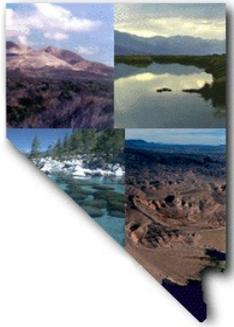


Water Lines



Featured Article:

Well Classification and Compliance

By: Andrea Seifert, NDEP Bureau of Safe Drinking Water

Whatever the source—well, spring, surface water intake—each water system has a unique way of operating their sources to ensure their supply meets the various requirements of drinking water quality and quantity. Small systems may have only one good well and an emergency well with less desirable water quality. Large systems with both surface water and well water may only utilize wells during the summer. Some systems run their wells in a lead/lag mode, so one well is the primary producer while the other turns on during high demands. Other systems rotate the usage of their wells on a set frequency (e.g. daily, weekly, or yearly).

Classifying the usage of the well is how the Bureau of Safe Drinking Water (BSDW) determines compliance and whether or not monitoring and Operations and Maintenance (O&M) procedures are adequate. The classifications are as follows:

Permanent: A well that is routinely utilized throughout the year, including wells utilized daily or as back-up/standby sources for peak demands or operational flexibility.

Emergency: A well that is not preferred for usage due to undesirable conditions (e.g. water quality, well construction) but could be utilized if a failure of the primary source occurs.

Seasonal: A well that is utilized during certain periods of the year.

Special attention must be given to emergency and seasonal wells to avoid unexpected consequences associated with water quality and compliance monitoring.

Water quality during start-up of a well can be different than during continuous operations. Contaminants can be present in higher concentrations during start-up. Therefore, flushing of the well is required. Based on historic water quality and well construction and usage, a written Standard Operating Procedure should be made a part of the O&M plan and followed to ensure that the well meets water quality standards and is operational when needed.

Monitoring requirements for wells are established by regulation with consideration to the well's vulnerability to contaminants and usage. It is essential to determining compliance that emergency wells and seasonal wells be discussed with BSDW to ensure water quality standards are met, that appropriate monitoring is performed, and that the well utilization is tracked.

If you have a unique situation with your well(s) which has not been previously discussed with BSDW, contact the office regarding the classification of your well(s) and their monitoring requirements.

Updates and Announcements

AB198 Grant Program Suspended Indefinitely

The Capital Improvements Grant (AB198/237) program is supported by proceeds from State general obligation bonds and the debt service is financed by property tax revenue. Since its inception by the 1991 Nevada State Legislature, the grant program has provided more than \$98M in grant funding for water and irrigation system projects in 16 Nevada counties. The current analysis of debt affordability by the State Treasurer's Office indicates no capacity to take on new debt at this time. Declining property values have resulted in much lower than projected revenue, affecting the State's debt capacity. The grant program has been suspended indefinitely and the Board will not be considering any further grant applications at this time.

Change of Mailing Address Requested

Operator Certification Administrators have noted that a 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 Nan Paulson at 775-687-9447 or npaulson@ndep.nv.gov

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2011 NTC Board Members

Bob Foerster, Chair 775-841-4222
nvrwa@pyramid.net

Dean Adams 775-784-1474
vdadams@unr.nevada.edu

Don Allen 775-577-2223 ssmwc@sbcglobal.net

Mark Walker 775-784-1938
mwalker@unr.nevada.edu

Dale Johnson 775-738-6816
djohnson@elkocountynev.net

Vacant

The Spigot Q & A:

Focus on Pumps



1. What type of motor is used when infrequent starting is required and the load needs to be brought up to speed quickly?
 - a) Repulsion-induction b) Capacitor-start c) Wound-rotor d) Synchronous
2. What type of motor is the simplest of all AC motors, with rotors consisting of a series of bars placed in slots?
 - a) Squirrel cage b) Wound rotor c) Capacitor start d) Synchronous
3. What is the most probable cause of a pinging sound coming from a pump?
 - a) Descaling b) Cavitation c) Corrosion d) Hardness
4. For increased performance in a suction lift condition, the pipe reducer between the suction piping and the pump should be _____?
 - a) Eccentric rather than concentric b) Concentric rather than eccentric
 - c) One diameter smaller than the pump inlet d) Evenly matched with the volute
5. When replacing packing with a mechanical seal the _____ should also be replaced.
 - a) Bellows b) Springs c) Packing gland d) Set screw
6. In order to reduce the risk of vortexing, the inlet pipe should generally be submerged _____.
 - a) At least two and a half pipe diameters b) Three feet from the bottom of the tank or reservoir
 - c) Near the baffles d) At least six pipe diameters
7. The inlet end of a pipe for suction pumping should be _____?
 - a) Square cut b) Concentric c) Bell-shaped d) Extendable



Answers to the Spigot questions

1) B 2) A 3) B 4) A 5) C 6) D 7) C

Many thanks to the Skeet Arasmith's "Pumps & Plumbing" (ACR Publications 2000). This book is a great resource for water and wastewater operators and contains a comprehensive trouble-shooting guide.

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

Safety Zone: Management's Responsibility For Safety

By: Neil Worthen, RCAC

Aside from the responsibility of each employee to work safely, management has the primary responsibility for creating and maintaining a safe workplace. Facility managers should examine their utility's safety policies and ensure that a complete and effective program has been established. They should also observe plant personnel routinely to verify that they actually perform their duties in a safe manner.

Management's responsibility for safety consists of five major areas:

1. Providing a safe place to work
2. Providing safe equipment and tools
3. Hiring only qualified personnel, or personnel with the aptitude to be trained
4. Communicate safety information to employees
5. Motivate employees to be safety minded

Management must ensure that facilities have been designed and constructed in accordance with applicable safety codes. All machinery must be provided with proper safety guards. Equipment must be adequately spaced to prevent the catching of clothing and to facilitate safe repair and maintenance. All electrical equipment and wiring must be properly insulated and grounded.

All structures and appurtenances should be kept in good repair and maintained in neat condition. Tools should be picked up and walkways and stairways kept free of grease, oil and debris. Signs should be provided at all entrances to rooms where toxic or flammable gases may be present, where high noise levels exist, or where high voltage electrical equipment is located. Protective guards and handrails that are removed for maintenance

must always be replaced once work is completed. Ventilation systems for enclosed spaces must be kept operational when these spaces are occupied. Instrumentation for the detection of toxic and flammable gases must be regularly calibrated and kept in working order at all times. After spills and maintenance activities, areas should be washed down or cleaned up. Light fixtures should be inspected regularly and re-lamped when needed.

The general condition of structures and equipment is important to safety. In the course of duty, operators often visit areas not normally frequented by maintenance and supervisory personnel. Their observations are important and valuable in reducing hazards. Hazards may result from malfunctions and failures of many types, including: displaced gratings, open manholes, damaged sidewalks, weeds or grass hiding tripping hazards, windows left open during inclement weather, and leaking process lines. Any apparent or potential hazard should be reported and resolved as soon as possible. Operators should have familiarity with a wide range of facility procedures and specific job responsibilities so that unusual conditions can be seen and addressed.

While new employees may not be already qualified for their new job, they may be trained. Those lacking the necessary physical or mental capability to perform required job tasks are obviously more susceptible to accidents. It is therefore important that new employees are carefully evaluated **prior to** employment and that proper instruction on both job skills and safety training be provided immediately thereafter.

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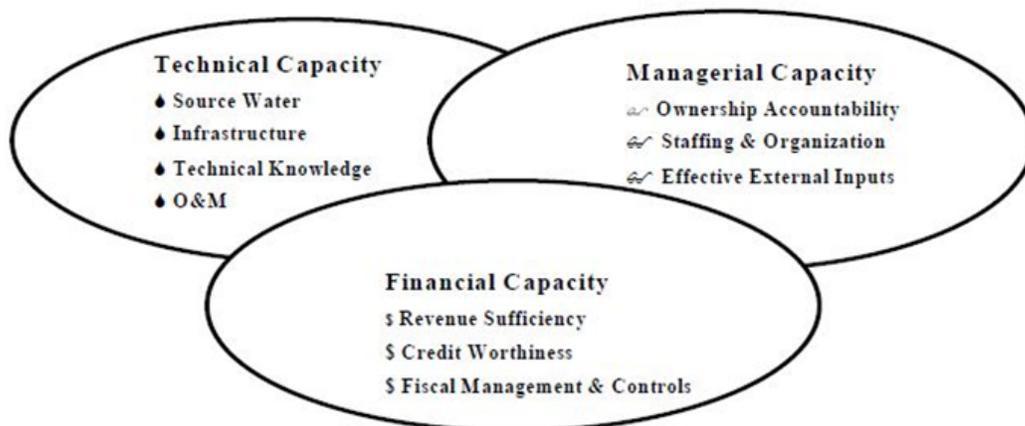
Capacity - What's in it for you?

By: Michelle Stamatos, NDEP Office of Financial Assistance

Water systems often focus on minimizing water rates and avoiding rate increases. In doing so, many find themselves lacking the revenue to operate effectively. Infrastructure is often taken to the point of failure. Systems that operate in this manner lack technical, managerial and/or financial (TMF) capacity. Capacity development emphasizes continuous improvements in the water systems to assure and enhance both compliance and performance. While many organizations offer capacity development assistance, this article focuses on the assistance provided through funding from the Drinking Water State Revolving Fund (DWSRF).

Section 1420 of the Safe Drinking Water Act (SDWA) requires that states develop and implement a strategy to assist public water systems in acquiring and maintaining technical, managerial and financial capacity. States failing to develop and implement capacity development programs will have up to 20% of their DWSRF allotment withheld. The DWSRF is a low interest, loan program to help public water systems finance the infrastructure needed to achieve or maintain compliance with SDWA requirements and to achieve the public health protection objectives of the Act.

Water System Capacity



Adequate capacity in all three areas is necessary for a system to have “capacity.” *Technical capacity* refers to the physical infrastructure of the water system, including but not limited to the adequacy of source water, infrastructure adequacy (source, treatment, storage, and distribution), and the ability of system personnel to implement the necessary technical knowledge in operating and

maintaining the water system and complying with applicable health standards. *Managerial capacity* includes the ownership accountability, staffing and organization, and effective interactions with customers, regulators and other external entities. *Financial capacity* refers to the financial resources of the water system,

Cont' on page 6

Cont' Capacity - What's in it for you?

including but not limited to the revenue sufficiency, credit worthiness, and fiscal management and controls.

An extensive data collection effort to evaluate the capacity of small water systems was conducted in 2003. Although much good and useful information about each system's capacity was collected, it was discovered that the scoring system did not provide information about the real need for technical assistance. The method of data collection was revised in 2007 to a format that has more of a focus on technical assistance needs. The new survey format is interactive providing the water system an opportunity to think about and evaluate their capacity. This effort helps the State focus its efforts where the needs are. It also helps water systems to know where they stand and how they can improve.

DWSRF currently provides funding to the Nevada Rural Water Association for assistance in all aspects of capacity development. This assistance is provided to

Nevada's water systems free of charge. The goal of technical assistance is the increase in capacity through teaching and training that will last long after the assistance provider is gone. Significant money has already been spent in capacity development over the past 10+ years, and in order to help identify the assistance needs of our Nevada water systems, we will review performance indicators used in the 2007 survey in the coming issues of Water Lines. Staff with the DWSRF and NVRWA will be working with water systems starting in 2011 to show improvements and continuing needs in capacity development and to assist water systems in doing self-evaluations. Funding for these assistance programs is not unlimited, and the ultimate goal is to put the available funds to the most beneficial use. If we don't measure our capacity development, we can't manage our assistance efforts.

Further information on capacity development and technical assistance and TMF survey forms will soon be made available on our website at <http://ndep.nv.gov/bffwp/dwsrf1.htm>.

Cont' Safety Zone: Management's Responsibility For Safety

The fourth and fifth areas are vitally important. An effective safety program requires that all personnel know and practice the safety rules, have immediate access to emergency instructions and procedures, and be continually aware of the requirements for safety. Employees must be thoroughly familiar with safety procedures to avoid unsafe, potentially dangerous work practices. Management should organize and develop employee

education and training to include instruction and periodic drills.

Employees have a responsibility to themselves, their co-workers and visitors to maintain a safe workplace environment. This responsibility must be stimulated and monitored by management to ensure that the safety program is both properly followed and effective.

Consolidation:**of Nevada Water and Wastewater Training Coalition and the Certified Operators Forum**

At a joint meeting of the NTC and Operators' Forum during the March NvRWA Conference, the groups formed a subcommittee to work out the logistics of consolidation. The subcommittee will report to another joint meeting in June, 2011. Consolidation would place the exam outcomes analysis and training direction planning into one industry group. The Certified Operators Forum would take on the same work for wastewater from the NTC, and coordinate with NWEA, along with the responsibility for developing and editing the *Water Lines* quarterly.

The NTC started in the early 1990's to support implementation of the then-new operator certification requirements. Over the years, NTC board members have included training providers and representatives from wastewater and water systems. The Certified Operators' Forum is an advisory committee to the State Environmental Commission, providing input from the industry as well as identifying training needs. Talks between the groups over the past several months lead to the conclusion that going forward, a single, slightly larger group would best serve the water and wastewater utilities in Nevada.

Wastewater Operators Certified



The following wastewater professionals passed their Wastewater Treatment, Laboratory, Collection, Industrial Waste Inspector, and Nevada Plant Maintenance exams in December 2010.

WASTEWATER TREATMENT GRADES

Grade 1: Jeff Bloom, Joseph Groves, Stevan Palmer, Joel Pepper, Marc Rohus, David Rudolf, George Tinkorang

NEVADA COLLECTION

Grade 1: Luis Ysassi
Grade 2: John Philip DeJesus
Grade 3: Donald Moden

WASTEWATER LABORATORY ANALYST

Grade 1: Phuoc H. Tran

NEVADA PLANT MAINTENANCE

Grade 2: Paul Reed
Grade 3: Ray Anderson, James Cowger, Jason Haag, David Hixson, Anthony Mayor, David Pearce

NEVADA INDUSTRIAL WASTE INSPECTOR

Grade 2: Robert Robbins

2011 NWEA Annual Conference
May 17th-18th, 2011
Sam's Town Hotel and Casino
Las Vegas, NV
For more info go to: <http://nvwea.org/home>

Wastewater Exam dates for 2011:

5/19/11 Exam, deadline - 4/19/11
6/16/11 Exam, deadline - 5/16/11
9/15/11 Exam, deadline - 8/15/11
12/15/11 Exam, deadline - 11/15/11

TRAINING CALENDAR FOR 2011

Consumer Confidence Reports:

When: Thursday, Apr 21, 2011

Where: N. Tahoe Events Center, Kings Beach, CA

Description: RCAC class - NDEP approved for 6 DW Op Cert Renewal Contact Hours.

Contact: Stevan Palmer 775/750-1884 or spalmer@rcac.org

Infrastructure Funding from A to Z

When: Tuesday, May 10, 2011

Where: N. Tahoe Events Center, Kings Beach, CA

Description: RCAC class - NDEP approved for 6 DW Op Cert Renewal Contact Hours

Contact: Stevan Palmer 775/750-1884 or spalmer@rcac.org

Water Treatment Op Cert Test Prep-Grades 1 & 2

When: May 18 – 19 2011

Where: N. Tahoe Events Center, Kings Beach, CA

Description: RCAC class - NDEP approved for 12 DW Op Cert Renewal Contact Hours

Contact: Stevan Palmer 775/750-1884 or spalmer@rcac.org

SCADA

When: Wednesday, Aug 24, 2011

Where: N. Tahoe Events Center, Kings Beach, CA

Description: RCAC class - NDEP approved for 6 DW Op Cert Renewal Contact Hours.

Contact: Stevan Palmer 775/750-1884 or spalmer@rcac.org

Distribution Op Cert Test Prep - Grades 1 & 2

When: Sep 14 – 15 2011

Where: N. Tahoe Events Center, Kings Beach, CA

Description: RCAC class - NDEP approved for 12 DW Op Cert Renewal Contact Hours.

contact: Stevan Palmer 775/750-1884 or spalmer@rcac.org

Water Op Certification Exam Dates:

6/15/11 Exam

Deadline: 5:00 p.m. on May 2, 2011

9/21/11 Exam

Deadline: 5:00 p.m. on August 8, 2011

CONT' TRAINING CALENDAR FOR 2011

TCR/ Disinfection of Tanks & Pipes

by: Andy Anderson, NvRWA

April - Dayton & Elko

May - Yerington & Hawthorne

July - Panaca & Overton

August - Ely & Silver Springs

💧 Contact: Bob Foerster at 775-841-4222

June 17, 2011 - Disinfection & Chlorination

by: RCAC

💧 Contact: Crystel Montecinos 775-240-1396

July 15, 2011 - Review for Exam

by: Andy Anderson

💧 Contact: Crystel Montecinos 775-240-1396

August 19, 2011 - Shut - Off Type Valves

by: Lindstrom, American Flood Control

💧 Contact: Crystel Montecinos 775-240-1396

September 23, 2011 - Backflow & Cross Connection Prevention Devices

by: Sean Perry, Apollo Valves

💧 Contact: Crystel Montecinos 775-240-1396

Ongoing On Site - Various training topics -

by: RCAC

💧 Contact: Stevan Palmer at 775-750-1884

Ongoing On Site - Various Management, Board, Wastewater and Water Topics, at your request - NvRWA

💧 Contact: Bob Foerster at 775-841-4222

Upon Request: Instructor-Lead CSUSac Courses: Distribution or Treatment, 6 - 8 weekly trngs. Contact NvRWA for details and to schedule. Gain the approved post-secondary training while preparing for your exams Contact: Bob Foerster at 775-841-4222 send us your email address to get on the announcement list.

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 email at: xtelle@aol.com

Community College of Southern Nevada Wastewater Water Technology Program www.cleanwaterteam.com

LeAnna Risso at 702-668-8487; LRisso@cleanwaterteam.com

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. Contact Jeff Butler 702-258-3296. For the current training calendar see www.wwet.org.

State of Nevada Water Certification Exams

All exams will be proctored on the date listed. Applications and fees are due to the State Bureau of Safe Drinking Water 45 days before exam dates. A proctor will contact examinees to schedule testing. Contact Ron Penrose at 775-834-8017 for information about the exam dates.

Water exams are scheduled in the first three calendar quarters of each year at locations throughout the state. For additional information on

Drinking water call: 775-687-9527 or go to http://ndep.nv.gov/bsdw/cert_home.htm

Wastewater call: 775-465-2045 or go to www.nvwea.org

Nevada Water Environment Association

Jennifer McMartin

(775)465-2045

jenniferm@nvwea.org

www.nvwea.org

Nevada Rural Water Association

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

💧 Designates Nevada Division of Environmental Protection pre-approved training for certified renewal contact hours.

3189

STATE OF NEVADA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF FINANCIAL ASSISTANCE
901 SOUTH STEWART STREET SUITE 4001
CARSON CITY NV 89701
RETURN SERVICE REQUESTED

Water Lines

Spring 2011

Nevada Drinking Water and Wastewater Training Coalition

American Water Works Association
California / Nevada Section
www.ca-nv-awwa.org or 909-291-2100

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

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

UNR Dept. of Civil Engineering
Dean Adams 775-784-1474

Rural Community Assistance Corporation
www.rcac.org or 775-323-8882
Stevan Palmer and Preston Kinne

Tigren, Inc.
Crystel Montecinos 775-240-1396

U.S. Environmental Protection Agency,
Region 9
www.epa.gov/region9
Jason Gambatese, 415-972-3571

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

Nevada Rural Water Association
www.nvrwa.org or 775-841-4222
Bob Foerster, Executive Director
John Allred
Andy Anderson
Curtis Duff
Lizzy Andrew
Tahnee Praiswater
Jim Renfree
Paul Strasdin
Dan Tarnowski
Teresa Taylor
Jim Weeks
David Willard
Tatiana Zehl

Indian Health Services
Dominic Wolf 775-784-5327

UNR Colleges of Natural Resources and
Environmental Science, and 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>

NDEP
<http://ndep.nv.gov/index.htm>
Adele Basham, DWSRF 775-687-9436
Capital Improvements Grants Program
Michelle Stamates 775-687-9331
My-Lihn Nguyen, Wellhead Protection
775-687-9422

Water/Wastewater Education and Training
Consortium of Southern Nevada—WWET
www.wwet.org
Jeff Butler, 702-258-3296

Public Utilities Commission
www.puc.state.nv.us
Mark Clarkson, P.E., Water Engineer
775-684-6132