Making Connections

The Official Publication of the Louisiana Ground Water Association
Volume 5 Issue 2 Winter 2020

Inside this issue:

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From the Executive Director's Desk

WHAT A YEAR! And then we have to plan a convention. Do we keep it early in the year as in the past or delay it hoping whoever is the decision maker by then will let us have an in-person convention? That is the reason this issue of **Making Connections** is later than usual.

Do not show up in January as usual! The convention will not be held in January, but on Tuesday, April 13th. This will be the only Louisiana state convention for 2021 and the only chance to get credit hours from LGWA this year. Wow, it feels nice to type 2021. Maybe 2021 will be a calmer and more productive year for us all. After 2020, I am ready for a change.

If everything goes as it now stands, we will have the "night before convention" events on the evening of April 12th, starting off with the cocktail hour at 6 p.m., dinner at 7 p.m., and bingo at 8 p.m. If you are in Marksville, then I urge you to attend. We actually do have a lot of fun and some nice prizes are given away during bingo. There is a $15 per person charge to cover the dinner.

We will have access to the buffet in some form for lunch on Tuesday, and should be able to have coffee, juices, and sweet rolls in the morning. We will respect the COVID guidelines in effect at the time of the convention. We can spread out the exhibitor booths, use both overhead presentation screens, and wear protective gear as mandated or that you desire. If we are careful, there should be no problem. WE WILL GET THROUGH THIS!!!

The Louisiana drillers license will be due at the normal time and through the normal channels that is every year. The Convention Registration Form is included in this issue of **Making Connections** as is the Scholarship Application. I urge you to make all necessary arrangements to attend the convention on April 13 to get your credit hours and have that out of the way.

Hopefully, your business has been good through this unsettling time and that your health is good. If the Louisiana Ground Water Association can be of help to you, please call.

Joel

Joel Walton
LGWA Executive Director

The 2021 LGWA Convention and Trade Show has Been Rescheduled!

The Louisiana Ground Water Association's 2021 Annual Convention and Trade Show, originally scheduled to take place January 14, 2021, has been tentatively rescheduled to April 13, 2021.

Make plans to attend today, as **this will be the only opportunity to earn credit hours** with LGWA.

Registration forms are included in this newsletter on page 9.

For more information, contact Joel Walton at 225-744-4554, or e-mail jwalton022@aol.com

Good Shopkeeping

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What does your shop look like? Does the question bring to mind a dusty, grimy, dark, unorganized mess? You need to know, a cluttered shop is an accident waiting to happen. Using good housekeeping practices will not only save your company time and money, but you'll also help protect workers from slips, trips, and falls which could result in serious injuries. You'll find it a lot easier to be safe and productive when your surroundings are tidy.

The following recommendations can help you whip your shop into shape:

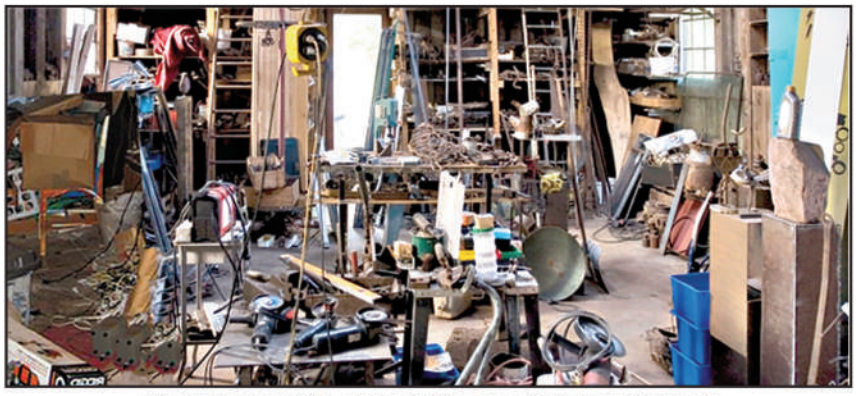
1. Make sure storage and disposal areas are clean and well organized. If these areas are cramped for space, look for alternative areas in convenient, out-of-the-way locations.

2. Be on the lookout for better storage solutions for equipment and parts. Keep appropriate containers, bins, racks, and shelves for storing materials.

3. All chemicals should be kept in a safe area and labeled accordingly.

4. Personal work areas should be neat and free of tripping hazards.

5. Equipment surfaces should be clean and clear of everything except tools essential for operating equipment.



Would you want the owner of this shop to do work for you?

6. If you have new equipment or tools on order, clear and designate space for it before it arrives.

7. All air hoses, electrical cords, and debris should be kept off floors, platforms, and walkways.

A clean facility will enhance your image, increase customer satisfaction, and set your business apart from the competition.

8. Aisles and work spaces should not be used for storage.

9. Work areas should have adequate lighting. Replace or repair any worn-out bulbs, tubes, or fixtures.

10. First aid kits and emergency facilities should not be blocked by equipment or materials.

Once your shop is shipshape, you'll want it to stay that way. Supervisors should follow up with workers to make sure they're properly trained and have the tools they need for success. Let employees know you are observing work activity. Acknowledge when someone takes time to clean up after a busy day, and hold people accountable when they don't cleanup.

Your shop's appearance should reflect the quality of service you provide. It's never too late to start communicating success in everyday details.

Safety Spotlight: Rig Electrical Safety

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The topic of this article is rig electrical safety. The drive (or motor) is one of the primary systems of a drill rig. Most drill rig electrical problems will normally be solved and fixed by a professional in a garage environment, but there are situations which come up in the field when the drill crew may discover and have to fix a problem to continue operations. In this article, we'll examine electrical safety guidelines and the best tool to use to discover rig electrical problems.

The following are some guidelines involving electrical safety:

- ☛ Above all, never assume the equipment or system is de-energized. Remember to always **Test Before You Touch**.
- ☛ Understand the construction and operation of the electrical equipment and the hazards involved.
- ☛ Identify all possible energy sources which could pose a hazard.
- ☛ Know electrical safety requirements and follow them.
- ☛ Have a clear working area and remove any covers to electrical components.
- ☛ Select the appropriate personal protective equipment (PPE). Remember, PPE must be worn until the electrical system is in a safe condition.
- ☛ Before working on or around electrical systems or equipment, identify the power and disconnect.
- ☛ Make sure testing equipment is working, both before and after using it.
- ☛ If the testing becomes more hazardous than anticipated, stop and contact a professional.

Multimeters can be incredibly expensive and also incredibly cheap, depending on if it's a digital or analog display.

When a motor fails, it is often difficult to see why it failed just by looking at it. First, check all connections for any damaged wiring or connections visually, and then with a multimeter. A multimeter is commonly referred to as a voltmeter, and is a very handy tool to determine voltage and resistance.

Electrical hazards on the job can be avoided by following approved guidelines. Additionally, consult your rig manufacturer on the rig's power and motor system. Be sure to provide in-house training on this subject to all drill operators and crews to maintain personnel and equipment safety.

Attention Students - Scholarships Available!

The Louisiana Ground Water Association (LGWA) will be awarding up to two scholarships for LGWA family members and employees.

Applicants must be a high school senior intending to enroll in, or currently enrolled in, a two- or four-year college program.

Completed applications must be accompanied by an official copy of the student's high school or college transcript, class rank, and SAT / ACT scores. All items required by the application must be completed for an application to be considered.

Award recipients will be required to maintain a 2.0 grade point average. The $1250 will be awarded for the fall semester once the association receives a copy of the recipient's fall semester grades. An additional $1250 will be sent for spring semester once a copy of the spring grades is submitted.

Look for the Scholarship Application on Page 6.

For more information, contact Joel Walton at 225-744-4554, or e-mail jwalton022@aol.com.

The deadline to apply is March 31.

Plugging and Sealing an Unused Well

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An open well no longer in use is a potential threat to groundwater quality in an aquifer and a physical risk to people and animals. Property owners are responsible for making sure unused wells are properly plugged and sealed.

Because of the information needed and equipment required to plug deep drilled wells, licensed water well contractors are normally hired for the job.

For those new to the trade or needing a refresher, the following information outlines best practices for properly plugging and sealing unused drilled wells.

The first step is to find out how the well was originally constructed. Key factors include:

- Total well depth.
- Depth of casing.
- Casing diameter and changes in diameter with depth.
- Presence of a well screen or open hole in bedrock.
- Static water level.
- Soil type or types the well passes through.
- Type of aquifer.
- Type of original sealing material, if any.

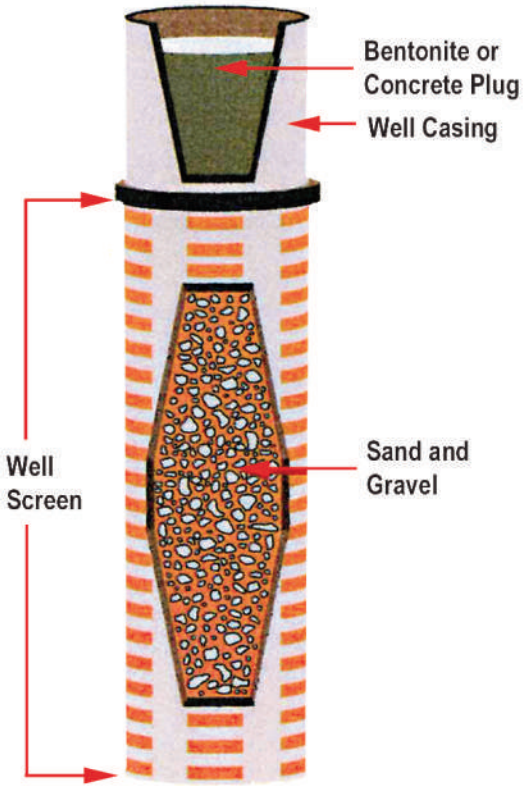
If no water well record exists, contractors have to rely on measurements or their personal knowledge of local wells and groundwater conditions.

Every well is different, so plugging and sealing procedures may be modified for each well.

As a contractor, you should do the following:

- Remove the pumping equipment.
- Remove the entire length of casing from the hole, or, if the casing is old or corroded, leave it in place, puncturing if possible - ideally, the plugging material will seep through the casing to seal between the casing and the side of the hole (the annular space).
- Disinfect the well.

Filling a Well Screen



- Fill the well screen or bedrock fractures with sand or gravel so grout will not penetrate the aquifer and plug fractures or pores.
- Pump a carefully prepared plugging mixture, such as a bentonite slurry and cement grout, from the bottom to the top of the well through a pipe.
- If the casing is left in the ground, cut the pipe off below ground level (at least ten feet if possible), and fill the bottom of the excavation and space around the casing with the plugging mixture.
- Ensure the casing is deep enough so future activities do not disturb the plugging mixture over the casing.
- Backfill the remaining hole with clean soil which is less permeable than the native soil (that is, containing more silt and clay - remember the "last out, first in" principle when excavating and backfilling the hole).
- Mound the fill to allow for settlement.
- Prepare a record showing the exact location of the plugged well and material used.
- Keep the record on file and give a copy to any required authorities.

Above all, make sure to follow all federal, state, and local regulations for plugging and sealing old wells.

Did You Know?

Adapted from Information by the Louisiana Department of Natural Resources

In Louisiana, the contractor who drills or constructs a well is responsible for registering it by submitting a completed Water Well Registration Form (GW-1 or GW-1S) to the Office of Conservation within 30 calendar days after completion.

Registration requirements apply to all water wells, regardless of yield or use, including but not limited to, public supply, domestic, irrigation/agriculture, power generation, rig supply, observation, dewatering, monitoring, and heat pump supply wells, as well as test holes, abandoned pilot holes, and heat pump holes.

Also, a contractor who agrees to plug an abandoned well or hole for a well owner is fully responsible for plugging the well or hole in accordance with the rules, regulations, and standards of LAC 56 and for completing / submitting a Water Well Plugging and Abandonment Form (GW-2) to the deparment within 30 calendar days after completion of the plugging operation.

WELL REHABILITATION ~ A LUCRATIVE SIDELINE BUSINESS

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Times are tough for a lot of folks, including well drilling professionals and homeowners. Rather than drilling a new well to replace a poorly performing well, a homeowner will often try to get by with the old well by using less water or tolerating some turbidity.

Many water well drilling contractors have found rehabilitating existing wells has proven to be a good business decision for both themselves and for well owners.

Older wells lose pumping capacity for many reasons, including increased sediment load, encrustation, or bacteria fouling of the screen or the open hole section of the well. Some wells that originally had an acceptable amount of drawdown now have much more drawdown, possibly at the pump intake level, which means less capacity and a potential for air to enter the pump, causing biofouling or plugging of the screen or pump impellers.

In most cases, the aquifer producing characteristics of the well have not changed, but the ability of the well or pump to transmit and pump water has diminished. If the cause of the excess drawdown can be found, perhaps it can be fixed for a small fraction of the cost of a new well.

To determine the cause of decreased pumping rate, the pump's motor amperage should be checked to see if the motor is performing as well as when the pump was installed. Next, the pump should be pulled and the screen and impellers inspected for a buildup of mineral encrustation or algal slimes. This should be followed by a camera inspection of the casing and screen of the open portion of the well. If the screen appears to be plugged, the well may need "brushing" or chemical treatment using chlorine or acids to restore the well to original conditions. (Be careful to follow directions when using chemicals.) Nylon brushes and well chemicals are available from a number of suppliers.

Brushing and chemical treatments should be followed by aggressive well development techniques using the surge block method. Surging creates a back-and-forth action to loosen and free the fines and biomaterial from the well.

Well pumping efficiency can be quantified by measuring the pumping rate and dividing it by the drawdown to obtain the specific capacity of the well. Checking the specific capacity of the well periodically can determine if the well is maintaining its efficiency.

Call for Nominations. The Louisiana Ground Water Association is currently accepting nominations for 2021 LGWA Officers.

Are you interested in working with the association to promote the well-being of our state's water sources? Get involved and make a difference.

Those interested in serving should contact Joel Walton at:

PO Box 202
Prairieville, LA
70769-0202

Phone: 225-744-4554

jwalton022@aol.com

Membership in the Louisiana Ground Water Association (LGWA) is open to water well and geotechnical drilling professionals. The LGWA and its members are active throughout the State of Louisiana.

The Louisiana Ground Water Association:

Helping to preserve a priceless resource - the Louisiana groundwater aquifers and recharge areas.

Louisiana Ground Water Association Scholarship Application

March 31st is the final day scholarship applications will be accepted.

Unless all items required by this application are completed as stipulated, the application may be eliminated for consideration.

The Louisiana Ground Water Association (LGWA) will award up to two scholarships to qualified applicants.

To be considered, you must be an immediate family member of an LGWA member, or an LGWA member's employee. Applicants must be high school seniors intending to start, or be currently enrolled in a two- or four-year college program.

Completed applications must be accompanied by an official copy of the student's high school or college transcript, class rank, and SAT / ACT scores.

Award recipients will be required to maintain a 2.0 grade point average. The scholarship provides the first payment of $1250 once the association receives a copy of the recipient's fall semester grades, and an additional $1250 will be awarded for the spring semester once a copy of the spring semester grades are received, for a total of $2500 for each recipient.

Student's Name _____

LGWA Member Name _____

Student's Relationship to LGWA Member _____

Address _____

City _____ State _____ Zip _____

Phone _____ Date of Birth _____

Planned Graduation Date (high school) _____ (College) _____

College Major (if Declared) _____

LGWA Member Company Name _____

Company Address _____

City _____ State _____ Zip _____

Phone _____

Name of High School / College _____

School Address _____

City _____ State _____ Zip _____

In addition to this application, please include:

- List all high school honors and awards (attach to a separate sheet).
- List all extracurricular activities (attach to a separate sheet).
- Describe, in 150 words or fewer, an event in your life that has made you the person you are today and how it has affected your goals (attach on a separate sheet).

ALL ITEMS ABOVE MUST BE SUBMITTED.

Signature of Applicant _____ Date _____

Signature of Parent _____ Date _____

Please return the application and all additional items, to:
Joel Walton, PO Box 202, Prairieville, LA 70769-0202

Louisiana Ground Water Association Convention & Trade Show

Membership and Convention Registration

April 13, 2021 Paragon Casino Marksville, LA

Company: _____ WW Contractor License Number : _____

Address: _____ City, ST, Zip: _____

Attendee Name: _____ Company e-mail: _____

Personal e-mail: _____ Company Phone : _____

Cell: _____

Payments:

Annual Dues: **$100**	$_____
Member Convention Registration Per Person: **$35**	$_____
Nonmember Convention Registration: **$165**	$_____
Student and Government Employee Dues and Registration: **$65**	$_____
Banquet Fee Per Person: **$15**	$_____
Late Fee: **$15**	$_____
Total Due	$_____

Please return this form with your check made payable to LGWA, PO Box 202, Prairieville, LA 70769-0202
Phone: 225-744-4554

Exhibitor Application

Company: _____ WW Contractor License Number : _____

Address: _____ City, ST, Zip: _____

Attendee Name: _____ Company e-mail: _____

Personal e-mail: _____ Company Phone : _____

Cell: _____

Payments:

Exhibit Fee (includes membership for current year): **$300**	$_____
Banquet Fee Per Person: **$15**	$_____
Total Due	$_____

Name Badges Should Appear as Follows:

_____

_____

_____

_____

Please return this form with your check made payable to LGWA, PO Box 202, Prairieville, LA 70769-0202
Phone: 225-744-4554

If you would like to join LGWA, please fill out and mail membership this application along with your payment to:

PO Box 202
Prairieville, LA
70769-0202

Contact
Joel Walton at:
(225) 744-4554

jwalton022@aol.com

Uncovering an Ancient Well from the Stone Age

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As construction workers in the Pardubice Region of the Czech Republic were working on construction of the D35 motorway, they uncovered something very unusual, and called in the experts to investigate. Archaeologists diligently excavated the area and discovered an ancient wooden water well lining. Since the oak timbers were in such good condition, they were able to use dendrochronology, better known as tree ring dating, in addition to radiocarbon dating, to determine the trees used were from 5256/55 B.C. This makes it the oldest prehistoric wooden structure in the world, and means the well was built during the Neolithic Period, during the last part of the Stone Age.

Michal Rybníček from the Department of Wood Science of the Faculty of Forestry and Wood Technology, at Mendel University in Brno, said they discussed the tree rings of the well with colleagues in Germany. "The results show that the trees used to build the well were cut down between 5256-5255 B.C. It is interesting that the corner posts were made of previously felled trunks, namely from [a] trunk which had been cut in the autumn or winter 5259 B.C. or the winter of early 5258 B.C.," he said.

Experts at the University of Pardubice plan to preserve the well, which is currently being stored in a climate-controlled cellar at the Piarist College in Litomyšl. "It is by far the oldest object that we will be working on at the [facility], and it will not be an easy task," Karol Bayer, vice-dean of the Faculty of Restoration at the university said.

Bayer goes on to explain how this wooden structure survived for 7000 years, "The well was only preserved because it had been underwater for centuries. Now we cannot let it dry out, or the well would be destroyed. That is why we will gradually replace the water with a new preservative that each of us knows and uses. It is saccharose [sucrose or sugar]. So we will increase the concentration of the sugar solution."

Each of the well's planks are submerged in a sugar - water solution. The sucrose in the liquid will stabilize the wood's damaged cellulose and help with preservation. Experts from the Faculty of Restoration, in cooperation with the Department of Chemical Technology of Monument Conservation of University of Chemistry and Technology Prague, are preparing the process.

This is the third Neolithic well found in the Czech Republic in four years. Photo courtesy of University of Pardubice.

Although the age of this well is fascinating, archaeologists were also very interested in the techniques used to construct this particular well. The structure consists of four corner posts with longitudinal grooves at an angle of 90º. The boards were recessed in seven rows above one another. The shape of the individual elements, as well as the tool marks preserved on its surface, indicate a sophisticated level of carpentry not known to exist in this time period.

Experts were stunned to learn humans from the earliest civilizations were able to process the surface of tree trunks with such precision. "The construction of this well is unique," stated archaeologist Jaroslav Peška of the Archaeological Center in Olomouc. "It bears marks of construction techniques used in the Bronze and Iron Ages, and even the Roman Age. We had no idea that the first farmers, who only had tools made of stone, bones, horns, or wood, were able to process the surface of felled trunks with such precision."

Once restoration is complete, the ancient water well will go on display in the Pardubice Museum.

How Fast Does Groundwater Flow?

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Have you ever wondered how fast groundwater flows through an aquifer? There are many factors that influence the direction and speed in which groundwater flows. However, there are two main factors that influence the rate of groundwater flow - permeability of the ground sediments and gradient.

Permeability is the degree of "connectiveness" of the pores in the formation through which the water flows, or the ease at which the water can move laterally in the aquifer.

Gradient is the slope of the water level surface from where the water enters the ground to the discharge area. Groundwater recharge often occurs in a porous sandy area where precipitation can enter the subsurface quickly and travel vertically until it reaches the water table where the water will then tend to travel horizontally and deeper into the aquifer. The greater the gradient (slope of the water) surface, the faster the water will move through the aquifer.

Groundwater flow rates can be very slow. The speed of the groundwater is a function of the permeability of the flow zone. Clays generally have a very low permeability due to the very small pore spaces which is also slowed by the "natural cohesion" of water and its ability to cling together, such as forming water droplets on a smooth surface like glass. Also, many geologic materials may have "cementing" properties which plug the spaces between the grains and may even cement the pores "shut". An example would be dense limestone or cemented sandstones. If the permeability (ability of the formation to transmit water) is very low as with a dense clay, a formation could have a high porosity, but almost zero permeability, thus little movement.

The second factor influencing groundwater flow velocity is the slope or gradient of the water surface. If a groundwater table (or piezometric) surface has a gradient of zero or almost flat, there will not be any force available to push or move the water. Generally, groundwater is faster near the recharge areas where rainfall drives the water downward, which in turn hydraulically pushes the water laterally towards a discharge area. Discharge areas can be seepage into a stream, river, or ocean; or discharge can be from wells pumping in an area where the water levels are drawn down compared to surrounding areas where pumping is low or nonexistent.

Groundwater flow rates can range from near zero feet per day to more commonly a few feet or tens of feet per year. Groundwater flow can be very fast in fractured formations such as limestone, dolomite, or shales. Groundwater rates have been measured using fluorescent dye.

Preventing Well Biofouling – The Key is in the Well Construction

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Biofouling, the growth of unwanted algal slimes and encrustation, can occur in screened and open hole well constructions. There is, however, one factor common in both types of wells that experience reduced well yield due to the growth of bacteria (biofouling) in these wells. The factor is air, and proper well construction can prevent air from impacting the well.

Generally, the deeper the well casing, the less air (oxygen) is present in the groundwater. Ideally, a properly designed well should have plenty of well casing below the water level to ensure the water level does not draw down below the top of the screen or open hole. Why? If the water level drops to below the top of the screen or bottom of the casing, any water falling or cascading into the well will pick up air, which promotes bacterial growth in and near the well. The bacteria will grow and potentially plug pores in the formation, well screen, and impellers of the pump. Once plugging begins, it actually promotes more plugging by causing more drawdown, which causes more plugging.

Plugging of the screen and borehole can be difficult to eliminate because the chemicals used to kill the bacteria must reach out to all areas to contact and kill the bacteria. Any bacteria not killed will quickly multiply and grow to all areas where there is food (dissolved metals, sulfides, etc.) and oxygen present.

Unfortunately, once a well is constructed, it is very difficult to modify the construction to eliminate the cascading of water in the well. The best solution may be to reduce the amount of drawdown in the well by reducing the flow (using a smaller pump or valve at the surface) to keep the water level higher in the well casing.

Also, during the design of the well, the use of a shorter screen length and lower pump setting to maintain submergence of the open hole or screened portions of the well will minimize the chance of biofouling to occur.

Tips for Locating and Sizing a Water Supply Well

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A customer of yours has just purchased a lot to build their "dream home" and requests your help to locate and size a well for their house. Let's assume it is a rolling piece of land with a pond and fenced area for farm animals and a small garden.

Ideally, the well should be located on "high ground" which does not receive runoff or drainage from septic tanks, fuel storage, or agriculture chemical storage areas or waste materials. Wells should be located on the top or on the side of hills receiving direct recharge from precipitation. Low-lying areas can be susceptible to receive "pollution" from fertilizers, fuel storage areas, animal feed lots, or oils and greases which can contaminate percolating groundwater.

Wells located on hills generally need to be drilled to deeper depths to reach the water table, but are worth the extra expense. It is also worthwhile to drill the well a little deeper and larger diameter than needed to ensure water levels do not drop below the pump level during dry periods or if the water demand in the future increases unexpectedly.

If large demands of water will be needed for irrigation or to maintain pond levels, be sure a large enough pressure tank is included to minimize pump cycling times. After the well is completed, make sure the well is properly and thoroughly developed to achieve the highest efficiency and clarity of water possible. The water should also be sampled for iron, bacteria, hardness, and other "compounds of concern".

Consideration of future land use and development should be evaluated when choosing the location of the well to ensure long-term access to the well. There may also be local requirements with minimal "setback" distances from power lines, septic tanks, fueling facilities, etc.

Why are Safety Meetings so Important?

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Safety meetings are a great opportunity for management and the safety department to communicate issues of concern with employees and explain how jobs can be done safer.

Whether the topics discussed are familiar ones, or topics you have limited knowledge about, it is crucial everyone pays attention. When the safety meeting covers a topic you are familiar with, it's easy to tune-out and not listen. Do yourself a favor and listen to the information as if you have never heard it before. You may just learn something new such as the latest protective equipment, or a smarter way to get the job done. The main thing to remember is, information passed on in safety meetings has a purpose - to stop you or your coworker from being injured.

Safety meetings also give employees an opportunity to relay safety/health concerns or improvement ideas to their supervisors. Most accidents result from unsafe acts or unsafe conditions. According to some experts, unsafe acts account for 90% of all accidents. The meetings serve as a preventative measure against unsafe acts by educating employees on how to do the job safely.

Accidents have steep costs for the individual, as well as the company. Some of those costs include:

1. DEATH - The most unwanted result of accidents is death. Where does this leave your loved ones?

2. FINANCIAL COST - Lost pay or a reduction in pay can cause serious financial problems.

3. PAIN & SUFFERING - Days, weeks, months, or years suffering in pain is an obvious detriment no one desires.

4. DISABILITY - A life-changing experience, becoming disabled can wreak havoc on your life. Simple pleasures such as casting a fishing rod, riding a bike, hugging your loved ones, can be lost forever with a disability. Good-bye drilling career.

5. COMPETITIVENESS ON BIDDING JOBS - In addition to payroll and benefits, accident costs may represent a large portion of a company's operating expense. When a company's operating expense increases, they become less competitive when bidding jobs. If the company you work for is not awarded jobs, where does that leave you and your coworkers?

6. YOUR COWORKERS SAFETY - Perhaps you and your coworker have been working together for some time. Chances are, you may spend as much time with coworkers as you do with your own family. You obviously do not want something bad to happen to them. Watch out for their safety too.

Safety meetings are a perfect opportunity to communicate safety ideas or concerns you may have. Participate in your safety meetings! If you don't participate, your ideas will not be heard. Who knows? The idea you have may very well save a coworker's life or even your own.

Membership in the Louisiana Ground Water Association (LGWA) is open to water well and geotechnical drilling professionals. LGWA and its members are active throughout the State of Louisiana.

Get Association Help™
Division of WorldWide Drilling Resource, Inc.
PO Box 660
Bonifay, FL 32425-0660

MAKE PLANS TO ATTEND THE LOUISIANA GROUND WATER ASSOCIATION 2021 ANNUAL CONVENTION AND TRADE SHOW!

April 13th
Paragon Casino
Marksville, LA

For room availability and rates, call 800-642-7777

Come early and enjoy the **Night Before the Convention** activities, including bingo, cocktail hour, and dinner on April 12th.

This will be the only chance to get credit hours from LGWA in 2021!

LOUISIANA GROUND WATER ASSOCIATION, INC.
LGWA
for BETTER WATER

Look for convention registration form on page 7!