300 exempt well recording fee and a map of the exact well location. These requirements are based on legislation that was passed in 2009 to improve the management of groundwater throughout the state. The law provides for better groundwater data in two ways. One is the requirement to include a map showing the location of the well. This is extremely valuable to the Department in identifying the supply and availability of groundwater. The second is a fee that is intended to support additional study and monitoring of groundwater.

Exempt Use Wells: The following uses do not require a water right permit to use groundwater:

- Group or single domestic use, up to 15,000 gallons per day;
- Watering of any lawn and/or non-commercial garden of one-half acre or less;
- industrial or commercial uses up to 5,000 gallons per day;
- Irrigation of up to 10 acres of school grounds within established critical ground water areas;
- Livestock watering;
- Down-hole heat exchangers;

Landowners that are required to submit a map, as required by Oregon Revised Statute (ORS) 537.545, showing the location of their exempt use well on their property can now submit the map on-line from the Department's web site. The on-line mapping program is an easy and effective tool for locating wells on properties. It is not only effective for new exempt use wells, but it can also be useful for wells associated with water rights or wells that were constructed before the mapping requirements existed. Well constructors, landowners and others may submit a map for any well as long as it has a well identification label assigned to it. Submitting maps on-line for old wells or wells that do not require a map is free of charge and will help to create a permanent record of the wells location. The on-line mapping tool is located at http://apps.wrd.state.or.us/apps/gw/exempt_use_map/index.html. Questions about the Exempt Use Well Program should be directed to Scott Kudlemyer at (503) 986-0861.

Permitted Use: If a landowner intends to use groundwater for any other purpose, a water right permit is required. A permit must be obtained before the well is drilled (ORS 537.535). Obtaining a water right permit is not a certainty. Restrictions may apply based on the location and construction of the water well. There are areas in the state in which a water right permit may not be issued or may be issued for a limited purpose or time. The local watermaster can assist you if you have questions about applying for a water right permit.

# ENVIRONMENTAL PROTECTION AGENCY TO REGULATE PERCHLORATE IN DRINKING WATER

Adapted from February 2011 EPA Factsheet

The United States Environmental Protection Agency (EPA) recently announced they are going to develop regulations for Perchlorate and Toxic Chemicals in Drinking Water. According to the EPA, Perchlorate is both a naturally occurring and man-made chemical that is used to produce rocket fuel, fireworks, flares and explosives. It can also be present in bleach and in some fertilizers.

The EPA indicates that the scientific research shows that Perchlorate may impact the normal function of the thyroid, which produces important developmental hormones. In fact, according to the EPA, thyroid hormones are critical to the normal development and growth of fetuses, infants and children. Based on this potential concern, EPA says that they will move forward with proposing a formal rule.

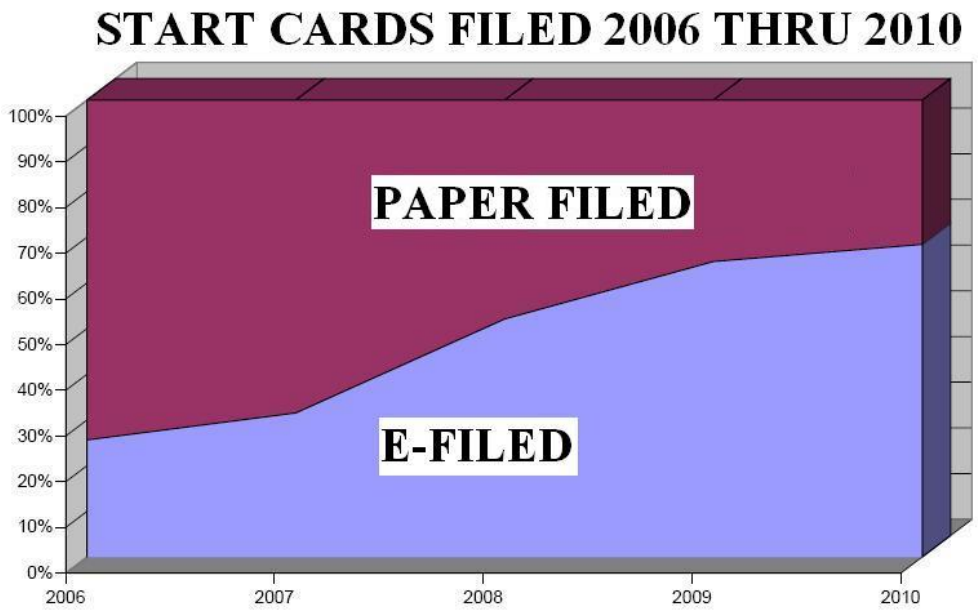
The health effects and occurrence of Perchlorate in public water systems will continue to be evaluated according to the EPA. They also indicate that they will begin to evaluate the feasibility and affordability of treatment technologies to remove Perchlorate and will examine the costs and benefits of potential standards. For more information on the EPA decision to regulate Perchlorate see their website at http://water.epa.gov/drink/contaminants/unregulated/upload/FactSheet_PerchlorateDetermination.pdf

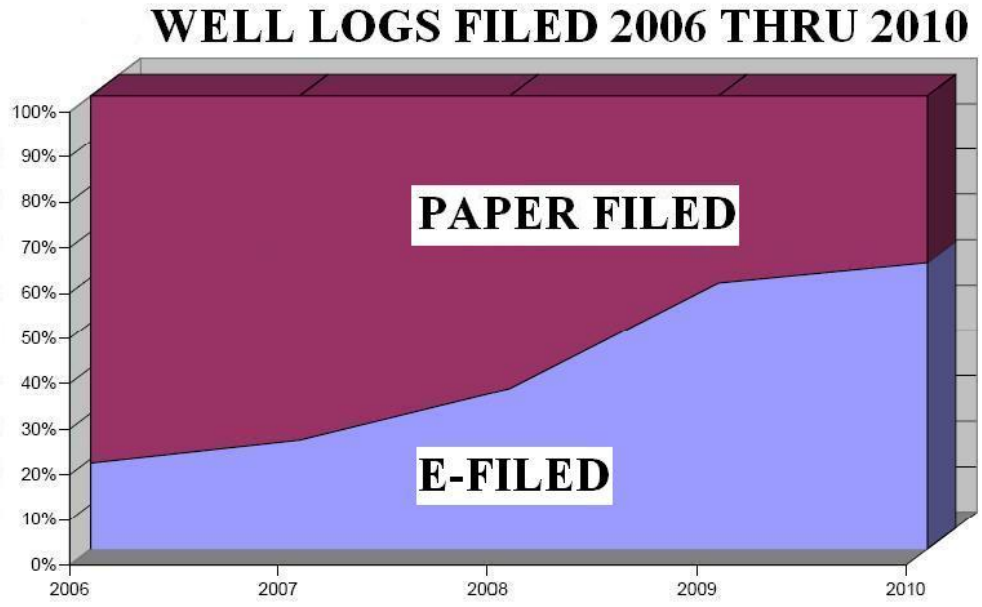
# E-FILED START CARDS AND WELL LOGS

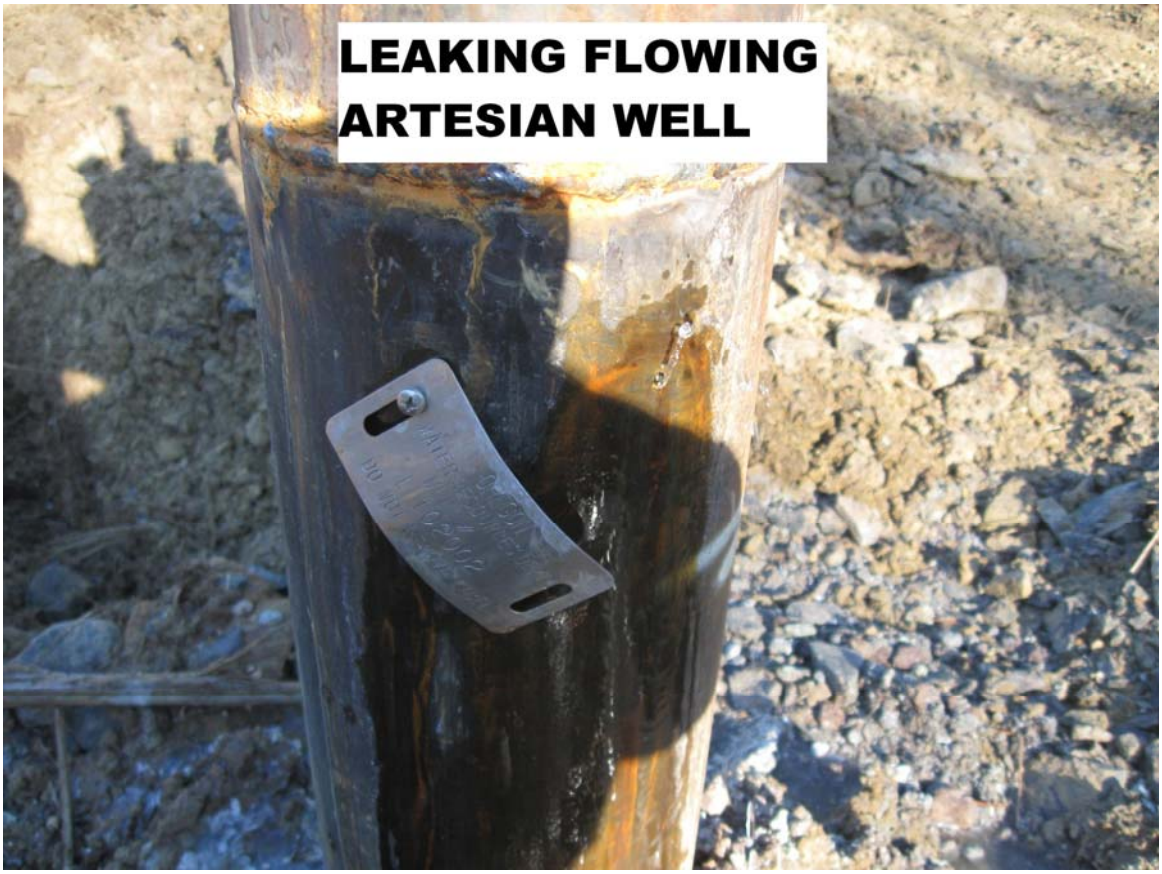
In 2006, only about 19 percent of well reports and 25 percent of start cards were filed using the new online submittal system. In 2010, however, the combined number of well reports and start cards

*The Department's core functions are to protect existing water rights, facilitate voluntary streamflow restoration, increase the understanding of the demands on the state's water resources, provide accurate and accessible water resource data, and facilitate water supply solutions.*

submitted electronically stands at over 75 percent. This is a huge increase since the inception of the program. Because of the success the agency has had in electronic document filing, other state agencies are looking at the program to see if they could use a similar setup for their organization. For more information about e-filing contact Tracy Fox at (503) 986-0856.



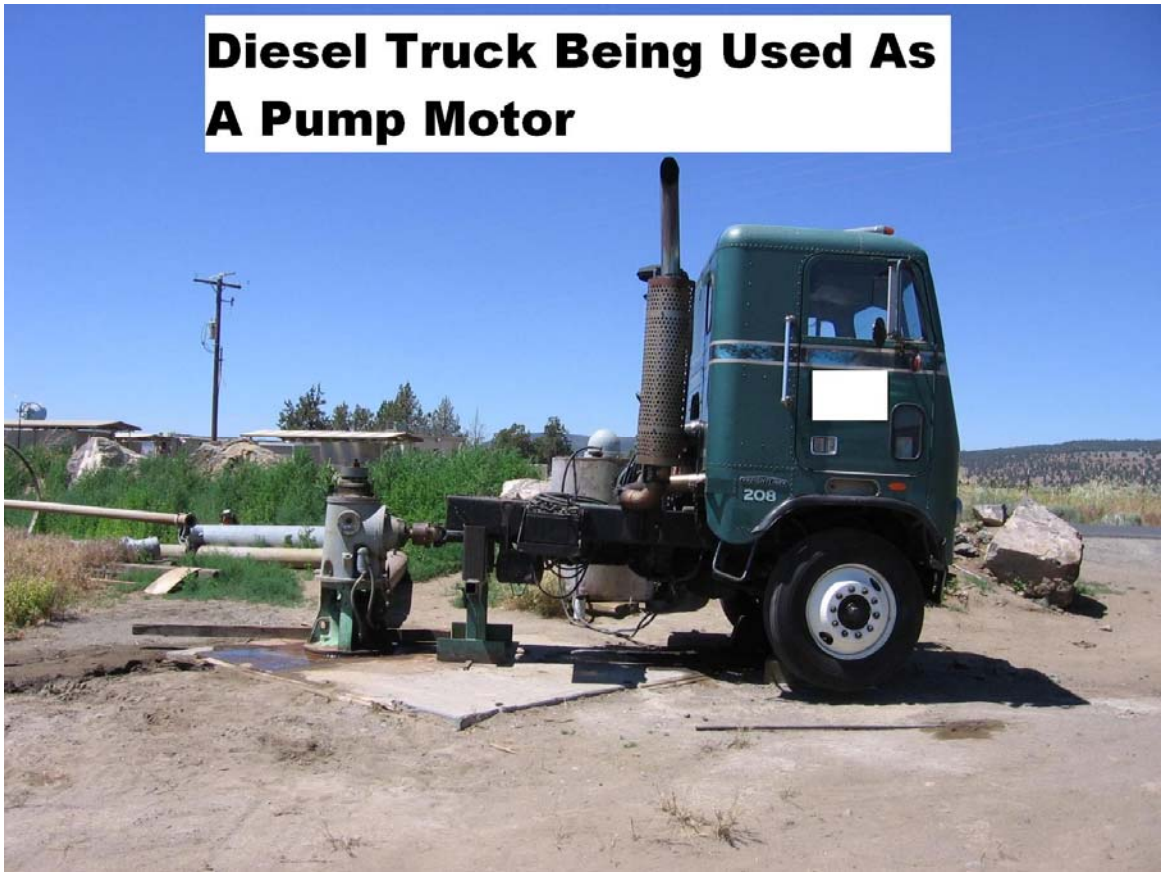




LEAKING FLOWING
ARTESIAN WELL


DRILLING WITH FOAM


Deteriorated
Casing


DRILLING WITH FOAM


Diesel Truck Being Used As
A Pump Motor

## Region Office Directory

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