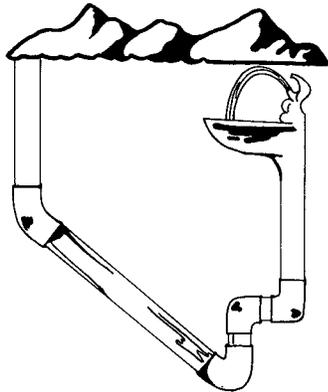


Water Lines



Water Lines is the resource newsletter and calendar of the Nevada Drinking Water and Wastewater Training Coalition.

Volume 32 Spring 2009 Issue

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In this Issue: Focus on Northern Nevada

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Environmental Protection

Editor, Brent Farr, P.E.

Editor, and Production, Joe Beard Jr.

Featured Operator: Larry Jackson

By Crystel Montecinos, Tigren, Inc.

When talking to Larry Jackson, the Foreman of Hawthorne Utilities District, I've often wondered, "Is this guy ever in a bad mood?" I can't imagine it.

Larry retired a couple of months ago, but his good nature and patient manner have been a part of Hawthorne's crew for 34 years. In fact, when I called him for an interview he was back in his old office for a visit. One thing you can say about the Hawthorne



Hawthorne's water comes from several different wells. There are five in Hawthorne and three serving the communities of Mina and Luning. Their water is of good quality so that the only treatment required is chlorine dosing at their storage tanks. Their largest storage tank is 250,000 gallons.

Larry's position as Foreman required that he oversee six employees in the water and sewer section, three in landfill, and another three in garbage pickup.

I asked Larry if he had any recommendations for new folks joining the water industry. He answered, laughing in the usual way "Get all the knowledge you can – then you can look over the knotheads." And he should know. Larry started out working part time for the Utility when he was in high school! After high school he worked at the Army Base for a time and then returned to the Utility as a garbage truck driver. From there, he moved to the Landfill department and eventually moved to the Water & Sewer department.

"At first I was in the ditch behind the back-hoe" he says laughing "and it was a great day when I graduated to being in the back-hoe!" Larry might laugh a lot but he means business and gets the job done right. His crew gave him a lot of ribbing for his insistence that the ditches for water and sewer pipe all be perfectly straight.

(Continued on page 6)



Operator Larry Jackson
formerly with
Hawthorne Utilities District

Crew is that they are like family; always joking and teasing one another.

As with many small water systems, the Hawthorne fellows deal with more than just one portion of the water industry. The Hawthorne Utilities District includes: water and sewer, landfill and garbage pick-up. The system has approximately 2,300 connections.

Call for Nominations for NTC Board Members

Please nominate the person named below (may be yourself) to serve on the board of the Nevada Training Coalition.

Name / Title: _____
Organization: _____
Address: _____
Telephone: _____
Email: _____
Signature: _____

Nominations close March 11, 2009 and elections will be at the NTC meeting in March at the NvRWA Conference. Please direct to: Bob Foerster, NVRWA, 363 Fairview Drive, Carson City, NV 89701 or fax to 775-841-4243.

Safety Zone: Safe Use of Compressed Gas Cylinders

By Ben Foxworthy, Local 350 Plumbers and Pipefitters Union

Serious accidents can result from misuse, abuse or mishandling of compressed gas cylinders. All persons required to handle, use or store these cylinders should receive proper training.

All cylinders, whether they contain flammable gasses or inert gasses, should be treated as high-energy sources, because the contents are under pressure.

Some inert gasses, like nitrogen, are stored at much higher pressures than flammable gasses. This makes these cylinders as dangerous, or more dangerous, than cylinders containing flammable gasses when dropped or damaged.

Always store all compressed gas cylinders in an approved storage container, and use approved methods to secure cylinders when in use to prevent tipping.

Oxygen cylinders should be kept a minimum of 25 feet away from fuel-gas cylinders, or should be separated by a non-combustible barrier with a fire-rating of at least one half hour.

Place all cylinders in a location where they will not be exposed to mechanical or physical damage, heat, or electrical circuits to prevent possible explosions or fires.

Caps used for valve protection should be kept on cylinders at all times, except when the cylinder is being used or charged. Cylinder valves should remain closed when not in use.

It is important not to damage the cylinder valve when moving a cylinder. Cylinders must be moved without applying force

to the cylinder valve. Cylinders should only be moved with the protective cap in place.

Avoid using compressed gasses, flammable or non-flammable, while in any confined space. Inert gasses can reduce the amount of breathable air in such spaces, resulting in suffocation.

When situations require such use, always follow all confined space regulations, with special attention to atmospheric gas testing and fresh air ventilation.

Observance of these rules will help control hazards and provide a safe environment for all individuals in close proximity.

The Spigot Q & A: Focus on Wastewater



Q 1. Which of these processes is **not** included in Preliminary treatment:

- Screening
- Stabilization
- Comminution
- Grit Removal

Q 2. The term DO in wastewater analysis refers to:

- Discharge Out
- Disagreeable Odor
- Demanded Oxygen
- Dissolved Oxygen

Q 3. Samples that should be taken daily from the wastewater pond effluent include:

- COD
- BOD
- DO
- Chlorine Residual

Q 4. Usually pH and dissolved oxygen levels will be the lowest in a wastewater pond in the:

- Morning
- Noontime
- Afternoon
- Evening

Q 5. Generally, a digester has done its job if it reduces the volatile solids content at least:

- 50 - 60%
- 70 - 80%
- 80 - 90%
- 90 - 100%

Regulatory Update: Ground Water Rule

By Kerry Schmelzer, NDEP

Under EPA guidelines, the Ground Water Rule takes effect on 1 December, 2009. The Rule applies to all public drinking water systems that have any of the following characteristics: systems that rely entirely on one or more groundwater sources, systems that are regulated consecutive systems receiving groundwater, or systems that mix surface and groundwater.

The Ground Water Rule consists of four main elements:

1. **Sanitary Surveys.** NDEP must conduct sanitary surveys of all ground water systems. This is not a change from the current practice in Nevada, but some community drinking water systems may change to surveys every three years from the present five-year interval.

2. **Source Water Monitoring.** Systems that do not provide 4-log treatment of viruses for each of their groundwater sources must conduct source water monitoring for one of three fecal indicators: E.coli, Enterocci, or Coliphage. Currently, Nevada laboratories are only certified to test for E.coli. Monitoring is triggered when a routine Total Coliform Rule sample is found to be positive for total coliform.

3. **Compliance Monitoring.** Systems may avoid source water monitoring by demonstrating a

4-log virus treatment at each of their groundwater sources and by conducting regular compliance monitoring.

4. **Corrective Actions.** Systems that have significant deficiencies on a sanitary survey or detect fecal contamination (E.coli) in any of their sources must perform one or more of the following corrective actions: correct all significant deficiencies, provide an alternate source of water, eliminate the source of contamination, provide treatment that reliably achieves 4-log virus inactivation/removal.

In order to avoid the source water monitoring requirement, it will be necessary to demonstrate that your system provides sufficient disinfection for each groundwater source to ensure 4-log treatment of viruses. If you intend to make this demonstration, you will need to notify NDEP by 1 December 2009 and begin compliance monitoring.

The EPA's website is a valuable source of information, including a Quick Reference Guide, fact sheets, and other guidance materials. Go to: <http://www.epa.gov/safewater/disinfection/gwr/index.html>

This article was reprinted with permission from the Idaho Drinking Water Program.

Look for more on the Ground Water Rule in the next Issue of Water Lines

Many thanks to J. Hamner of Rural Community Assistance Corporation for the quiz material. **Answers:** 1.b, 2.d, 3.d, 4.a, 5.a.

Study Tip: Wastewater Treatment can be divided into six categories which follow this order: Preliminary, Primary, Secondary, Sludge Handling, Disinfection and Effluent Disposal.

The Spigot is prepared by Crystel Montecinos, Environmental Consultant for Tigren, Inc. You can contact her at 775/240-1396

Featured System: Round Mountain Utilities

By Bob Foerster, NvRWA

Round Mountain got its start when gold and silver deposits were discovered just over 100 years ago. Mining continues to be the main industry in this part of the Big Smoky Valley. The Round Mountain Gold operation is one of the largest gold mines on earth.

Round Mountain Utilities serves both the old town of Round Mountain, and the newer Hadley Subdivision. Round Mountain Gold Corporation built the planned subdivision. Old Round Mountain is now nearly at the edge of the open pit mine (check the north-north east side in a satellite view on one of the many on-line mapping systems).

Ranching and irrigated agriculture are the other big pieces of the local economic picture.

The old town is served by developed springs in the nearby Toquima Range. In Hadley, both water and wastewater systems were installed for the population of 1,200. Water is provided by deep wells, and is disinfected as a precaution. Additional treatment is not needed. There are 450 service connections, nearly all residential. Wastewater flows to a three-basin aerated stabilization pond system, through a polishing pond, then into two rapid infiltration basins. Additional, unused ponds are used as temporary storage and drying facilities

for sludge removal.

All of these systems are run by one operator, James Walker Jr. Jim has been with Round Mountain Utilities for nearly ten years, and has earned Grade 2 Distribution Operator and Grade 1 Wastewater Treatment Operator Certifications. Since 1992, Dan Sweeney has been the Manager of Round Mountain Public Utilities, Town Manager and Fire Chief. Public Utilities are responsible for water, wastewater and light maintenance on roads. Dan has been on the Board of Directors of the Nevada Rural Water Association (NvRWA) since 2000. He is President of the Nevada Rural Water Association Board of Directors and represents the Nevada association membership on the National Rural Water Association Board.

Aerated stabilization ponds accumulate biosolids, and in 2008, it was time to clean out the accumulation. Hadley's ponds were put in service in 1988, and were taking around 35% of maximum flow until 1994, when population increased and the flow reached 45%. Water depth is normally nine feet, and sludge had reached an average depth of three feet. Nitrogen was detected in monitoring well samples around the wastewater system, which prompted the

NDEP to require inspection of the pond liners. Cleaning the ponds was needed before a complete inspection could take place.

NvRWA Wastewater Technician Curtis Duff helped Jim measure the sludge depth, using a 'sludge judge' from a row boat to get the information on a grid map. There are three settling ponds and one large polishing pond in service. The solution Dan and Jim arrived at was to have the solids pumped out and stored on-site in an empty pond, where they can be stored for up to two years by permit. Once landfill permits are obtained, the dried material will be trucked to a nearby solid waste disposal facility.

The work was divided into two parts, vacuum truck work and a labor portion. The labor was provided by a conservation camp, with six persons outfitted with personal protective equipment provided by the utility. The vacuum truck came in at just under \$10,000 per pond. One pond has now been cleared of sludge, which took ten days. Dan estimates that cleaning all of the ponds would have cost \$240,000 if done using a single contractor. By using separate bids and doing some of the work in-house, the projected cost for cleaning three ponds is now at \$85,000.

First Results from Post Examination Surveys

By Mark Walker, UNR

The results of the first post-certification examination survey conducted by the Nevada Water and Wastewater Training Coalition are in, and they provide us with insights about what operators thought about how well they were prepared to take the test. The bottom line – the more time you spend preparing, the more confident you feel about the outcome of the test.

The Coalition developed the survey following the Spring, 2008 meeting and administered it on a limited basis for the first time in the Fall of 2008. Seventeen operators participated and provided responses to questions about the time spent preparing for the test, the types of materials used and their relative value, and whether they felt confident that they had passed the test.

Among those who felt confident that they had passed an examination, the average amount of time spent preparing was 22 hours. Those who did not feel confident about the examination spent an average of 10 hours preparing.

Overall, the operators reported that they spent up to 60 hours preparing for their examinations, over the course of less than one week, to up to six weeks before the test. They relied on study materials and classes from California State University at Sacramento (the manuals developed by Ken Kerry), the Nevada Rural Water Association, the American Water Works Association, and classes held by the University of Nevada.

The operators also reported that they found some topics

difficult and some easy to cope with. The difficult questions were about disinfection, pumps, chemistry, law and those involving calculations and mathematics. The easy questions focused on safety, tank coverage, chlorine cylinders and fire extinguishers.

The Coalition plans to continue surveying operators immediately after they complete Certification Exams. The purpose of the survey is to improve training for operators in Nevada, by focusing on topics that operators find difficult on tests.

The information gathered during the survey will be a huge help in making sure that the partners in the Training Coalition help operators succeed when taking certification examinations in the future.

Featured System: Round Mountain Utilities

(Continued from page 4)

Sludge volume decreased by about half, to eighteen inches on average, when the pond was initially dewatered. Sludge was pushed to the vacuum pick-up point, and some water was added to make it move well. Next, a lining inspector acceptable to the State, and/or a liner repair company will be contracted to certify the liners.

Sludge drying is being enhanced by a piped air header system, built in-house. The three pond project will result

in around 58 cubic yards of dried sludge, and removal to the landfill will be done in-house. Land application was considered, but here, sludge removal is only a periodic need and working through the permitting process, the cost of hauling liquefied material, and the necessity to meet all of the requirements (such as the limitation on standing water), lead the Utility to decide on landfilling as the disposal method.

These tips are for the ‘lessons

learned’ file: work with your engineer, the plan for removal will need to be signed-off; get the work divided where feasible, and get separate bids for each part; do what you can do, in-house; plan ahead.

If you have a pond, it will need cleaning at some point. Are you monitoring accumulation? Do you have a plan how to remove the sludge, how to dry it if needed, and where to dispose of the sludge?

Wastewater Operators Certified



These wastewater operators passed certification exams for treatment and collection grades 1, 2 and 3. Congratulations to all !

Treatment grades 1, 2 and 3

Grade 1: Colin Bancroft, David Bruketta, Stanley Hall, Jim Kerr, Roger Marshall, Vincent Salomone, Danny Sineath

Grade 2: Jeffrey Cearfoss, Steve Gonzales, Randy Greenwell, Cornell Hagler, Dale Johnson

Grade 3: Kenneth Buck, Mark Tookey

Collection grades 1 and 2

Grade 1: Steve Rippe

Grade 2: Guy Kikuchi, Donald Moden

Wastewater Laboratory Analyst grades 1 and 3

Grade 1: Joyce Patrick, Lawrence Layman

Grade 3: Thomas Farrell, Mark Lowe

Industrial Waste Inspector grades 1 and 3

Grade 1: Brynda Gutierrez, Ken Peck

Grade 3: Kelly Hale

The NWEA Certification Board is pleased to announce that computerized exams are now being offered! Pencil and paper exams will continue to be offered quarterly for the same fees.

Featured Operator Larry Jackson

(Continued from page 1)

I'm sure that many of Larry's achievements have come from an eye on precision and his belief in education. Larry holds a Distribution Grade 2 License and a Wastewater Collections Grade 1. Take note water operators; the crew in Hawthorne never, ever get to the end of their license renewal period with too few credit hours!

Marlene Bunch, the Office Manager of Hawthorne Utilities, had this to say about our Featured Operator, "Larry is missed a lot. His soft demeanor and easy going attitude could defuse any tough situation that might come up. His experience in the department was priceless. He started out in the refuse department and worked his way up through the ranks. He knew all aspects from the bottom to the top. The guys just could never put one past him. At times that turned out to be hilarious!"

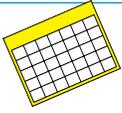
Larry has been planning his retirement for some time now, and each time I asked him what he would be doing his answer was "Well, the Mrs. has a long list for me." I could tell he was smiling. Larry and his wife have been married for 35 years. They have four children and seven grandchildren.

Community spirit and service has always played a big role in Larry's life. He is still the Chaplain for the Hawthorne Sheriff's Department and also the Minister of Trinity Church. He and his wife enjoy collecting, organizing, and delivering food for people in need.

Not surprisingly, Larry's words of advice to everyone are "Enjoy your job!" It's great advice when you think about it.



Steve Gustafson, Marlene Bunch, Larry Jackson



Training Calendar for 2009

March 10-13 - Stateline - NvRWA Training and Technical Conference. Contact NvRWA at 775/841-4222 or nvrwa.org for schedule and registration information.💧

March 10 - Reno - Distribution Fundamentals Review for D1 and D2 conducted by AWWA. Contact Jennifer Bauza at 909/481-4688 x 2113 or <http://ca-nv-awwa.org/CA-NV/calendar> for more information.💧

March 11 - Reno - Distribution Fundamentals Review for D3 and D4 conducted by AWWA. Contact Jennifer Bauza at 909/481-4688 x 2113 or <http://ca-nv-awwa.org/CA-NV/calendar> for more information.💧

March 12 - Reno - Treatment Fundamentals Review for T1 - T3 conducted by AWWA. Contact Jennifer Bauza at 909/481-4688 x 2113 or <http://ca-nv-awwa.org/CA-NV/calendar> for more information.💧

March 13 - State Water Certification Exams (Check NDEP/BSDW website. Fee and application due 45 days prior to Exam date).

March 31 - Online - Wastewater Math Review conducted by RCAC. For more information, contact Mark Wiseman at 800/283-7222.💧

April 17 - Various Locations - UNR Video conference. Topic: To Be Announced. Info: Crystel Montecinos at 775/240-1396.💧

April 20-22 - Panaca - Video training on electrical topics. Contact NvRWA at 775/841-4222 or nvrwa.org for more information.💧

May 12 - Online - Water Distribution Math Review conducted by RCAC. For more information, contact Mark Wiseman at 800/283-7222.💧

May 15 - Various Locations - UNR Video conference. Topic: To Be Announced. Info: Crystel Montecinos at 775/240-1396.💧

June 9-11 - Reno - Distribution and Treatment Operator Certification Review Workshops conducted by AWWA. Contact Jennifer Bauza at 909/481-4688 x 2113 or <http://ca-nv-awwa.org/CA-NV/calendar> for more information.💧

June 12 - Various Locations - UNR Video conference. Topic: Pressure Reducing Valves. Info: Crystel Montecinos at 775/240-1396.💧

June 26 - Various Locations - UNR Video conference. Topic: To Be Announced. Info: Crystel Montecinos at 775/240-1396.💧

Ongoing - Online - Various Training Topics offered by RCAC. For more information, contact Stevan Palmer at 775/750-1884.💧

Useful Training Contacts

University of Nevada, Reno CABNR & Cooperative Extension

UNR videoconference classes for water system operators and managers are available in most communities. To request a workshop in your area, call Crystel Montecinos at 775/240-1396 or e-mail: xtelle@aol.com.

Community College of Southern Nevada Wastewater & Water Technology Program

Info: LeAnna Risso, 702/434-6600 ext. 6418.

WWET Training in Clark County

Training for water treatment plant and distribution system operators, wastewater treatment plant and collection system operators, and other professionals working within these fields. Info: Jeff Butler 702/258-3296; see www.wwet.org for a current training calendar.

State of Nevada Water Certification Exams

All exams will be proctored on the date listed. Applications and fees are due to the state (Steve Brockway) 45 days before exam dates. A proctor will contact examinees to schedule testing. Contact Ron Penrose at 775/834-8017 for information about 2009 exam dates.

Water exams are scheduled in the first three calendar quarters of each year at locations throughout the state. Info: 775/687-9527 or http://ndep.nv.gov/bsdw/cert_home.htm. For additional info on wastewater: 775/465-2045 or www.nvwea.org.

Nevada Rural Water Association

Please send requests for training to nvrwa.org, or contact staff directly at 775/841-4222.

💧 This symbol designates Nevada Division of Environmental Protection pre-approved training for certification renewal contact hours.

Change of Address Requested

Operator Certification Administrators have noted that a large number of certificates are being returned to the State, because Operators have not updated their mailing addresses after moving.

Operators are asked to promptly notify the State when they have changed addresses.

Please contact Steve Brockway at 775-687-9527 or sbrockway@ndep.nv.gov.

Nevada Drinking Water and Wastewater Training Coalition

**American Water Works Association
California/Nevada Section**
www.ca-nv-awwa.org
909/291-2101

Indian Health Service
Dominic Wolf, 775/784-5327
NDEP

<http://ndep.nv.gov>
Adele Basham, DWSRF, 775/687-9488
Michelle Stamates, AB 198 Water
Grant Program, 775/687-9331
My-Linh Nguyen, Wellhead Protection,
775/687-9422

Nevada Rural Water Association
www.nvrwa.org
775/841-4222

Bob Foerster, Executive Director
John Allred
Curtis Duff
Teresa Taylor
Andy Andersen
Dan Tarnowski
David Willard

Public Utilities Commission of Nevada

www.puc.state.nv.us
Mark Clarkson, P.E., Water
Engineer, 775/684-6132
Leslie Tench, Senior Engineering
Analyst, 775/684-6140

Bureau of Safe Drinking Water
<http://ndep.nv.gov/bsdw/index.htm>
775/687-9520
Jim Balderson, SWAP, 687-9517
Steve Brockway, CEU approval, 687-9527
Patty Lechler, 687-9529
Bert Bellows, arsenic, 687-9525

Nevada Water Environment Association
www.nvwea.org
775/465-2045
Starlin Jones, 775/861-4104
Eric Leveque, 702/792-3711

Rural Community Assistance Corporation
www.rcac.org
775/323-8882
Stevan Palmer, 775/750-1844

**U.S. Environmental Protection
Agency, Region 9**
www.epa.gov/region09
Sara Jacobs, 415/972-3564

USDA Rural Development
www.usda.gov/rus/water/index.htm
Cheryl Couch, 775/887-1222, ext. 22
Kay Vernatter, 775/887-1222 ext. 28

**University of Nevada, Reno
Dept. of Civil Engineering**
Dean Adams, 775/784-1474

Tigren, Inc.
Crystel Montecinos, 775/240-1396

**UNR Colleges of Natural Resources
and Environmental Science, and
UNR Cooperative Extension**
www.unce.unr.edu/swp
Mark Walker, 775/784-1938
NDEP Board for Financing Water Projects
<http://ndep.nv.gov/bffwp/index.htm>
**Water/Wastewater Education and Training
Consortium of Southern Nevada — WWET**
www.wwet.org
Jeff Butler, 702/258-3296
Farr West Engineering
Brent Farr, P.E. 775/851-4788

2009 NTC Board Members

Bob Foerster, Chair
nvrwa@pyramid.net or 841-4222

Dean Adams
vdadams@unr.nevada.edu or 784-1474

Don Allen
ssmwc@aol.com or 577-2223

Mark Walker
mwalker@unr.edu or 784-1938

Chet Auckly
cauckly@calwater.com or 408-367-8232

VACANT

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Farr West Engineering
5442 Longley Lane, Suite B
Reno, NV 89511

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