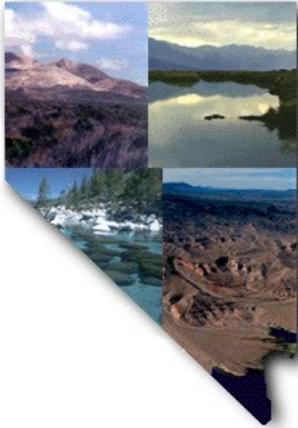


Water Lines



Featured Article: Investing 101

By Andy Anderson, Nevada Rural Water Association

Are we in a Bear market or is it a Bull market? Are we in a Recession or is it a Depression. Are we in a Recovery? What Should I buy gold, silver, and oil or Stocks or Bonds? Should I try one of those “get rich quick” schemes? Tough questions and I really don’t have those answers, but what I do have is a sure-fire investment guaranteed to provide you with a good income and future. It is a commodity but it’s not oil, gold or silver. You get out of it what you put into it. Guaranteed! The commodity is...YOU! Yes, you.

Let’s start with a real basic investment, time for money. What is required?

1) Your choice – job or a career?

For me, a job was something that got me by. Yeah, it paid the bills but that was about it. What I wanted was a career, something that I enjoyed and wanted to do. Think about what you wouldn’t mind doing every day for the rest of your working life. My personal favorite is working in the water business and since you are reading this article in *Water Lines*, I’m going to make the assumption that you’ve chosen this field as your career too. For me, this is the best of all careers since you can choose to specialize or “do it all” – meaning yesterday you could have been doing electrical and control work, today you could be pounding nails and tomorrow you just might be rebuilding a valve. There’s nothing boring about that.

2) Getting started

Unlike becoming a plumber or an

electrician in a trade union where you can spend around 5 years or so of apprenticeship training with around 144 hours or more of education, it’s a little easier in the water and wastewater fields. You will have to take a certification test administered by the state, usually with a 70% minimum passing score you can become a certified water or wastewater operator. With appropriate grade level certification, you can now operate systems. Usually, the first two certification grades require experience and knowledge collected through books and magazine articles. For the higher level certifications, more experience and college level educational courses are required.

3) Is the certification test hard?

Well, yes and no (how’s that for waffling???). Like all trades, the water and wastewater businesses have their own lingo (terminology specific to the work we do). You need to learn the language. You’ll pick it up quickly working around your fellow operators. You also need to learn the business of water or wastewater operations – how to read, set and repair meters, install and repair water mains and services, taps, pumps, motors, valves, lagoons, ponds, etc. You’ll also need to know about the various State and Federal Regulation requirements for systems and operators. So, is the test hard? Only if you’re not properly prepared. Try to spend at least a half hour to one hour daily in the books. Again, the more you put in the more you will

Cont’ on page 3

2009 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.com

Mark Walker 775-784-1938

mwalker@unr.nevada.edu

Chet Auckly 408-367-8232

cauckly@calwater.com

Mike Ariztia

mariztia@svgid.com

Vacant

Inside This Issue

Safety Zone	2
Spigot Q & A	3
Integrated Source Water Protection Program	4
Newly Certified Operators	6
Training Calendar	7

Safety Zone: Planning an Effective Safety Program

By Neil Worthen, RCAC

Safety and health programs exist to protect employees from undue exposure to chemical, physical, and other health hazards of the work environment. Management and employees share the responsibility for developing a well-planned, well-written occupational safety and health program. Such a program, printed and distributed to all employees, shows commitment and demonstrates proactive management practices.

Budgetary Impacts

New budget proposals should give priority to implementing a comprehensive safety and health program. The financial impact of such programs should be considered throughout the budget planning process. Key budget areas that are typically affected are:

- Personnel (safety specialists, hours spent in training, safety committee meetings, etc);
- Vehicles and equipment (adding safety guards, lights, roll cages etc);
- Capital outlay (modifications to existing facilities, purchase of capital equipment such as fall protection systems, confined space entry equipment, self-contained breathing apparatus, etc);
- Personal Protective Equipment (PPE) (hard hats, goggles, gloves, traffic cones and vests, other small items); and

- Contract services (safety specialists, training services, facilities inspection, safety manual preparation).

Goal Setting

To be successful, goals must be measurable and attainable. Long-term goals, using short-term goals as building blocks, are attained step by step. A typical long-term goal of any successful safety program is to eliminate injuries. Realistic goals for reducing injuries and risk can be set once the magnitude of present or past injuries and risk have been identified. Solutions to some of the questions will be obvious; others may require research. To begin goal setting, ask questions such as the following:

- What is the source of the most injuries, either in numbers or lost time and medical costs?
- What is the most serious health risk in my facility or workplace?
- What hazardous chemicals are workers exposed to most frequently?
- Can a hazard be eliminated? If so, how? If not, how can the magnitude of each problem be reduced?

The following goal statements are examples of realistic goal setting for reducing injuries and health hazards:

- To reduce work days lost to accidents from 300 days per year to 150 days per year in the next fiscal year

- To reduce back injuries from 50% to 30% of all lost-time accidents in the next fiscal year
- To complete basic safety training for all employees annually

Preparing an Action Plan

Goal implementation requires the preparation of an action plan. A list of actions necessary to implement the chosen solutions are developed and scheduled and follow-up responsibilities are assigned. Once prepared, schedules should be reevaluated to determine whether the goals remain realistic with target dates that can be met. This process may reveal that data about safety hazards and injuries currently being collected are inadequate to monitor the impact of the safety program. For example, knowing the frequency and severity of injuries in a particular workplace can help set specific topics for safety training to reduce such injuries. Detailed written accident reports are vital for summarizing and presenting data that can be used for planning and reporting to decision makers, insurers and government agencies.

Ultimately, management is responsible for developing and carrying out an effective safety and health program, but supervisors and, most importantly, employees themselves are key players. Reduction of lost-time injuries and illnesses is the goal - a proactive safety attitude at all levels of a water utility is the key to achieving it.

The Spigot

Q & A:

Focus on

Math - Volume of a Pipe or Circular Tank

Formula: Volume is equal to the diameter squared times height (or length) times 0.785

Written as: $Volume (ft^3) = D^2 \times 0.785 \times H$ or

$Volume (ft^3) = D \times D \times 0.785 \times H$

1. Calculate the volume, in cubic feet, of a 30 inch interior diameter standpipe that has 60 inches of water in it?
2. Calculate the volume, in gallons, of a round 45 foot basin that is 35 feet tall?
3. How many millions gallons of water are required to fill 2,000 feet of a 72 inch interior diameter pipe?

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

Many thanks to the Nevada Water & Wastewater Training Coalition for the **Water Treatment Plant Operator's Instructional DVD**.

***This DVD is now available to water operators across the state. To obtain a copy contact:**

Dr. Mark Walker
University of Nevada, Reno
mwalker@cabnr.unr.edu



Cont' Featured Article: Investing 101

get out of it. Remember, you are INVESTING IN YOURSELF.

4) How do I properly prepare?

You'll learn a lot by working in the field, but that's not enough, you'll also need to crack the books. There is a lot of good material out there – ask your fellow operators or your Supervisor. Many water and wastewater systems maintain a library for just this purpose. The Calif. State University, Sacramento Office of Water Programs has excellent training material (a bit wordy and can be a tough read but very reasonably priced) as well as the AWWA (they also write many of the recognized standards used in this industry) and the ABC. Conferences and classes are great places to ask questions and learn. And of course, trade publications are full of info. Organizations like the Nevada Rural Water Association provide training as well as many manufacturers and vendors. Also, many systems will allow you to study on company time – PLUS pay for those books AND pay for the exam AND pay for your time to take the test. This is a win-win situation. You get certified and the system gets their certified operator. To keep your certification current you will need to continue taking a minimum number of classes or training hours – it's a lifetime of learning, but you will get out what you put in.

5) What are my chances of passing the tests?

A recent exit survey of operators who just completed a certification exam indicated they studied an

average of only 12 to 18 hours. Sorry gang, that's not enough! The overall passing rate for wastewater certification exams (June 2009) was 44% and for the water certification exams (March 2009) it was 62%. Overall, depending on the certification exam the success rate range was from approximately 50% to as high as 83% (Kudos to all who passed and double Kudos to those who had outstanding scores). Are you still with me? I did promise you a sure-fire investment. Here's something to consider, there is a critical shortage of qualified certified operators. A great majority of operators will be retiring soon and there are few qualified to fill their positions. Translation: it just may be a wide open, fast, straight shot up to the top.

Are you still interested but have a fear of tests? Although it takes many operators more than once to pass the tests don't get discouraged. Remember, the more experience and knowledge you gain the easier it becomes. Soon it will be second nature and the tests will be a snap.

Thomas A. Edison (you know – the light bulb guy) said this: "Success is 99% failure". And I once heard a saying "Your attitude determines your altitude". I've given you something to think about, given you some tools and provided you with some direction. Now, it's up to you. Invest wisely in yourself and you will reap excellent returns.

Answers to the Spigot questions



1. Volume = 30 in x 30 in x 0.785 x 60 in = 42,390 in³ ; 42,390 in³ ÷ 1,728 in³/ft³ = 24.5 ft³
2. Volume = 45ft x 45ft x 0.785 x 35 ft x 7.48 gallons/ft³ = 416,164 gallons
3. First Convert the 72 inches to feet by dividing by 12, 72 in ÷ 12 = 6 ft
 Then calculate the volume:
 Volume = 6ft x 6ft x 0.785 x 2,000ft x 7.48 gallons/ft³ ÷ 1,000,000; Volume = 0.423 MG

Regulatory Update: Integrated Source Water Protection Program

By Kim Borgzinner, NDEP Staff Engineer

Many Nevadans have the misconception that water supply pollution is not a problem. Unfortunately, this is not true due to population growth, intense use of land, and increased use of chemicals that can threaten water supplies. As a result, it is even more important than ever to protect Nevada's water supplies, through source water protection planning.

Public water systems throughout Nevada have protected source waters by developing and implementing local wellhead protection programs ("plans"). These plans scientifically model areas or zones around drinking water sources (wells and springs) where pollution resulting from human activities could potentially enter and contaminate the drinking water supply. The local plan outlines strategies and management practices the water system and local community may have already implemented, or which are planned, to prevent contamination. Essentially, the plan serves as a tool for the local community to protect its drinking water supply, assess whether it is prepared to respond to a contamination event, and how the event may impact community economic and health issues.

Historically, the planning process has been driven by the

public water systems. The utility managers and operational staff have taken the lead in coordinating all aspects of planning and implementation. While in many cases this has been successful in getting a plan developed, implementing the plan has proven more challenging. Plan implementation requires close coordination with jurisdictional authorities, land use and planning departments, adjacent water systems, and state and federal agencies. The Nevada Division of Environmental Protection (NDEP) recognizes that in many cases, water system managers and operators simply do not have the time and resources to coordinate all aspects of source water protection planning, while still performing required tasks associated with day to day operations.

As a result of a slowdown of planning momentum over the past few years NDEP reviewed the applicability of Nevada's Wellhead Protection Programs and subsequently performed a major review and update to the program. The following revisions are being made to promote local community involvement in the development and implementation of Community Source Water Protection Plans.

State Program Name Change
Nevada's Wellhead Protection

Program name is being changed to "Integrated Source Water Protection Program" (ISWPP). The new name is intended to represent the overall goals of the program, including integration of all aspects of source water protection (both surface and groundwater.) The new name reflects that these aspects will be considered at the State and local levels; particularly in a community's planning process, including: master planning, plan review, new source development, and emergency response.

Technical Assistance

In lieu of managing multiple inter-local small grants, NDEP has contracted directly with a technical consultant who will provide assistance to communities in virtually all aspects of community source water protection planning and implementation. The new approach allows for all public water systems to have equal opportunity to participate in the program without having to compete for limited state funding, which will be particularly helpful to smaller public water systems.

Funding

NDEP will concentrate funding for plan development and implementation into specific counties, ideally three adjacent counties at a time. Counties

will receive technical and planning assistance and some direct cost reimbursement for developing and implementing local plans. This will give NDEP an opportunity to reach every county within a 10 to 12 year planning cycle. It is important for each county to take advantage of the opportunity when it arises, or it could be up to 12 years before the county is offered assistance again. This strategy will allow for more efficient use of program funding and ensure that every community public water system has an opportunity to participate in the program.

Community Approach

The Community Approach encourages counties to take the lead in developing a comprehensive community source water protection planning effort. NDEP understands that each community is unique and will

likely have unique political planning approaches. NDEP will provide some flexibility in assistance for county jurisdictions to develop a countywide regional planning approach. A regional planning approach encourages “top down” management and planning where utility managers and operators would no longer be responsible for carrying out and coordinating all aspects of source water protection planning and implementation. The Community Approach encourages continued protection planning with local jurisdictions throughout the planning process.

Public Education

A community that understands source water protection goals and which participates cooperatively in the planning process is most likely to ensure a safe and sustainable drinking water supply into the

future. NDEP can assist communities in developing a local public education plan to promote community awareness and support of source water protection planning efforts.

NDEP is modifying the program to motivate and support community source water protection activities. NDEP can provide assistance to Nevada’s communities to develop plans that reflect realistic community goals, leaving a community confident in their abilities to ensure adequate source water protection.

If you have any questions or are interested in more information on the new program approach, please don’t hesitate to contact

My-Linh Nguyen at:
775-687-9422 or
Kim Borgzinner at:
775-687-9503.

Public Education - Photos courtesy of NDEP’s Integrated Source Water Protection Program



Reminder: New Lead and Copper Rule goes into effect on December 10, 2009

For more information go to:

<http://www.epa.gov/safewater/lcrrm/index.html>

Water Lines is edited and produced by NDEP Office of Financial Assistance. Questions or suggestions should be addressed to Adele Basham abasham@ndep.nv.gov or 775-687-9488

Wastewater Operators Certified



The following wastewater professionals passed their Wastewater Treatment, Laboratory & Collection exams in September.

WASTEWATER TREATMENT GRADES

Grade 1: Dave Orais, Ryan Pharr, Phuoc Tran
Grade 2: Elise Hoover

NEVADA COLLECTION

Grade 1: Robert Carroll
Grade 2: Joe Perkins

WASTEWATER LABORATORY ANALYST

Grade 2: John Witherspoon

**Next Wastewater Certification Exam is:
March 11, 2010**

**The deadline for applications is :
February 11, 2010**

For more information on the exams and testing sites please visit www.nvwea.org

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 Nan Paulson at 775-687-9447 or npaulson@ndep.nv.gov

Water Operators Certified



The following water professionals passed their Water Treatment and Distribution exams in July and/or September.

WATER TREATMENT GRADES

T-1: Raymond Bush, Shaun Forsberg, Thomas Georgi, Ward M. Jones, Jim Kerr, Brooke Long, Antonio Mendive, Lori Ross, John Whalen, Frederick Willis

T-2: Jeff Cady, Jamie Doschadis, Garrett kooyers, Joe Lopez, Robert Mayers Jr, Doyle Nicholson, James Souba, William Stockman, Aaron Underhill, Ruth Watson

T-3: Frank Felix, Lynn Forsberg, Dale Johnson

T-4: Eric Sautter

D-1: Andrew Dzvonic, Thomas Engel, Mirinda Hutton, Mark McCreery, Russell Osmun, Grant Perkins, Jim Phillips, Charles Safford, Paul Sanchez, Matthew Schultz, Christopher Skvarna, John Stock, Jesse Truell, Marcus Urban, Sean Vallesteros, Allen Waggoner Sr., John Whalen

D-2: Kenneth Angst, Jay Bart, Justin Greenland, Bruce Harland, Brent Johnson, Michael Johnson, Casey Jones, Ryan Luzier, Ronald Nordmeyer, Timothy Ogle, D. Michael Palmer, Tom Parli, Gregory Schmett, James Souba, Michael Thicke, Colleen Thomas

D-3: Brent Eisert, Larry Grant, Robert Mayers Jr., Mitchell McGlynn

D-4: Darren Kitzmiller

Next Drinking Water Operator Certification Exam is in March 2010.

It's not too early to start studying. Do you have your books? Are you reading them?

TRAINING CALENDAR FOR 2009

Dec. 29, 2009 - - Surface Water Treatment Rule:

🔹 Kings Beach CA

Contact: [Stevan Palmer 775-750-1884](tel:775-750-1884).

Feb. 18, 2010 - Review for Exam:

🔹 9:00 AM to 12:00 PM

Info: [Crystel Montecinos 775-240-1396](tel:775-240-1396).

March 19, 2010 - Haz-Mat and Chemical Safety:

🔹 9:00 AM to 12:00 PM

Info: [Crystel Montecinos 775-240-1396](tel:775-240-1396).

April 16, 2009 - Joint Restraints - Trenchless

🔹 Construction: 9:00 AM to 12:00 PM

Info: [Crystel Montecinos 775-240-1396](tel:775-240-1396).

Ongoing Online - Various training topics - RCAC.

🔹 For more information.

Contact: [Stevan Palmer 775-750-1884](tel:775-750-1884).

Ongoing On Site - Various training topics - NvRWA.

🔹 Contact: [Bob Foerster at 775-841-4222](tel:775-841-4222).

March 9-12, 2010 - GSR Reno, NvRWA 20th Annual

🔹 Training & Technical Conference.

Upon Request: Six-Month Operator Training,

🔹 Instructor-Lead CSUSac Courses, Distribution or Treatment. 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](tel:775-841-4222).

**Reminder: Effective January 1, 2010
NEW OSHA 10 / 30 Training Requirements
per AB148**

Info at SCATS <http://www.nv1030>

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 2009 exam dates. **The Bureau of Safe Drinking Water has a New Operator Certification Program Contact: [Duncan Wright 775-687-9527](tel:775-687-9527) or dawright@ndep.nv.gov**

*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 Rural Water Association

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

For more training information for both drinking and wastewater, please visit the new training calendar on the NWEA website: www.nvwea.org * Click on "getting certified" then check out the training calendar.

🔹 This symbol 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

Winter 2009

Nevada Drinking Water and Wastewater Training Coalition

American Water Works Association

California / Nevada Section
www.ca-nv-awwa.org or 909-291-2101

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.

Crystal Montecinos 775-240-1396

Indian Health Services

Dominic Wolf 775-784-5327

Bureau of Safe Drinking Water

<http://ndep.nv.gov/bsdw/index.htm>
Duncan Wright, 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
Crystal Montecinos
Tahnee Praiswater

Jim Renfree
Paul Strasdin
Dan Tarnowski
Teresa Taylor
Leslie Tench
Jim Weeks
David Willard
Tatiana Zehl

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

U.S. Environmental Protection Agency, Region 9

www.epa.gov/region9
Sara Jacobs, 415-972-3564
