

UTAH GROUND WATER ADVOCATE

FALL 2009 EDITION



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Herald Sherman Petersen



Herald Sherman Petersen, age 86, passed away Monday, Sept. 21, 2009 in Cedar City. He was born August 5, 1923 in Abraham, Utah to Joseph Clifferd and Erma Tolbert Petersen. He was the oldest child of 6 brothers and 3 sisters. He spent his early years in the Abraham area attending Hinckley Schools. He married Rae Reid on November 13, 1943 in Ely, Nevada. Marriage later solemnized in the Manti Temple, July 5, 1944.

Herald learned the well drilling business from his Father and has drilled wells for over 50 years. He was a very hard working man and was happiest when he was busy. He was very active in the LDS Church serving as Scout Master for many years, High Priest Group leader, Gospel Doctrine teacher and has held a temple recommend since 1944. Herald and Rae moved and settled in Cedar City, Utah in 1990. Herald and Rae were blessed with 7 children.

He is survived by his wife and children: Michael (Barbara), Jim (Myrna), Sherm (Linda), Suzanne (Scott) and Richard (Linda); 37 grandchildren, 105 great-grandchildren and one great-great grand-son, brothers: Arnold, Earl, Wayne and sister: Charlene. He was preceded in death by his parents; son: Alan; daughter: Shirley; brothers: Donald, Warren, Merrill; sisters: Colona and Loraine.

Our sincere condolences go out to Richard and his family.

SPOTLIGHT ARTICLE ON DAVE WORWOOD—LICENSE #776

David Burton Worwood was born March 5, 1956 in Nephi, Utah to Dale & DaNell Burton Worwood. His father, Dale, was one of four partners that founded 4-D Plumbing & Builders Supply. The company was started in 1952 as a general building and construction company. They would complete all phases of construction from excavation right up to the finish work inside the building. They were carpenters, plumbers, HVAC technicians, electricians, and cabinet makers. In those days there were not as many specialty companies like there are today so they did everything that needed to be done. Dale was a licensed plumber and a master electrician along with his many other talents. Dale always preached to his employees to be fair and honest in everything you do, not only on his watch but throughout your life. Integrity was very important to Dale. During the next 20 years Dale bought the other partners out of the business and became the sole owner of 4-D Plumbing & Builders Supply. As a young child David can remember going on jobs with his dad and holding the light for him or handing him tools. By the time he was eight he knew the names and location of all the tools in his dad's service truck. His dad worked long hours as most independent business owners did & still do. One thing that sticks in David's mind is how many times his dad would go out at night or on a holiday to help someone whose furnace was off or whose pump was not working. Up until 1992 there had only been two Christmases that either Dale or David had not gone out on Christmas Day to help someone with their heat or water. Dale never complained about his work and he loved the people he worked for. By the time David was 13 he was operating a backhoe, at 15 he was working 12 hour days on the backhoe, and by age 16 he was working full time during the summer months and after school during the winter months plumbing, digging, or installing furnaces. Pumps were not the main part of the business at that time, but they have serviced pumps in three counties for as long as David can remember.

The Worwood family's passion was horses and they would plan trips designed for riding these horses. They rode them to the now famous Sand Mountain, located at the Little Sahara Sand Dunes, before there were any roads and only stock trails led in that direction. It was the biggest sand pile they had ever seen. Many of their vacations were spent on horseback in the mountains scattering salt or fixing fences for the local cattleman's association. They always had a stallion and they bred mares for other people as well as for themselves. They loved to have a corral full of good horses. Breeding was another "job" but it paid the feed bill for the rest of the herd. They owned as many as 19 horses at one time and had one of the best papered quarter horse stallions in the Western United States. His sire was the only stallion that was a performance champion and AAA rated on the track as well. David participated in the high school rodeo association throughout high school, roping on horses that they had raised and trained. That was the profession David thought he would follow but reality set in and forced him to stay with something that provided a consistent paycheck. Working, riding horses, and hauling hay was a way of life for him.

In 1974 David married his long time sweetheart and love of his life, Carmela Robbins. Together they have two children, Jennifer and Jess, and they have worked together side by side for the

past 35 years. Carmela runs the retail store while David takes care of the outside business. Their son, Jess, and son-in-law, David, also work alongside them continuing the tradition of this family business. Also in 1974 David started his apprenticeship for a plumbing license and four years later became a journeyman plumber. Then in 1986 Dale announced that it was time, he would be retiring, and that David would buy him out of the business. This was unexpected as David thought that his dad would work forever! What a shock those first few years were. David signed up for the electrical apprenticeship program to continue what his dad had started, and so began another four years of night school. The eighties were a tough time for the company but they persevered and made it through even with a new owner and manager.

David served on the Juab County Wild Life Board before the state wide RAC's were assembled. He has been involved with the National Wild Turkey Federation for over 15 years and was instrumental in introducing wild turkeys into several areas of this state. That has been a very rewarding experience and is an ongoing process today. He currently serves as the NWTF State Chapter Vice President along with his duties with the UGWA and enjoys both immensely. He has also served as the president and secretary for the Nephi gun club. He enjoys shooting, golfing, hunting, and traveling with Carmela any place that is warm.

David has seen the ups and downs in the business world his whole life and believes that those who work hard and provide a "better than expected service" will make it through these hard times just fine. After watching other trades fail because of "price selling" instead of selling their knowledge and service, he hopes that this trade will take the high road and keep the profession worth passing on to the next generation. As with most trades, we provide a valuable service and no

Continued on Page 5



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UTAH GROUND WATER ASSOCIATION

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- B. MANUFACTURER:** Any person, firm or corporation engaged in the manufacturing of equipment, or materials used in the ground water industry.
- C. SUPPLIER:** Any person, firm or corporation engaged in the sale of equipment or supplies associated with the ground water industry.
- D. TECHNICAL:** Any hydrologist, geologist, or engineer involved in teaching, research, consulting and or government services associated with the ground water industry.

This membership allows the joining one representative and spouse/partner of a firm or corporation to benefit from all the privileges of membership in the Utah Ground Water Association. All membership dues are \$50.00 per year, with the year running from February to February. These dues cover membership only in the Utah Ground Water Association. The Utah Ground Water Association is affiliated with the National Ground Water Association and the Mountain States Ground Water Association.

SPOTLIGHT ARTICLE ON DAVE WORWOOD—LICENSE #776 (CONTINUED)

one benefits if we cannot make a living because we priced ourselves out of business. You (the drillers) are a valuable asset and provide a very valuable service to this industry. Your knowledge is invaluable and is something not learned from books, and sometimes not even experience as we all can attest! Each time we lose an "old timer" he wonders what knowledge was lost with them. Having lost two mentors in his life recently, and feeling a huge void in his life due to those losses, he encourages you to share your knowledge with all that will accept it. He is proud to be a part of this special group of people and considers himself fortunate to be involved with the drillers in this state. Whenever he has been in a bind or needed anything they have been there to help. He has called on many of you for help, to borrow, and just for advice and has never been turned down. Since this is not the case in many of the other trades he is involved in, he would like to say thank you to all of you. Most of you will know who you are because of his frequent phone calls!! Hold your head high and show the pride of the drilling industry in this state.

As I write this I have learned that Harold Petersen has passed away and am saddened that another vast amount of knowledge has gone with him. I know Richard has learned much and feel there is even more to learn from our fathers who pioneered before us. My condolences go out to the Petersen family and it is our hope they will be comforted at this difficult time.

God Bless and may you all prosper.

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NEWS FROM THE STATE ENGINEER'S OFFICE

JIM GODDARD

Utah Division of Water Rights Well Drilling Program

The Utah Division of Water Rights will be proposing a bill for the upcoming 2010 Utah State legislative session that would require licensing and regulation of professionals who conduct pump installation and repair work for compensation in regulated wells. There has long been a void in the regulation of water wells and groundwater protection in the State of Utah. That void is the lack of regulation of water well pump-related activities inside a well such as pump installation and repair. Currently, the Division of Water Rights strictly regulates the drilling, construction, deepening, repair, renovation, replacement, cleaning, development and abandonment of wells through licensing and rules, but no such structure exists for pump-related work in a well. A survey across the country revealed that over two-thirds of the states have some form of pump installer licensing and regulation. Experience has shown that significant damage to wells and aquifers can result from pump installation activity such as bacterial contamination and the compromise of casing, screen, and surface seals. Pump installers may understand the technical aspects of pump installation, but may not understand the impact their work may have on the integrity and safety of the well and groundwater resource. Licensing and regulation of pump installers will serve to add another level of protection on the well, groundwater resource, and the water user.

Some pump installers already understand the importance of resource protection and have chosen to obtain a well driller's license because they conduct regulated activities from time to time such as well cleaning, renovation, pitless adapter installation, and development. Seven pump installers currently hold a well driller's license. Many licensed well drillers also install and repair pumps. A rough survey across the State revealed that there are about 20-25 pump installation businesses that currently do not hold a license. Most currently licensed well drillers are in favor of some form of regulation of pump installers because they also understand that the care and safeguards they employ on the construction of a well can quickly be undone by a careless pump installer. The licensed well driller community has been requesting that the Division take up this issue for many years. The Division of Occupational and Professional Licensing has also evaluated this situation to determine if some type of contractor's license would be applicable, but they have chosen not to pursue regulation of pump installation because it is inside of a well and thus by their policy they consider that the Division of Water Right's jurisdiction. The proposal set forth here by the Division of Water Rights amounts to a no-cost change with respect to Division budget requirements. That is, the proposed changes have been developed in such a way as to not require additional budget or staff to implement and operate, and thus the proposed legislation will revise the well drilling statute but will not require an increase in Division budget.

Proposed Implementation

In order to fill this void of well and groundwater protection, we have proposed to make simple modifications to the well drilling statute (Section 73-3-25) and well drilling rules (R655-4) to include pump

installation as a regulated activity requiring licensing. The proposed changes would only require licensing by those who conduct pump installation and repair work professionally and for compensation. Those individuals conducting this type of work on their own property and on their own well will be exempt from licensing. However, those individuals that fall under the licensing exemption, would be required to register with the Division of Water Rights in order to develop a line of communication to allow the Division to provide educational and resource protection information and to submit pump installation reports. Those individuals who currently hold a full water well drillers license shall be grandfathered in to allow them to conduct this type of work (many are already doing pump work) and would not be required to obtain a separate pump installers license.

The focus of the proposed regulation would be to protect the well and resource and not be on the technical and mechanical aspects of pump installation. A pump installer would be required to obtain a license through the Division of Water Rights. The licensing process would require the submission of an application and fee. The applicant would be required to provide documentation of practical experience. The applicant would need to pass written and oral examinations on rules and regulations as they pertain to pump installation and be able to post a bond. Once licensed, the pump installer would revert to the same 2-year licensing and renewal cycle as licensed drillers. Renewal would consist of filing an application and renewal fee and providing documentation of 12 continuing education credits. Neither permits or prior notification (start cards) would be required for pump installation work, however, the pump installer would be required to submit a simple pump installation report upon completion of the work. The blank report could be obtained in hard copy form or from our website.

Continued on Page 8



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GROUND-WATER MONITORING-WELL PROJECT IN SNAKE VALLEY AND ADJACENT AREAS

TAKEN FROM THE UTAH GEOLOGICAL SURVEY WEBSITE AT
[HTTP://GEOLOGY.UTAH.GOV/ESP/SNAKE_VALLEY_PROJECT](http://geology.utah.gov/esp/snake_valley_project)

OVERVIEW

In early 2007 the Utah State Legislature requested the UGS to establish a ground-water monitoring-well network in Utah's west desert, in response to proposed water-development projects in east-central Nevada and west-central Utah. The general objectives of this program are to improve our understanding of the ground-water flow systems and resources, characterize baseline ground-water levels and chemistry, and measure future changes in these parameters.

The information listed below describe the project in more detail and present basic drilling data and other work that the UGS has performed in the area during the past several years.



The monitor-well-drilling project is complete as of mid-2009. Also, we are adding a series of spring and surface-flow monitoring points throughout the valley, and this will be complete by the end of 2009.

This website represents our best knowledge of the results and plans at the date of writing. We are constantly re-evaluating our plans, ideas, and data, so project details and information posted may change in the future. A pending open-file report will contain the most complete and accurate representation of our entire data collection for the project.

PROJECT UPDATES

Drilling Updates

The first phase of monitor-well drilling occurred from early July to early December 2007. The second phase occurred from late March to late May 2008. The third phase commenced in early June and ended in early July 2008. The final phase of drilling started in August 2008 and wrapped up in April of 2009.

Monitor wells were installed at 27 sites, including 46 boreholes and 64 piezometers (a piezometer is a 1.0-inch, 2.0-inch, or 2.5-inch-diameter PVC pipe that is slotted and, therefore, open to the aquifer, over a limited depth range) ([see data section](#)). Most of the wells have pressure transducers installed to monitor water levels over the long term.

The U.S. Geological Survey's Western Region Research Drilling Program and Central Region Drilling Program drilled the majority of the wells using mud rotary and direct-air techniques. At some sites with shallow wells near upwelling areas, Geoprobe and auger drilling methods were used. A series of wells near agricultural areas was drilled by private driller Bob Roche.



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GROUND-WATER MONITORING—WELL PROJECT IN SNAKE VALLEY AND ADJACENT AREAS (CONTINUED)

AQUIFER TEST

During spring 2009, two aquifer tests were performed in deep holes in the carbonate aquifer, surrounded by a network of monitor wells. At site 11 (Ely Limestone), 1200 gpm was pumped for 17 days. At site 3 (Guilmette Formation), 180 gpm was pumped for 12 days. Data from these tests are pending.

SURFACE MONITORING

In the summer of 2009, a program to install surface and spring-flow gages will be undertaken to cover areas that are 1) previously unmonitored, 2) reasonable to monitor, and 3) important to monitor. This includes Twin Springs, Foote Reservoir, Miller Springs, Beck Springs, Clay Springs, and springs along Lake Creek near Dearden Ranch in Burbank. We plan to have real-time data from these sites available on this website once the network is installed.

PROJECT DATA

Project Data is available at http://geology.utah.gov/esp/snake_valley_project/snake_valley_data.htm

PROJECT PERSONNEL

Main Project Contact:

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Utah Geological Survey
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Salt Lake City UT 84114-6100
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Mike Lowe - Ground-Water and Paleontology Program Manager

Lucy Jordan - well-drilling manager and technical expert

Matt Affolter - chief well-site geologist

Kevin Thomas - geophysical logging

Rich Emerson, Stefan Kirby, Mark Yidana, & Janae Wallace - well-site geologists

PREVIOUS UGS WORK IN SNAKE VALLEY

[Hydrogeologic setting of the Snake Valley Hydrologic Basin, Millard County, Utah, and White Pine and Lincoln Counties, Nevada -- Implications for possible effects of proposed water wells](#) (pdf - 88MB)

Report of Investigation 254



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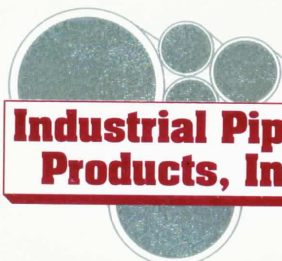
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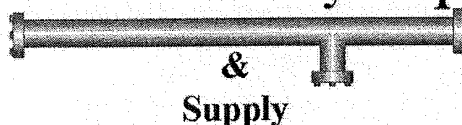
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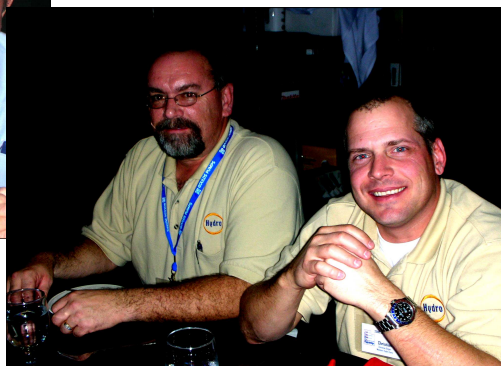
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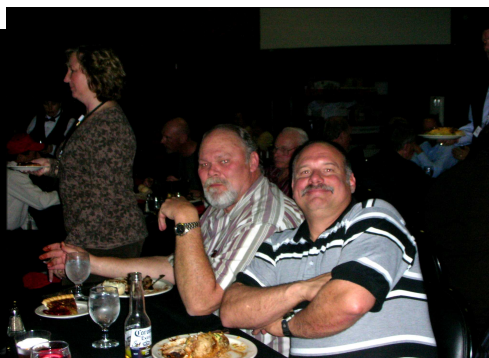
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**The 2010 Annual Convention is quickly approaching.
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SAVE THE DATES! Thursday, January 14th and Friday, January 15th 2010

**2010 UTAH GROUND WATER ASSOCIATION
Annual Mesquite Convention Registration Form
January 14th & 15th at The Casa Blanca Casino & Resort**

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Qty	Item	On or Before December 31st 2009	After January 1st Or At The Convention	Total
1	Member (includes convention registration & annual dues for 2010)	\$175	\$225	_____
_____	Affiliated Spouse/Employee (includes convention registration/class attendance)	\$125	\$175	_____
_____	Non-Member (you DO NOT want to be a 2010 member)	\$200	\$250	_____
	<i>(Each of the above registrations Includes: Breakfast, Lunch and Fundraiser Dinner)</i>			
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_____	Quilt Tickets (all proceeds go to the Crisis Fund)	\$1 each or 6 for \$5		_____
_____	Gun Tickets (all proceeds go to the Scholarship Fund)	\$2 each or 6 for \$10		_____
_____	HD 35" (or more) Television Tickets (all proceeds go to the Scholarship Fund)	\$100 each		_____
_____	Marsha Eppler Crisis Fund Donation			_____
_____	UGWA Scholarship Fund Donation			_____
_____	Vendor Booth Space <i>(includes 1 member & 1 employee registration)</i>	\$400	\$500	_____
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LIST OF ALL CONVENTION/CLASS ATTENDEES

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2010 UGWA ANNUAL CONVENTION NEWS

Below is an early look into this year's key note speaker at our annual convention in Mesquite Nevada. We look forward to seeing you there!



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MIKE H MEHMERT

The 2010 McElhiney Distinguished Lecturer Mike H. Mehmert is an NGWA member and an active Well Standards Committee member. He is the director of Sales and Marketing—Well Products at Johnson Screens, a Weatherford Company. He obtained his B.S. in geology from Texas A&M University in 1970.

His career, spanning more than 38 years, has encompassed consulting, contracting, and manufacturing—almost entirely in the groundwater industry.

Mehmert is also currently a member of the AWWA. He has been an active participant in local, regional, and national associations throughout his entire professional career in the industry. He served on the Colorado Water Well Contractors Board, the Mountain States Association Board, the NGWA Education Committee, the AWWA Project Advisory Committee, and the Board of the American Ground Water Trust, and is the past chairman of the Well Screen Manufacturing Division of NGWA.

His work has been published in the *Water Well Journal*®, numerous technical bulletins, manuals, technical sales support documents, instructional public and private technical training, and education programs for Johnson Screens around the country.

Mehmert was the project director and contributing author to the third edition of *Groundwater & Wells*.

"You Drill a Hole—You Develop a Well" is the title of Mehmert's 2010 NGWREF McElhiney Lecture. Holes are drilled every day for any number of construction or exploration applications that are not required to produce fluids. Examples include boreholes for foundation or structural footings, the installation of instrumentation or explosives, or the recovery of geologic core data. In these instances or even for observation wells—designed only to monitor groundwater levels—the intended purpose is not fluid production.

When a hole is drilled for a producing water well, then further steps are involved. These include design, installation, and completion considerations, all intended to achieve desired yield, operational efficiency, and optimal service life. It is within the completion considerations that we perform what has become commonly known in the industry as well development. All drilling methods disturb, alter, and reduce (to some degree) the hydraulic properties of water-producing geologic formations (aquifers). The objective of well development is to correct the negative effects of the drilling process and restore or improve the hydraulic properties at the borehole within the screen zone.

During the discussion we will examine what the negative drilling impacts are, what can cause them, what we can do about them, and the consequences when they are not addressed. Various development techniques will be presented, with the emphasis being on suitability of technique to completion design. We will discuss and attempt to answer the ever present question: "When is a well developed?" The lecture will address both low- and high-capacity well development issues.

Well efficiency directly impacts operational cost. The lecture will discuss well efficiency and the vital role that well development plays in achieving maximum efficiency. This lecture is intended to emphasize the importance of well development and to challenge industry professionals to examine current practices and always seek improvement.



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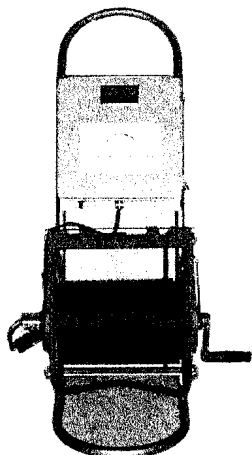
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NEWS FROM THE STATE ENGINEER'S OFFICE (CONTINUED)

JIM GODDARD

Utah Division of Water Rights Well Drilling Program

Because there would be no prior notification, pump installation inspection and investigation would be conducted following a complaint and no routine inspections would take place. Infractions could be issued and enforcement action could be taken against a licensed pump installer who violates the rules in the same enforcement manner as a licensed driller.

Many of the resource protection requirements in the Administrative Rules for Water Well Drillers will apply towards pump installation and repair work. However, creation of a new section in the construction standards section dealing specifically with pump installation regulations may be necessary to cover topics such as pump intake placement, disinfection, pitless adapter installation, surface completion and security, casing standards and extensions, surface seal protection and repair, protection of artesian wells, backflow prevention, pump lubricants and other pump-related chemicals, etc.

Status

Revisions to the well drilling statute have been drafted by the Division, which consist of licensing and regulation requirements for those individuals doing pump installation and repair work for compensation and exempting those who do their own pump work. The Division has worked closely with the Utah Ground Water Association (UGWA) leadership to structure and draft the proposed changes. These draft revisions have been recently presented to the Department of Natural Resources Executive Task Force on Water where the proposed changes passed unanimously. The proposed changes with justification were presented before the Task Force by Division staff as well as UGWA leadership. A legislator working closely with the Task Force has also agreed to sponsor a bill proposing the changes. From this point in time, the proposed changes will be drafted in legislative bill form, then put forth for consideration during the 2010 legislative session. Should you have any questions or comments regarding these proposed changes, please contact Jim Goddard at the Division of Water Rights (jimgoddard@utah.gov or 801-538-7314).



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