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23rd Annual Summer Classic SEASIDE • AUGUST 21–24, 2017

A publication of Oregon Association of Water Utilities Read H2Oregon online at www.oawu.net

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We are also seeking articles, clean jokes, Oregon trivia, letters to the editor and interesting stories. Please send submissions (no more than two pages in length) to:

Oregon Association of Water Utilities

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Send your articles with full color photographs, in digital format if possible, to the address listed above.

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OAWU's mission is to provide service, support and solutions for Oregon water & wastewater utilities to meet the challenges of today & tomorrow.

Water—Our Resource

by Mike Collier, Deputy Director/Sourcewater Specialist

Drinking water is something that is important to all of us. It is something we all rely on as part of our jobs in this industry, plus we couldn't physically survive without it. Many of us have heard the expression that "an ounce of prevention is worth a pound of cure." Well, this is especially true when it comes to the protection of our drinking water supply.

Let's say that we have a well that is in an aquifer that does not have a confining layer above it. If this was the case and we did not put extra effort into protecting our well from contamination, we could easily run into a situation where we would need a new drinking water supply. This could be drilling a new well, new treatment, hooking up to a neighboring system, or using a surface water right (if this is available to our system). This type of project could cost the system anywhere from tens of thousands of dollars to millions of dollars. Very expensive, especially for a small system.

However, if we had used just a portion of the money to educate the property owners and property managers of the properties that neighbor our well prior to a potential contamination. Specifically addressing the proper handling of hazardous material (paints, petroleum products, and other chemicals) and proper management of the septic systems. Then used some money to fence off the area around the wellhead. We could have potentially protected the current drinking water supply and not had to spend extra money for a new water supply or additional treatment.

One option we have here in Oregon that is not regularly tapped into for this is the grant fund that is available, most years, for drinking water protection. The letter of Interest opened February 21st and will close March 31st (if you have missed it for this year remember to look for it next year). This fund supply comes from EPA to Oregon through Oregon Health Authority, Drinking Water Services; it is a grant for funding source water protection activities for drinking water systems and can be for up to \$30,000.

It is important to take advantage of this fund while it is still available. Fencing off around your wellhead, hazardous waste drop-off events, education, and/or proper well abandonment of unused wells are just some of the areas this funding can be used.

If you want to be involved in such an opportunity, check out the Oregon Health Authority, Drinking Water Services website for details.

Also, if you want a drinking water plan developed for your system, so that you may have a better idea where potential contaminants may come from and options on how to deal with them, want someone to go through your Source Water Assessment with you, or just want more information, please call us here at OAWU: 503-837-1212.



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39TH ANNUAL Management & Technical Conference SUNRIVER, OREGON

This year's conference was a great success! The week started with a lot of snow, then rain, and ended up with beautiful sunny weather. Many of the attendees were able to catch up with old friends and make new ones within the industry. OAWU staff enjoyed serving the members of the association and providing assistance to those in need. Sunriver staff again provided genuine, friendly, excellent service, and great food.

The conference sessions were lead off by Jason Green, OAWU Executive Director, and Mark Beam, OAWU Board President. They welcomed attendees and discussed the state of your association. They were followed by Sam Wade, CEO of National Rural Water Association. Sam provided an update on the issues the industry is facing at a national level. This was followed by Mark Landauer who presented an update regarding the legislative issues at the state level.

The OAWU annual business meeting was held after class sessions ended on Tuesday. President Mark Beam presided over the meeting as attending members heard committee updates and participated in board member elections.



The slate of board members re-elected to the board were:

Ed Pugh, Deschutes Valley Water **Craig Sheldon**, City of Sherwood **Matt Johnson**, City of Monmouth **Phil Davis**, Odell Water Company

At Wednesday's regular board meeting officer elections for 2017 occurred. They are: **Ed Pugh** as President, **Mike Edwards** as Vice President, **Matt Johnson** as Secretary, **Micah Olson** as Treasurer, and **Mark Beam** as Past President.

Many attendees were present at the awards banquet, on Thursday evening, and several visiting attendee families. The steak and salmon were great and many good conversations could be heard throughout the Great Hall. A Board Service Recognition was given to **Russ Cooper** for his years of services, leadership, and commitment as a board



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member of OAWU and to **Mark Beam** for his completing his term as president of the board. The 2016 Manager and Operator award recipients are:

The **Manager of the Year** award went to **Frank Day** from the Crooked River Ranch Water Company.

The **Office Manager of the Year** award went to **Jackie Loos** from the City of Amity.

The **Water Operator of the Year** award went to **David Jacob** from Brightwood Waterworks.

The Associate Member of the Year award went to EJ.

Congratulations to all of our award recipients. These awards recognize the dedication and commitment made by those who choose to serve the communities of Oregon every day. Don't forget, if you have an employee whom you would like to nominate for next year's awards, submit the information to the OAWU office for consideration.

The Best Tasting Water award recipients this year were the **City of Stayton for Best Surface Water** and **Warren Water Association for Best Groundwater**. The submissions are tested by 3 judges from the water community of Oregon. They decide the best groundwater and surface water, then these winners go head to head for best overall water in Oregon. The winner of the **Overall Best Water category** was **Warren Water Association**. Their water will be flown to Washington DC and submitted for judging in the Best Water in the Nation contest.













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39TH ANNUAL MANAGEMENT & TECHNICAL CONFERENCE HIGHLIGHTS

At the Exhibitors' Hospitality Night on Wednesday there was good food and drink, many door prizes, raffles, and an auction for a massage at the Sage Springs Spa and Sunriver stay won by **Jim Shaver** of **Pace Engineering**. We also auctioned a bottle of Jack Daniels donated by **Frank J. Martin** and won by **Nonda Zwald** from **Pleasant Valley Water Co.**, and a bottle of Pendleton donated by **Gene Vroman** from the **City of Yoncalla** and won by **Casey Roats** from **Roats Water System**. The money went to support the Jeff Swanson Memorial Scholarship fund. All scholarship raffle proceeds totaled \$4,550.

We did not receive any applicants for this year's Jeff Swanson Memorial Scholarship. The application for the 2018/19 academic year can be found on our website—please apply if you have a child that is currently attending or going to attend college. Gary Shipley from the City of Eagle Point won the 50-inch LG UHD 4k Ultra Smart TV from the OAWU raffle. The winner of the WaterPac Raffle of a .223 Remington 700VLS rifle with a Leopold Scope was Darryl Walker from the City of Cannon Beach. The winner of .45 1911 Sig Sauer Ultra Compact for the Jeff Swanson Memorial Fund Raffle was Bobby Secker from Multi Fittings.

The winners of the ping pong and cribbage tournaments were announced. First place in ping pong was **Kris Smith** from **Avion Water. Dave Bobbett** from **Whitney Equipment Inc.** came in second. **Bruce Sunseth** from the **City of Redmond** came in third. **Joe Holmgren** from the **City of Bend** came in first for cribbage, receiving the championship board. **Gene Dahl** from **Pollardwater** came in second and **Dennis Lewis** from the **City of Philomath** came in third. The "Find the Logo" contest



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winner was **Clyde Wagner** from **Pleasant Valley Water Co.** and the Best Camo Contest was won by **James McMahon** from the **City of Vernonia**.

We wish to thank our Associate Members for their donations, time and support of this conference and of course to the members who continue to believe in and support the Oregon Association of Water Utilities. Specifically, we would like to thank our Gold Sponsor of this year's conference: **EJ**; our Silver Sponsors: **HD Fowler Company, Inc.** and **M&H/Kennedy Valve** and our Bronze Sponsors: **BergerABAM** and **CoBank**.

Be sure to sign up for the Annual Conference next year, the first full week of March 2018, as there will be a slate of new classes to attend, people in our industry to visit with, food to eat, and fun to enjoy. See you there! Best wishes to you, our friends. ◆







Fire Hydrant Maintenance

by Scott Berry, Operations Manager

I think the first issue that needs to be addressed when beginning a discussion on a fire hydrant maintenance and testing program is in the area of responsibility. Who owns the fire hydrants and whose responsibility is it to maintain and flow test them?

There are many opinions on this topic that stem from several different questions. I've helped out rural water systems who made the decision to remove all hydrants that were installed on less-than 6" main lines. That sounds perfectly reasonable right? A hydrant on a 4" main is not generally capable of sustaining the flow and pressure required to provide fire flow, so they are of little use, or worse, the hydrant's existence could imply its ability to provide fire flow and give a false sense of security for local residents, fire departments, and insurance companies.

The problem with removing those hydrants was that they were installed when the mainline was originally put in and there was compensation for the easement in which that mainline occupies. They are technically owned and maintained by the water utility, but cannot be removed without breaching the contract with that landowner. Make sure you know the history of how that hydrant came to be located where it is before deciding to remove it.

In my opinion, the water utility should be responsible for the maintenance of all fire hydrants attached to their main lines unless it's located on the customer side of a water meter. The water utilities are the ones that should be trained and equipped to provide for the continued health of that part of their infrastructure.

Like any other mechanical device, fire hydrants require regular maintenance. Without that maintenance, they may not work properly and chances are you won't find out they don't work until you need them. Start with American Water Works Association's (AWWA's) recommendations for the safe operation of a fire hydrant.

Operation: Under normal conditions, the water in your distribution system moves at a fairly constant rate and pressure. Opening a hydrant too quickly could create negative pressure and set up a dangerous backflow situation. Closing a hydrant too quickly can cause water hammer, which is very destructive to lines and equipment. Water hammer is sort of like running headlong into a brick wall. You will immediately wish you had closed it more gradually.

Dry-barrel hydrants should always be opened fully because the drain mechanism operates with the main valve. A partially opened hydrant can cause water to be forced out through the drains and cause erosion around the base of the hydrant. However, tightening the caps too soon can trap water in the barrel and set up the possibility of freezing. As a matter of fact, because hydrants need a supply of air to drain properly, a good way to check the drain is to place your hand over an open nozzle after the hydrant is turned off. As the water drains it creates a vacuum that can be felt at the nozzle. So remember: never tighten the caps until the hydrant finishes draining. And never, ever operate a fire hydrant with any wrench other than the one designed for that particular hydrant.

As a 15 year veteran of a volunteer fire department, I can tell you that it's crucial that water utilities work with local fire departments and provide training. When

I first joined the fire department we would have competitions to see which team could pull up in a fire truck, lay out the supply hose, hook up to the hydrant and flow water in the fastest time. There was no consideration given for opening or closing a hydrant slowly.

It wasn't until I became the manager of the rural water utility supplying that area that we began training firefighters on this important aspect of both distribution operation and fire suppression.

Inspection: AWWA recommends all hydrants be inspected regularly, at least once a year. In freezing weather, dry-barrel hydrants may need to be inspected in spring and fall. For the most part, much of hydrant inspection is visual and common sense. For example:

- 1. Make sure the hydrant, including all valves and nozzles, is accessible with no obstructions.
- 2. Check with a listening device for main valve leaks.
- 3. Use a chalked cord or plumb bob to check for water standing in the barrel.
- 4. Loosen the cap and open the hydrant a few turns to allow air to vent, and then tighten the cap and open the hydrant fully. All caps must be tight at this point.

- 5. Make sure the hydrant is turned on fully and check for any leaks around the operating stem, nozzles, any seals or packing, and at the flanges. Replace the O-rings if necessary.
- 6. Partially close the hydrant until the drains open and flush the drains for a few seconds under pressure.
- 7. Exercise the valve and leave it open.
- 8. It is best to perform hydrant maintenance in the course of a flushing program.
- 9. And last, but certainly not least, if during the inspection you discover a hydrant that is not working or has major problems, tag it, notify the fire department immediately, and make preparations to fix the problem.

Note: Each time you remove a hydrant's parts, pay special attention to all seals and threads, and note any wear. Most manufacturers recommend that these parts be lubricated before putting the hydrant back together to ensure its smooth operation.

In the next issue of *H2Oregon*, I'll discuss specific hydrant maintenance issues, the specialized tools you will need before you begin work on a hydrant, and the record keeping required to stay on top of this issue. This is a service that OAWU can perform in our for-fee services program. For more information, feel free to contact us.

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Let's Get Organized

by Jeff Crowther, Wastewater Technician

Let's discuss organization within our daily work lives.

I have always tried to be somewhat organized and I would like to think that I am successful at it. I must admit that over my 30 plus years of work experience, I cannot say that I have always been successful. With this article, I hope to give some helpful ideas on how to get organized to simplify and prepare for upcoming tasks or job duties.

First, write things down. It seems pretty simple, but it actually works. It is as simple as making a list of tasks to be completed. Start with a simple to-do list and then expand it. Make the list achievable in the short term. Include schedules and deadlines, but don't get hung up on them. It always feels good when we can mark items off our list as they are completed.

Organize the shop and office. It is good to have replacement parts and equipment to complete emergency repairs, but when they cannot be found when needed because they are buried in a pile in the corner of the shop, they are useless. We should have a home for our routine back stock. If it is organized it can be quickly visually inventoried.

If our office desk has piles of files on it and looks as though a tornado just went through, it gives the impression that we are not organized. We may know where every invoice is, but if for some reason we are not able to come to work, our supervisor or co-workers are left to sort it out.

What I have found is that over the years I have become a pack rat. I tend to hold onto items because I know that as soon as I get rid of them I will have a use for them. Don't get caught in my dilemma. Regularly go through the shop and or office and remove items that are no longer in need. Our paperwork has mandatory retention times, but if the law states that we keep it for three years and we still have it in a file after ten years, we really need to evaluate its usefulness. If equipment is surplus, go through the proper channels to either send it to state surplus or get the council's approval to put it up for sale. Sometimes councils and boards would rather donate surplus equipment to smaller agencies rather than sell it at a reduced price.

If our office and shop are clearly organized and we have everything in its place, it will be much easier to do our job. Speaking from experience, once organized and in routine, it is easier to *stay* organized. Another benefit is when our supervisor, mayor, or board members come through, they automatically feel that the operation is well-run and may not feel the need to micromanage our operation.

Being well-organized and decluttered will make our lives at work each day much easier to manage. •

TRAINING & EVENTS SCHEDULE

Date	Class Title	Location	CEU Information	ESAC#, Fe	e/Free
April 4-5	Water Treatment, Water Distribution Certification Review	Salem	1.4 Water/0.7 Wastewater	2787	Fee
April 6	Level 3,4 Water Treatment, Distribution & Filter Endorsement	Salem	0.6 Water	3370	Fee
May 16	Confined Space & Job Site Safety	Independence	0.6 Water/Wastewater	2886	Fee
May 17	2 nd Annual Mini EXPO Conference	Independence	0.4 Water/Wastewater	3397	FREE
June 6-7	Water Treatment Water Distribution Certification Review	Salem	1.4 Water/0.7 Wastewater	2787	Fee
June 7	Control Valves	Grants Pass	0.7 Water	2863	FREE
June 8	Level 3,4 Water Treatment, Distribution & Filter Endorsement	Salem	0.6 Water	3370	Fee
June 12	Math for Operators	Bend	0.4 Water/Wastewater	2885	Fee
June 12	Sourcewater Protection Planning	Bend	0.3 Water	3152	Fee
June 13	Water & Wastewater Field Operations & Safety	Independence	0.6 Water/Wastewater	2944	Fee
June 20	Math for Operators	Salem	0.4 Water/Wastewater	2885	Fee
June 20	Sourcewater Protection Planning	Salem	0.3 Water	3152	Fee
July 12	Developing Your Operations & Maintenance Manual	Salem	0.4 Water/Wastewater	3395	Fee
July 13	Pumps and Pumping	Tillamook	0.4 Water/Wastewater	2862	Fee
July 13	Math for Operators	Tillamook	0.3 Water/Wastewater	3153	Fee
August 1-2	Water Treatment Water Distribution Certification Review	Bend	1.4 Water/0.7 Wastewater	2787	Fee
August 21	Effective Utility Management	Seaside	0.6 Water/Wastewater	TBA	FREE
August 21-24	23rd Annual Summer Classic Conference	Seaside	2.0 Water/Wastewater	TBA	Fee
August 29-30	Wastewater Treatment/Collections Certification Review	Salem	1.4 Wastewater/0.6 Water	2882	Fee

Levels 1–4 Water Operator Exams

Trained and certified operators are necessary to ensure that the systems are managed in a manner that fully protects public health and the environment. The OARs for certification stipulate that the qualifying experience for applicants for certification as a water treatment plant operator must attain at least half the required operating experience at a public water purification plant that uses complex filtration technology and is not more than one classification lower than the level of certification they are seeking. In other words, if you have only worked for a Class 2 treatment plant, we allow you to apply for a Level 3 certification but not a Level 4 certification. If you move on to a Class 3 plant, then you must have '3 the qualifying experience (at the Level 3 plant) before allowing to apply for a Level 4 certification. Reciprocity from state-to-state ensures that the operator have the operating experience for which they are certified.

For additional information, please visit http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/OperatorCertification/Levels1-4/Pages/exams.aspx

More Resources

Drinking Water Data Online Center for Health Protection Drinking Water Services https://yourwater.oregon.gov http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=4 http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=58

Training class dates, class topic and/or locations may be subject to change as needed.

For more information on any class by OAWU, please contact the office at 503-837-1212, office@oawu.net or visit www.oawu.net.

UPCOMING CONFERENCES · MARK YOUR CALENDAR





cember 4–7



Oregon Association of Water Utilities





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Elementary Safety

by Tim Tice, Projects Manager

The foundation to an effective worker safety program can have many elements, the building blocks assure a high level of safety is achieved. It is important to place those building blocks in a way to reach maximum effectiveness. Quite some time ago, I shared some tidbits of information that pertain to the psychology of safety; hearing the inner voice that is warning us. If we ignore this warning, then is the accident truly an accident?

Building blocks vary both in number and position, but there are four that should become the cornerstones in your safety program. One of the key elements to a good safety program is **hazard recognition**. Workers should be aware of the surroundings, equipment, processes and most importantly, the people involved. A well-practiced process can become the highest level of safety for several reasons, but essentially it is "routine."

Most of us never consider **workplace design**; we simply show up to work and the building is there, we perform our tasks and go home. We may consider temperature, seating comfort and tools to make the day go easier, but not much beyond that. But a physically well designed location, building and set of tools can certainly improve job performance. A simple example could be using four control sticks on an old tractor versus a joy stick on a newer unit.

Performance accountability is another stone in the foundation that measures how the employee is doing in comparison to the rules in place. This measurement must match up with standards set by the regulatory agencies and company policies. Ensuring employees are held to standards that are within their control.

Regulatory Compliance is used to stay well-informed of any changes to the rules. Is your facility required to follow OSHA, EPA, DOT, or possibly OHA and DEQ?

If these four components above become your cornerstones, what other pieces can assist in designing your safety program? Examples are employee involvement, motivation, creating good behavior (attitude), training, retraining, which can include both classroom and hands-on. Assessments, audits, evaluations begin to build that multi-layer of protection.

www.alnmag.com/article/2007/09/14-essential-elements-successful-health-and-safety-program

To keep your safety program meeting the highest level of achievement it must be a written program. Often reviewed upon initial hiring, this document is seldom revised or is often done so only to meet a requirement. Poorly written safety programs provide too broad a range of objectives and goals and can leave an employee guessing or making assumptions.

By setting clear benchmarks, an employee understands the task, tools required, limitations of procedure/process, how to perform in a safe manner, but also

who to turn to in case of doubt. Employees should be encouraged to raise the safety bar higher. Always be certain benchmarks are obtainable, meaningful and relevant.

Consider how one set of regulations may affect or overlap into an additional area. For example, how in-depth is your lock-out, tag-out procedures as they relate to confined space entry. Does your personal protection program simply review safety gear for the feet, what about clothing for inclement weather? Does it also consider sun protection for the eyes, are we forgetting some type of dust protection? Are leather boots adequate for most tasks, or high calf water-proof boots more appropriate during a specific task?

A well-written program answers these questions, provides guidelines to the employees, but most of all it covers the task in depth by making the employee see the concerns on paper. These points are purposefully placed in the "written program" as standard operating procedures (SOPs).



This past January a news story came across the wire reporting three men collapsed as they entered a manhole, and I am not going to Monday morning quarterback the event, but the outcome will be evident on either of two points.

The private contractor had all paperwork accounted for a good training program (outline and documented) and the employees took it upon themselves to change procedures, or the contractor had insufficient paperwork relying on the workers to use their best judgment. Whatever the answer may be, three men did not go home to their families.

As someone who oversees a safety program, ensure the foundation of the safety program is based on welldocumented written programs that provide purposeful updates and training to the employees.

The best that life has to offer! \blacklozenge



OAWU Does More









Leak Detection

Can't find where your water loss is happening? Call OAWU to help.

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Training at Your Facility

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The Safe and Simple Har

The Portland Water Bureau's Agreement with C

submitted by Heath Cokeley, Programs Manager/Circuit Rider

The mere mention of the word asbestos is likely to send shockwaves of fear and concern from employees and the general public. Many of these fears are from misconceptions that anything asbestos is both dangerous and hazardous. Realistically, asbestos is a natural occurring fibrous mineral and is prevalent in our environment.

Asbestos had many uses with its great tensile strength, flexibility, heat, electrical and chemical resistance and good insulating properties. It was commonly used in thermal insulation, reinforcement materials, fireproofing, acoustic and decorative plaster, textiles, friction materials (clutches and brakes), asphalt and vinyl felts, papers, adhesives, flooring and roofing materials, filters, sealants, caulk and gaskets. Grandma could have potted her plants with it mixed with Vermiculite!

The history of asbestos-cement (AC) pipe can be traced back as far as the early1900s when a company in Italy reinforced concrete with asbestos thereby enabling it to withstand higher pressures. This early use gained acceptance and was introduced in North America in 1929 by the Johns Manville Corporation who began manufacturing AC pipe. The pipe was commonly used by water utilities during from the 1940's - 1970's when health concerns arose associated with the release of fibers through the handling of the pipe during manufacturing, installation and maintenance. It is estimated that almost 20% of the piping in water distribution systems in the US consists of AC pipe.

Asbestos is a generic name for a variety of silicate materials that include crocidolite and chrysotile which were most commonly combined with cement to make water pipe to give it greater strength. Both asbestos (20% by weight, however, some samplings from water utilities around the county showed as high as 35%) and the silica (up to 40%) combine to make AC pipe very hazardous to handle without specific training and the necessary personal protective equipment (PPE).

Many water utilities took advantage of the economical cost and durability of AC pipe creating potential future exposures to countless water workers. In 1989, recognizing the hazards, the Pacific Northwest Section (PNWS) of the American Water Works Association (AWWA) published the first edition of the "Recommended Standard Asbestos-Cement Pipe Work Practices and Training Requirements." This pamphlet described the proper handling, tools and equipment for typical use of AC pipe. The pamphlet became the standard practice for water utilities and training organizations around the region for years to come. However, as OSHA regulations addressing asbestos and respiratory protection were revised, the pamphlet soon became obsolete and the PNWS removed it from publication.

Many of us who have spent years in the water industry, remember cutting AC pipe with power saws with little PPE other than a pair of safety glasses and hearing protection. Today, fears of exposure have painted a picture in our minds of needing high levels of PPE, an encapsulated worksite with highly regulated work procedures. As I traveled around the region doing safety training for AWWA, AC pipe safety was a common question. Work practices varied from doing nothing (like we did in the "old days") to almost a full Level A protection – neither of which is appropriate.

In working with both the PNWS and the Northwest Oregon Sub-Section

ndling of Asbestos Cement Pipe

Pregon OSHA By Eric Fullan, Safety Manager, Portland Water Bureau

Safety Committees, there was a request to develop training for the safe handling of AC pipe. In the early 90's, Clint Van Arsdall (Clint Van Arsdall and Associates) working with an Oregon OSHA grant, developed an outreach training program based on the PNWS pamphlet. During his research, he obtained asbestos monitoring sampling results from throughout the US and found that by using basic wet methods and specific procedures, asbestos exposure to workers was adequately controlled, and respiratory protection may not be required!

Fundamental safety hierarchy states that once a hazard is identified, if it can be eliminated, the problem is solved. If the hazard cannot be eliminated, we then look to control the hazard either through engineering controls (i.e. ventilation) or administrative controls (programs, procedures, policy). If the hazard is not reduced to an acceptable condition, the lowest level in the hierarchy is PPE. That brings us back to the old PNWS pamphlet. It provided both administrative and work practice controls to reduce the level of PPE required. So if it had merit then, why not now?

Having worked with OR-OSHA on many occasions, the Portland Water Bureau (PWB) asked Dave McLaughlin, Industrial Hygienist and Technical Specialist with the Standards and Technical Section of OR-OSHA for assistance. PWBs goal was to establish wet methods work procedures for the safe handling of AC pipe, validate these work practices to eliminate asbestos exposure, establish an appropriate training curriculum and do it all in a manner that any water utility in Oregon could follow and be exempted from the cumbersome OSHA asbestos standard. On behalf of the NW Oregon Sub-Section, the PWB ventured into a project with OR-OSHA to develop safe work practices for the handling AC pipe and establish the appropriate PPE. The expected outcome of the project was to develop an understanding of the asbestos exposure to water utility employees and the first order of business was to revalidate the samplings.

Following the strict asbestos standard, PWB crews, the contracted industrial hygienist and OR-OSHA consultants repaired and tapped an AC water main. Sampling results supported the historical monitoring indicating that by using wet methods, employees are not exposed to harmful airborne levels of asbestos.

The next step was to develop guidelines for the safe work practices and establish the appropriate level of PPE. An intended outcome of this effort was to develop an agreement as opposed to following the burdensome asbestos standard. The theory being was that more employers and utilities would be able to comply with a simpler solution. In the fall of 2011, the PWB and OR-OSHA developed a streamlined set of Standard Operating Procedures for working with AC pipe. This procedure was designed to minimize the dire effects on employee health and simplify the process for working with asbestos laden cement pipe.

The agreement was to establish a program that identifies:

- The Competent Person
- Training responsibilities
- Work procedures to be used
- Safety equipment
- Respiratory protection upon employees request
- All other necessary PPE

- Procedures to establish a regulated area or "controlled zone" when asbestos pipe is being removed
- Procedures for disposal and decontamination

The designated Competent Person is responsible for the program and ensures compliance with all components of the program. The Competent Person is defined as: one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure and who has the authority to take prompt corrective measures to eliminate them as specified in OR-OSHA's General Safety and Health Provisions.

All employees working with AC pipe will be trained at least in accordance with Class III asbestos type work and allows for the Competent Person to design a training program that meets OSHA's Asbestos Standard 1926.1101(k)(9)(viii). However, certain parts of 1926.1101(k) (9)(viii) are not applicable to working with non-friable water pipe. Below is the modified training that will be provided to all employees performing this work:

(A) Methods of recognizing asbestos;

(B) The health effects associated with asbestos exposure;

(C) The relationship between smoking and asbestos in producing lung cancer;

(D) The nature of operations that could result in exposure to asbestos, the importance of necessary protective controls to minimize exposure including, as applicable, engineering controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures, waste disposal procedures,

The Safe and Simple Handling of Asbestos Cement Pipe (continued)

and any necessary instruction in the use of these controls and procedures;

(E) The purpose, proper use, fitting instructions, and limitations of respirators as required by OAR 437-002-1910.134; (testing results indicate that Respiratory Protection is not necessary but is available for voluntary use);

(F) The appropriate work practices for performing the asbestos job;

(G) Medical surveillance program requirements;

(H) The content of OAR 437-003-1926.1101, including appendices;

(I) The names, addresses and phone numbers of public health organizations which provide information, materials and/or conduct programs concerning smoking cessation. The employer may distribute the list of such organizations contained in Appendix J to this section to comply with this requirement; and (J) The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.

All training will include hands-on training for the work practices used. Since working with AC pipe in the PWB is rare and cannot be anticipated, work conditions may be simulated.

AC pipe work requires a pre-job planning checklist and a post-job debriefing to ensure procedures and practices were followed and any deviation discussed and resolved.

AC pipe jobs are periodically visited by the supervisor and/or Safety Manager to ensure that work practices are being followed and mechanisms are in place for employees to report problems to the Competent Person, their supervisor, and/or the Safety Office.

It is important to note that the work practices and conditions described in the procedure must exist and be maintained at all times. If there are any deviations in conditions, practices or procedures outside the scope of the policy, a Competent Person must have a higher level of skills and training as outlined in OSHA's 1926.1101 Asbestos Standards and the EPA's 40 CFR 763.92.

While developing the training curriculum, OR-OSHA Administrator Michael Wood was quoted as saying "Looking for the best opportunities to advance safety and health, OR-OSHA was pleased to work with organizations like the Portland Water Bureau and the American Water Works in the pursuit of a common goal to protect workers from hazards in the workplace, in this case asbestos, and to do that when possible in a way that minimizes regulatory burden, allows employers and workers to comply with the standards and to do so in a way that is simple, straightforward and minimizes regulatory obligations, but does all of it without compromising worker protection. That really is the best of all possible worlds and that is why we,



at OR-OSHA, are pleased to be a part of this project."

As work practices were being developed, additional asbestos sampling was performed to ensure permissible exposure levels were met and maintained throughout the work activity. Test results concluded there was no employee exposure. Supporting the request to eliminate the need of ongoing exposure monitoring and respiratory protection as required in the full asbestos standard.

The scope for the Standard Operating Guidelines specifically state that repair work involving disturbing and/or removal and repair of AC pipe must follow the outlined safety procedures. This procedure applies to water utilities crews and contractors. No methods can be used that intentionally cause the AC pipe to shatter, crumble, be pulverized, or release asbestos fibers. This means that we are not permitted to sand, power saw, grind, chip, or use power tools on AC pipe. By following these methods, DEQ asbestos abatement contractor and worker certification are not required.

A Letter of Agreement was drafted as a waiver and acceptance to OR-OSHA from the utility stating the utility agrees to comply with and use only the work practices outlined in the Standard Operating Guidelines. The letter is required to be on the letterhead of the utility with signature lines for both the utility and OR-OSHA as being on record the utility is relying upon the agreement. This agreement should then be honored if an OSHA compliance inspection is initiated.

As with any OSHA compliance inspection, employees need to be trained in how to respond to a compliance inspection and how to demonstrate their skills, knowledge and abilities in how they communicate that to the inspector. Following OR-OSHA inspections procedure, the compliance officer should verify the agreement and work practices with the Technical Section of OR-OSHA who would research the records to ensure the utility is indeed on record as having signed the Letter of Agreement.

An 8 hour training curriculum was also developed to enhance the program to ensure both workers and utilities understand the work practices and procedures as well as the agreement. Continuing Education Units have been awarded to the program by the Drinking Water Program for the State of Oregon. Currently, the PNWS and the Northwest Oregon Sub-Section Safety Committee members are sponsoring and providing the training around the state.

For additional information you should contact Mike Jacobs, Safety Coordinator, Tualatin Valley water District and PNWS Safety Committee chair at 503-642-1511, or Eric Fullan at eric. fullan@portlandoregon.gov •



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Oregon Association of Water Utilities

QUIZ CORNER

- LEL (lower explosive limit) measures the level of combustible gas within a confined space. Will a deficient level of oxygen skew the LEL reading?
 A. True
 B. False
- 2. What is a good rule of thumb for air monitoring sensors?
 - A. Keep the sensors and unit in an airtight sealed container.
 - B. Remove the sensors from the unit and place in a sealed container.
 - C. Remove batteries from unit when not in use.
 - D. Replace oxygen sensors every 3 years.
- 3. Can a self-retracting-lifeline (SRL) be used also for fall protection? A. Yes B. No
- 4. Three primary components of a personal fall arrest system are:
 - A. Body wear, Self-retracting-lifeline, lanyards
 - B. Anchorage device, body wear, connection device
 - C. Anchorage device, fixed ladder, fall limiter
 - D. D-bolt anchor, full body harness, lanyard

- 5. How many gallons of water are in Crater Lake?A. 1 millionC. 5 billion
 - D. 5 trillion
- 6. How many milligrams per liter (mg/l) are in 1 part per million (ppm)? A. 1 C. 100
 - B. 10 D. 1000
- 7. Which of these dams have been removed?
 - A. Marmot Dam, Sandy River, Oregon
 - B. Grand Coulee Dam, Columbia River, Washington
 - C. Glines Canyon Dam, Elwha River, Washington
 - D. A and B.

B. 5 million

- E. A and C.
- 8. How tall is the Bonneville Dam?
 - A. 20 m
 - B. 40 m
 - C. 60 m
 - D. 120 m

- 9. A weir should be used to measure water in which of the following locations?
 - A. Above ground storage tanks
 - B. Household service lines
 - C. Open channels
 - D. Water mains
- 10. What is the most important reason for maintaining a continuous positive pressure throughout the distribution system?
 - A. Prevent damage to water meters
 - B. Keep pipe joints sealed
 - C. Prevent contamination from backflow
 - D. Maintain chlorine residual
- 11. Which of the following pH ranges would deposit a thin film of calcium carbonate on the inside surface of a pipe?

A.	2.0–3.0	C.	6.0–7.0
B.	4.0–5.0	D.	8.0–9.0

VNRMEKS: 1-V' 5-V' 3-V' 4-D' 2-D' 9-V' 2-E' 8-C' 6-C' 10-C' 11-D

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Class cost is \$160, or if you are unable to attend a class you may purchase a thumb drive with e-files for \$160. To sign up for the class, or to have a thumb drive mailed to you, contact your Association for further information. •

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Quills in Life

by Hans Schroeder, Circuit Rider

The other night, I noticed a large bump behind the front foot of my wife's horse, Dandy. Upon closer inspection, I thought it looked like cancer. I pushed on it, however, it proved to be festered and I had my doubts. My wife and I discussed it over and over again, and we went back and forth between cancer and something better.

As we had already made an appointment to have Dandy's teeth floated, I figured I'd wait and ask the vet when we got there. As Dr. Fred gave the old mare a good once-over, I said, "She's got something down there on the back of that foot, I'd like you to take a look at." I expressed my concern, then told him it looked infected and leaking when pressure was applied to it.

"Oh," he said, matter-of-factly. "That's a foreign body." The good doctor crouched down wrangled around a bit, and came up with the culprit—a porcupine quill.

I visited with my horse-shoeer and told him it was a porcupine quill. He marveled at the revelation. All the porcupine/horse stories he'd run across included a horse with quills all over his legs and face, but just one quill was a little odd.

Amazingly enough, one quill, and only one quill, had stuck into her then it festered until we thought maybe she had something really wrong. All we had to do was pull it out, cut the bump off, and load her back up.

It's the same thing with our lives. If we just get rid of the junk in our lives that tend to fester until we've got a pretty disgusting little infection building up, things will go a lot better. We've all got those little quills, too. Maybe it's anger. Perhaps it's that guilty pleasure that we know isn't right, but we won't admit it's wrong. Whatever it is, it festers. And eventually, it could cause an infection. And, if you'll remember Gus's little tale in Lonesome Dove, we know that doesn't turn out well.

Ephesians 4:31-32 tells us, "Get rid of all bitterness, rage and anger, outcry and slander, along with every form of malice. Be kind and tender-hearted to one another, forgiving each other just as in Christ God forgave you…"

Sometimes, it might not be simple or easy to get rid of those things in our lives. However, the healing that will come from it will blow our minds. Let's get rid of those porcupine quills before they fester. ●

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Pipe Repair Shortcuts to Avoid

I remember as a kid taking shortcuts, cutting through wherever, just to save a few minutes on my walk home from school, or certainly while doing homework. Some of us learn from experience that shortcuts cost us in the long run. Others, however, continue taking them, thinking or trying to justify they will help.

This mentality is common in the area of pipe repairs as municipalities try to maintain their water infrastructure with increasingly tight budgets, and repair crews want to complete projects as quickly as possible. While there is great temptation to take shortcuts, these so called "savings" cost time, money and worker safety.

Pipe repair shortcuts never last, tremendously boosting costs. When repairs have to be redone, communities are left to deal with additional repair costs, water-off time, and restricted traffic due to road closures and detours. Not only that, when a crew enters a repair site a second time, the ground is less stable which can increase the chances of the ditch caving in. Add it all up, and shortcuts are a bad idea.

Let's look at my candidates for pipe repair shortcuts to avoid and see if we can come up with a better way to do things. These are in no particular order as all of them should be avoided.

1. Not measuring the outside diameter of the pipe to be repaired

This is a pretty big shortcut and yet I see this all the time. Different folks do all kinds of different things to determine pipe OD without first measuring the pipe with an OD tape. For whatever reason, folks often insist they know the OD of pipes in their system and even feel challenged when asked if they have checked.

I hear time and time again "the clamp won't stop leaking." My response is to ask if they checked the OD of the pipe they are trying to repair. When the answer is no and they get around to measuring it, many times the OD is different than previously



thought. No wonder the clamp won't stop leaking. Choosing the right sized repair product is important to making good repairs, and you can only know for sure the size of the pipe with an OD tape.



The costs of guessing ODs are wasted time in installing clamps or couplings, water-off time to say nothing about employees being frustrated with the process. Krausz products all have wide OD ranges meaning that the products will work on a wider variety of ODs, saving on cost and time.

2. Using a clamp to join pipe instead of a coupling

There are some folks who will use products just to get the repair completed but perhaps not making the best repair. Making the best repair should be the goal of every crew member and that always involves using the right product. For this shortcut, I'm referring to using a repair clamp, usually with a waffle-style gasket, to join or couple pipe. These products are designed to repair holes or ring breaks. They are not designed to couple pipe since they offer no deflection capacity, which will always result in a break due to ground movement. If you are connecting pipe, use a coupling, not a clamp.



By Doug Riseden, Technical Support Manager, Krausz USA, the creators of HYMAX



The HYMAX VERSA offers a coupling that also can also be used for repairs since it can be opened and closed around the pipe. Whatever repair you encounter in the ditch, whether it's a crack or pipes that need to be coupled, the HYMAX VERSA will provide continuous dynamic deflection. Equally, the HYMAX, the original two bolt coupling, is fully transitional and offers four degrees of angular deflection on each end.

Failure to use the correct product results in wasted time, money and increased water off-time. Choose wisely!

3. Restraining pipe using a bag of sakrete, 4x4 posts, old motor grader blade or u-channel posts

Thrust blocks are probably the most common way to restrain pipe. They are not simply blocks of cement or bags of sakrete. Engineers go to great lengths to design the right thrust block based upon the needs of the project. Bags of sakrete with holes punched in them and a bucket of water poured on top is not

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a thrust block, neither is a 4x4 post, old motor grader blade or a piece of u-channel post. Restraint couplings, such as the HYMAX GRIP, are a way to restrain pipe and avoid using thrust blocks altogether. This gives repair crews a quick and safe way to restrain pipe without the time required to make thrust blocks.

4. Using backhoe lights to light a work area

Repair crews for whatever reason choose not to bring extra equipment to a repair site, even extra lighting. Crews will rely on the backhoe or excavator lights to illuminate a repair site. These lights will not supply enough illumination for the work site and compromise safety. With a little more effort, extra lighting can become part of the project and create a much safer operation for all crew members. Don't forget lighting for your flaggers. They are the ones who control the safety of your work zone! If drivers can't see the flagger, his or her ability to slow down, divert or stop traffic is hindered.

5. Using cheap parts

As the old sayings go, "You get what you pay for" and "You buy junk, you get junk" (I like that one). As a former public



workers director, I believe you have two responsibilities when it comes to purchasing repair products.

The first is to your system. That involves purchasing and using quality products that will serve the infrastructure and your community for years to come. You cannot afford to purchase products that will fail early, requiring another repair. No utility can afford the cost of making a second repair at the same location. Additionally, returning to the same dig site erodes confidence in your crews and you!

The second responsibility is to buy repair products that your crew likes to use. This is where a supervisor's or director's knowledge comes into play. A leader needs to supply great, quality products that offer ease of use and reliability. Getting educated on products is fundamental to ensuring you get the best products. Many pipe repair product manufacturers, including Krausz USA, can deliver "lunch and learns" at your location. These will give you and your crews the opportunity to review products to assess their quality and ease of use.

6. Accepting the lowest repair bids

When considering bids for new infrastructure projects, avoid the lowest bid and look for instead the lowest responsible bid. You always need to do your homework with bids submitted for projects. Question the firm with the lowest bid, and don't be afraid to ask others who have used this firm some tough questions.

- Has this bidder been involved in this type of project before?
- Has the bidder been involved in a project of this size?
- Did the firm use quality products or the cheapest available products?
- What were the results of previous projects?
- Did they come in on-time, on-budget?
- How many change orders were there?

Unfortunately, there are firms that will put forward low bids to get the contract and then use change orders to complete the project. These can dramatically increase the price to the point where the contractor would not have received the bid in the first place. Once you get started, it's hard and expensive to change contractors so be sure to do your homework in advance. When plans are presented for review prior to the project, include other employees. They can offer a fresh set of eyes and may come up with details that you may have missed.

While all of these shortcuts attempt to save time, money or both, they are simply not worth it. Shortcuts ultimately waste time and money while compromising worker safety. Shortcuts might have been great for getting home quickly as a kid but when it comes to pipe repair, they are a bad idea. At the end of the day, you get what you pay for.

> Doug Riseden is the Technical Support Manager for Krausz USA, the creators of HYMAX.





*Product lengths of 15" and higher have more than 2 bolts

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City/State:	
County:	ZIP:
System Email:	
Phone:	Fax:
Operator:	
Contact Person:	
Number of Hook-up	S:
Were you referred? E	By whom
Type of System:	tewater 📮 Both
Membership Categ Regular Member Associate Member	ory Amount of Dues See schedule below \$400.00 \$77.00
	1 \$75.00
Regular Member D 1 to 100 101 to 500 501 to 1,000 1,000 and up Maximum dues is	Dues Schedule \$75 + 32 cents per hookup \$85 + 32 cents per hookup \$90 + 32 cents per hookup \$100 + 32 cents per hookup \$950.00
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A Regular Member shall be any water or wastewater utility, public or private, engaged in the production, distribution or reclamation of water. A Regular Member shall have one vote.

Annual Dues - See Dues Schedule

Associate Member

An Associate Member shall be any organization individual or corporation, supplying services or equipment to water and wastewater utilities. An Associate Member shall have one vote. For Associate Member Benefits, please contact OAWU.

Annual Dues \$400.00 per year

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An Individual Member shall be an individual involved in the water/wastewater industry or a user of such utilities. The member-ship is informational in nature and shall be non-voting.

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- Legislative representation at state and federal level
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- Access to technical assistance library
- Access to technical and testing equipment for loan
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- Positive contacts with other organizations
- Camaraderie with water and wastewater professionals
- Operator Of Record services
- Job referrals, announcements and searches
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- Plan review
- System performance evaluation and options
- Additional programs and services
- Disaster response assistance and planning

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MB17



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