Produced Water in Oil & Gas Production

By STEVEN BOND, P.G., Bond Geological Services

The term “produced water” refers to the water that is a by-product of oil and gas exploration and production. There are two types of produced water in oil and gas activities: naturally occurring water from conventional reservoirs, and flowback water from unconventional reservoirs created by hydraulic fracturing (fracing).

In the conventional reservoir, the source of the oil and gas is derived from organic material buried with the rock and converted to hydrocarbon from the heat and pressure of the burial. Since the rock and organic material were deposited in water, the hydrocarbons remain associated with groundwater. In the past, shales were considered to be the source rock for hydrocarbons in the conventional reservoirs. Some of the organic material deposited in muds were squeezed out during burial and compaction with the fluids moving into more permeable rocks. Today, the remaining hydrocarbons in shales have become a source of oil and gas as a result of fracturing technologies.

Groundwater is usually associated with oil and gas reservoirs found in traps where the oil and gas have migrated through porous and permeable rock. These reservoirs are found in sandstone and carbonate (limestone and dolomite) rock. These are the same rock types that are also the locations for the accumulation of groundwater in shallow aquifers. In the oil and gas

See Produced Water, page 9

For the past 21 years, the Texas Ground Water Association scholarship has been helping students achieve their college goals by providing financial assistance. This year is a landmark for the scholarship program. The TGWA Scholarship Foundation officially became a 501(c)(3) nonprofit organization in 2019. The Foundation awarded its first round of scholarships under the purview of the new board and organizational structure. The Foundation is pleased to announce that 28 students were awarded scholarships for the 2019-2020 school year. Out of those 28 students, 15 are new applicants. Based on the board’s ranking system for new applicants, Catherine Arnold, John Jones, and Avery Johnson received the highest scores for their applications.

Scholarship funds could not exist without the generous
With the 2020 TGWA Annual Convention moving to a new venue, the TGWA staff arranged for the July board meetings to be held at the Embassy Suites Hotel and Conference Center in Frisco. Thank you to all the TGWA staff for arranging this preview of the facility. I must say that the facilities are very nice and the location was a good “change of pace” for everyone.

Particularly rewarding is that every current board member on the GWS Board was present for our meeting. The GWS Board always has very good attendance for our meetings, but to have every member present is rare. I would like to take this opportunity to say that we are fortunate to have GWS Board members that continue to participate to such a high degree. The change in the meeting venue and the associated social activities gave the members of all the TGWA boards more time to mix and mingle than normal board meeting weekends.

One of the main tasks assigned to the GWS Division is the continuing education program for the TGWA Annual Convention. As TGWA members are likely aware, CE credit classes require TDLR approval. The approval process does take some effort, money and time. I can speak for all the GWS Board and TGWA staff to thank you.

From the top of the rig
Perspectives of Division Presidents

Always Changing
Greetings everyone! Hope all is well with each of you and your families. I can’t believe how much difference a couple of months makes. When I wrote my last article, I was talking about all the rain we’d had in the Houston area and how wet it was. Well now it is dry and hot, and we could really use a little rain. I guess it’s never perfect. Texas weather is really like a box of chocolates… you never know what you’re going to get. By the time I write my next article, some of you will probably have a freeze or two. We had our last quarterly meeting in Frisco where the 2020 convention will be held. On Friday night, a group of about 80 of us went next door to the Frisco Roughriders baseball game. It was an amazing night. I got to meet spouses and children of board members that I had never met before. To add to the awesome night, mother nature cooperated as the weather was absolutely perfect. It was a great family event. Hopefully we can do more events like that. Thank you again Lisa Henley for your hard work putting that together and anyone who helped. And our very own M&S Division President Bob Hill threw out the first pitch. Thanks Bob, for representing us. Moving to the convention, Adeline has been talking with me about new suggestions for CE classes for

Be Better Than The Day Before
We find ourselves in the dog days of summer. The rain finally gave way to blue skies, hot weather and the opportunity to get to the many jobs that have been waiting. The challenges this year, like other years, are real but with challenges come opportunities. Opportunities to learn, grow, discover new ideas, and allow us to be better than we were the day before. Our organization is no different. The plan for the 2020 convention is in place and final details are being put together. The convention will be held in Frisco this year, and the TGWA board and staff are working to make this event one of the best. Our collective businesses, organizations that we are a part of, and our personal lives pull at our available time and resources. As this can feel daunting and overwhelming at times, it is important for us all to remember the importance of the work that we do and the industry that we serve. I recently met with a man who reminded me of this fact. Our industry is filled with wonderful and caring folks and sometimes it just takes a conversation with someone to remind us that what we do is vital to life. I listened to his stories of what he has accomplished in his life and his level of passion and caring was clearly visible. It was not fame and fortune that

Change of Pace
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From Julie Pyburn

Ruthie’s Dresses

Nine years have blown off the calendar since the war with cancer began to rage again in my precious mother’s body, and she has gracefully survived a plethora of procedures, a cauldron of chemo, and a realm of radiation as she continues to fight the good fight. My mom has also been a regular, twice a week patron at the local hair salon for years, too, and yesterday her stylist once again shaved what little hair this round of chemo had not already robbed. Funny how my sweet mom was comforting the band of teary-eyed bystanders, all of whom are cancer-free, as we watched a little girl (who didn’t know my mom) come up to her and say, “I want to be like you when I grow up.” My mind was suddenly filled with a multitude of memories all echoing that same statement I’ve made a million times to my mother since I wore the same size shoes as that precious little girl. This is one of those memories from when I was in second grade...

If the “dress makes the woman,” then second grade Ruthie would be out of luck. She was the youngest of six children and was never seen in a dress actually her size. None of our classmates noticed her tattered attire after several months together in Miss Klecker’s class. Ruthie was renowned for something much more interesting than her wardrobe, or lack thereof. On her left pinky finger, covered daily with a Band-Aid, was a tiny sixth digit, fingernail and all! At recess, Ruthie would charge five cents for a quick peek at what we lovingly called the “freaky finger.”

I was one of the blessed few that Ruthie allowed free access to view the added appendage solely because I was the second fastest second-grader at Alvin Primary. Ruthie was the fastest; a runner bound for the Olympics, as she would breathlessly declare at the end of each victorious recess race. Miss Klecker would often tell Ruthie not everyone who wants to be in the Olympics actually gets to be in the Olympics. Perhaps our teacher had been blinded by the disheveled sheath dress Ruthie wore several days of every week. Ruthie certainly did not dress like an Olympian hopeful, but she could definitely run like one.

New dresses were foreign to Ruthie and her five sisters, but I had been blessed to wear many new dresses by the ripe old age of seven. Ruthie’s compliments on my clothing were sweet, genuine, and second-grade thought provoking. I began to hatch a plan about which I told no one. The Thursday after Easter, I carefully stuffed seven of my own dresses, including my Resurrection Day dress, into my book satchel. My dad drove me to school and never noticed the bulging bundle. Before school started, all students gathered in the cafeteria for a milk break. It was during this calcium fortifying time that I told Ruthie of the secret stash of duds. In a rare burst of elation, Ruthie pulled each outfit out and danced around with delight. She went to the bathroom and put on her favorite of the seven dresses – the Easter outfit – a bright yellow dress, swallowed in lace. Without hesitating, she announced...
Congratulations to all of our scholarship recipients!

The three students below received the highest rankings among new applicants in 2019.

**Catherine Arnold**
Name of university: Texas A&M University
Class standing: Freshman
Current major: Chemical Engineering
Hobbies: I enjoy playing the piano and watching movies & videos. On long breaks, I love traveling with family.

How has receiving the TGWA scholarship positively affected you?
The TGWA scholarship has allowed me to be able to confidently focus on my studies without the heavy burden of future debt. With finances mounting, it is a relief to be able to take some weight off of the shoulders of me and my parents. I look forward to being able to pay it forward and contribute to students in need of financial help.

Where do you see yourself in five years?
In five years, I hope to be involved in a company where my passions can be applied to benefit my community. This may include becoming involved in any aspect of the water industry such as reclamation, purification, or the development of new technology. I aim to make the most out of the roles I take on in order to find value in my work, and I am excited to see where my endeavors take me!

**John Jones**
Name of university: Texas A&M University
Class standing: Freshman
Current major: General Engineering
Hobbies: I enjoy ballroom dancing, playing piano, and woodturning, besides learning about the water industry.

How has receiving the TGWA scholarship positively affected you?
The TGWA scholarship, by supporting me financially through this year at Texas A&M has provided me with more security about my financial future. It has also helped me feel even more motivated in my endeavors to pursue a degree in engineering and employment in the water industry.

Where do you see yourself in five years?
In five years, I hope to work as a development engineer on either water reuse systems or water testing technology. I hope to have already had three summers of engineering work experience from internships, and an increased knowledge of engineering in the water industry.

**Avery Johnson**
Name of university: University of Texas at Austin
Class standing: Freshman
Current major: Neuroscience
Hobbies: I love music and play guitar in a rock band. I enjoy the outdoors and rock climbing!

How has receiving the TGWA scholarship positively affected you?
It has made me appreciate the organization even more and helps me to further my education.

Where do you see yourself in five years?
I see myself as a pediatric specialist working with kids with mental heath issues or disabilities.
contributions of TGWA members, which come mostly through the gun raffle and live auction that take place each year during the Association’s Annual Convention. We hope to see you at the auction in January! Our gun raffle will include 25 guns in 2020, and tickets are already available. If you would like to purchase tickets or get a booklet to sell, please contact Lisa Henley at lhenley@twca.org.

In this issue of the Fountainhead, TGWA is recognizing the top three ranking students for 2019 and returning recipients from 2018. Visit the TGWA scholarship web page to view photos of all recipients.

New Recipients 2019-2020

Abby Evans (Blair)
Austin Community College

Clay Brunson
South Plains College

Lena Deharde
Baylor University

Derrick Doggett
University of Oklahoma

Logan Doggett
University of Oklahoma

Kira Hobbs
Tarleton State University

Kane Key
Trinity Valley Community College

Matthew Milliner
Texas Tech University

Taylor Mixon
West Texas A&M University

Zachary Pike
East Texas Baptist University

Samantha Scott
West Texas A&M University

Caden Wyatt
Mesa Community College

Returning Recipients - First Received a Scholarship in 2017-2018

Olivia Allen
Name of university: Oklahoma City University
Class standing: Sophomore
Current major: BA Theatre and Performance and BA Education
Hobbies: I have a deep love for theatre and hope to one day be a teacher. I love being outside in the sun!

How has the TGWA scholarship positively affected you?
Receiving the TGWA scholarship has allowed me to pursue my academic interests and goals, including paying for textbooks and helping with tuition costs.

What advice would you give to future scholarship applicants?
Go after what you want! Don’t let anyone around you, including yourself, stop you from doing your best and striving for the things you want to accomplish. It sounds cliche, but just do it!

Where do you see yourself in five years?
I plan to teach theatre at the high school level after college.

Andrea Bettle
Name of university: University of Texas at El Paso
Class standing: Sophomore
Current major: Engineering Leadership
Hobbies: Scrapbooking and painting on canvas are hobbies. I have an interest in helping the homeless.

How has the TGWA scholarship positively affected you?
As a recipient of the TGWA scholarship, I was able to pay for my college books and some of my tuition. It was a big stress reliever knowing that I had the opportunity to utilize such funds.

What advice would you give to future scholarship applicants?
The advice that I would give to future scholarship applicants is to take an essay course so that their college essays are strong, as many scholarships require an essay.

Where do you see yourself in five years?
After college, I hope that I will be employed within my major which is engineering. My goal is to work either in transportation, city water department or with water wells. I see myself being a part of a team where I will help create blue prints or lead a project management team.

There are currently 28 students on a TGWA scholarship. This is a record number.
Abigale Hill
Name of university: Texas Tech University
Class standing: Sophomore
Current major: Elementary Education
Hobbies: I love to hang out with my friends and drink coffee. Most of all I love to teach and help others.

How has the TGWA scholarship positively affected you?
Receiving the TGWA scholarship helped in making my dreams of attending Texas Tech come true. Every little bit of money received helps contribute to my tuition which will help me in the long run. I am so grateful for receiving this scholarship.

What advice would you give to future scholarship applicants?
Nothing is too small nor too big to dream of. Keep your goals in mind and try to reach those every day. Life can get crazy, but if you have those set goals it helps with all the craziness. To add to that, always be humble and kind.

Where do you see yourself in five years?
After college, I hope to be a fourth grade elementary teacher. With that, I would like to teach for a while and then hopefully work my way up to being a principal. I love kids and love teaching/helping others and I can’t wait to have both of those in my career.

Catherine Hoelscher
Name of university: Baylor University
Class standing: Sophomore
Current major: Music Composition and Flute Performance (double)
Hobbies: I’m a music major at Baylor University, and I love dancing with Baylor’s Country Dance Club.

How has the TGWA scholarship positively affected you?
It has given me more financial stability when it comes to paying for college.

What advice would you give to future scholarship applicants?
It helps to understand the importance of TGWA, and to be honest when discussing your goals and interests.

Where do you see yourself in five years?
I plan on going to graduate school to obtain either a master or a doctorate degree, and teaching Music Theory and Composition at the university level.

Amber McKinney
Name of college: Sam Houston State University
Class standing: Sophomore
Current major: Nursing
Hobbies: I enjoy spending time with friends and family. Along with reading and planning everything!

How has the TGWA scholarship positively affected you?
The TGWA scholarship has positively affected me in a multitude of ways. This scholarship has not only helped me with my financial needs but also has helped me to understand more about my dad’s passion in the business for the last 26 years. I am overly thankful for the generous scholarship that is helping me be able to financially obtain my BSN and work towards my life dream of becoming a nurse.

What advice would you give to future scholarship applicants?
My advice for future scholarship applicants is to work hard and stay dedicated to your grades. Also, I firmly believe you should never give up on your dreams. Hard work and dedication is what makes dreams come true.

Where do you see yourself in five years?
After college, I plan to become a nurse with a focus in trauma, either traveling or stationary. I plan to use my education and my heart to help those in need daily.
motivated and moved him but leaving those that he meets a little better than they were previously. Collectively, we all influence those around us. With the convention upon us, we ask that you all take a moment to support and assist the TGWA in making this convention one to remember.

Sincerely,

[Signature]

Pyburn, continued from page 3

that this would indeed be the dress she would wear when she won a medal in the Olympics someday. Everyone clapped; everyone except Miss Klecker. After roll call, Miss Klecker asked if my mother gave me permission to bring the fancy dresses for Ruthie. Having never been in trouble at school, I wanted to lie for self-preservation, but then told the truth instead. And, as if to teach everyone in second grade the perils of dress giving, Miss Klecker proceeded to admonish me in front of my classmates! The only child more hurt by her reprimand was Ruthie, who was ordered to remove the Easter ensemble and put on the clothing her mother actually intended her to wear. Miss Klecker reported she had already phoned my mom regarding my infraction, and she was coming to retrieve the “contraband clothing.” The waiting was the worst part.

All my friends watched the door and the clock, in fear and pity of the impending doom in store for me when my mom arrived. Three short knocks signaled the dreaded moment and an eerie silence thundered in the small classroom as our teacher’s heels clicked toward the door. All my classmates unconsciously held their breath as Miss Klecker turned the knob to reveal the monster mother of the dress culprit. What appeared brought both confusion and questions to our minds.

Standing on the other side of room 2B was my mom, arms full of brand-new dresses of every color! Miss Klecker coughed and commented she thought my mom was picking up the dresses, not bringing more. My mother replied kindly that Welborn’s, Alvin’s only department store at that time, was having a sale and she couldn’t resist making a few purchases. She walked right up to Ruthie and placed the apparel happily on her desk. Ruthie’s eyes danced as she heard my mom say, “Happy Thursday!” My mind was racing faster than Ruthie or I could run as my mother walked to my desk and whispered, “My, what a sweet friend you are.” As quickly as my angel mom had appeared - she vanished, leaving one astonished teacher and eighteen wide-eyed second graders in her wake. Ruthie put back on the yellow Easter dress after lunch and won the recess race with yellow lace flying in the wind. She made a crown of flowers for the second-place winner and decided to show her extra finger to everyone free of charge. As she straightened the flower crown on my head, she whispered in my ear, “Yep, this is definitely the dress I’m wearing at the Olympics. Tell your mama she’s invited, too.”

Easy to see why I want to be like my mom, Patsy Zumwalt. My cup runs over…

Many well-wishes,

[Signature]

Lowe, continued from page 2

the convention. So there will be a nice variety of classes offered. Again please make every effort to attend. It seems far away, but January will be here before we know it. Our association will only thrive by everyone participating. The more involvement we have, the stronger our association will be. I’m a strong believer that you can never have too much knowledge. As I sign off, I hope each of you are having a very productive year. Stay safe, and God bless each of you.

Sincerely,

[Signature]

Hill, continued from page 2

encourage you to offer suggestions on presentations that might make a good CE class. Please feel free to pass along your suggestions to the TGWA staff or a GWS Board member. We are always looking for new subjects for potential CE classes, so TGWA membership suggestions are appreciated.

Sincerely,

[Signature]

Tarver, continued from page 2

SAVE THE DATE

TGWA 2020 Annual Convention
January 21-24, 2020
Embassy Suites Frisco Hotel & Convention Center
Frisco, Texas
Registration coming soon!

Sincerely,

[Signature]
CE Class Recap 2019

By ADELINE FOX, TGWA

This year marked another continuing education (CE) class season success. TGWA hosted 17 classes across the state from Tyler to Ozona, and from Conroe to Plainview. Approximately 908 total water well drillers, apprentices, and pump installers attended these on-site classes. This number does not include attendees during the TGWA Annual Convention.

TGWA board and staff would like to thank all CE class partners and sponsors who contributed to classes in 2019. These CE classes would not be possible without support from these partners. Stay tuned for 2020 class dates and make sure you attend the TGWA Annual Convention & Trade Show in Frisco, Texas on January 21-24, 2020!

Table 1

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<th>Date</th>
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<td>Crockett County GCD</td>
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Total Attendees: 908
Groundwater Week 2019 — Joining forces with the Irrigation Association in 2019!

by DAVID EVENER, CAE, NGWA Director of Marketing & Technology

Groundwater Week is returning to Las Vegas, Nevada, in 2019, December 3-5. As a bonus, Groundwater Week will be colocated with the Irrigation Association’s annual conference. Combined, the two shows expect more than 10,000 attendees and 600 exhibiting companies.

In the combined “can’t-be-missed” exhibit hall, open over the course of two days, it doesn’t matter if you are actively looking for new equipment or services, want to meet with a manufacturer or supplier in person, or just love to look at the big rigs… there’s something for everyone.

Whether you need to earn continuing education for licensing or certification, want to learn new skills, or are just looking for a refresher workshop, Groundwater Week is the place to be — the diverse educational programming offered is taught by leading industry experts.

While education and business are the main focuses of Groundwater Week, there are other offerings you’ll be sure to want to attend. For starters, after congratulating the best in the industry at the Keynote Presentation and Awards of Excellence Ceremony, you will hear from Jim “The Rookie” Morris, whose meteoric rise from 35-year-old high school teacher to major league pitcher in just three months became the feel-good story of 1999 and made cinematic history with the release of the 2002 Disney movie The Rookie starring Dennis Quaid.

Then there’s the chance to become part of the solution for clean and sustainable groundwater by participating in a new Groundwater Foundation event taking place during Groundwater Week. On Monday, December 2, we encourage you to attend a special event celebrating the mission of the Foundation — featuring a mini-groundwater festival, reception with hors d’oeuvres and open bar, and a fun fundraising event. All this and more is included for a $50.00 suggested donation to the Foundation. Don’t miss out on a minute of the show and the opportunity to meet thousands of industry professionals from around the globe all in one convenient location — register today at GroundwaterWeek.com.

DAVID EVENER is the Director of Marketing and Technology at NGWA. Evener holds a bachelor’s degree in computer information systems from Chapman University, and masters’ degrees in information systems management and business administration from Keller University. He is a member of the American Society of Association Executives and the Ohio Society of Association Executives. Prior to his work at NGWA, Evener served in the US Army. He can be reached at devener@ngwa.org.

Produced Water, continued from Cover

reservoir trap stratification due to density contrast finds gas on top of oil and oil on top of groundwater. Water is almost always present in the production of oil and gas. The heavier water is easily separated from lighter hydrocarbons during production. The water is then either re-injected into the reservoir to maintain pressure, or is disposed in injection wells. Over time, the amount of produced water increases. Worldwide, the ratio of water to oil is about 3 to 1. As a field is depleted, that ratio can be as high as 98 percent water to 2 percent oil or gas. At some point the cost of disposing of the produced water is greater than the value of the oil, and the well is “shut in” or plugged and abandoned.

Hydraulic fracturing has been common in conventional reservoirs as a means of enhancing permeability to increase production. Injecting water, either produced from the reservoir or from an additional source, is also commonly used for secondary recovery of oil that is referred to as a water flood. The injected water for fracking as well as water flood may also become produced water as the hydrocarbon production continues.

Organic-rich shale is very porous but almost impermeable. This means that the pores in the shale are not connected to provide permeability. Fracing artificially opens the shales along bedding planes allowing connection of the pores enhancing permeability. Millions of gallons of water are used for a frac-job along with fine sand and chemicals. This pressurized mixture cracks open the shale and the sand particles keep the cracks open so the hydrocarbon can move to the production well.

During production of the well after the frac-job, most of the injected fluid is produced with...
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Find an event near you: grundfos.us/WaterPROChampionship

WIN $10,000

Produced Water, continued from Page 9

the hydrocarbon. This fluid is referred to as flow-back and is also considered to be produced water. The flow-back water is usually disposed in injection wells, but may also be treated for use in another frac job.

The composition of produced water is dependent on the rock type, depth, and age of the aquifer associated with the hydrocarbon reservoir. In some fields, the produced water is less saline than seawater. In other fields the salinity can be 10 times that of seawater. The produced water may also contain oil residue, suspended solids, naturally occurring radioactive materials, and chemicals associated with flowback from fracing.

Data available for 2012 indicates that more than 2.4 billion gallons of water is produced from oil and gas activity in the United States per day. About 90 percent of the produced water is injected, half of which was injected for enhanced recovery and half for disposal. About 5.5 percent of produced water is discharged (mostly treated water in offshore operations). About 3.5 percent of produced water was sent to ofsite ponds for evaporation primarily in the western United States. A very small percentage of flowback was treated for reuse, or beneficial use.

In Texas during 2012, there were 608 million barrels of oil produced (1 barrel = 42 gallons). During that same period, there were 7.4 billion barrels of water produced with the oil and gas. This includes flowback water. Therefore, in Texas the ration of oil to produced water was about 1 to 12.

The majority of hydrocarbons are separated from produced water using gravity, based on the density differences. Physical separation using filtration, hydro-cyclones, and centrifuges are also used. Treating the produced water after separating the hydrocarbon is difficult and expensive. Inorganics such as salts and metals can be removed using reverse osmosis, filtration, ion exchange, or electrocoagulation but all these processes are maintenance intensive and therefore very expensive.

Treating produced water is expensive, but disposing of it has its own problems. The properties of the produced water must be understood before it can be injected. For example, the produced water is in chemical equilibrium in the aquifer and changes in its chemistry can occur due to changes in temperature and pressure.

In addition, produced water is anoxic, or contains no oxygen, so when exposed to air the elements in the water can react resulting in deposition of compounds like iron and sulfur. If the produced water is not compatible with water in the aquifer where it is injected, then the injection well can be plugged with scale from precipitates.
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Tell me a little bit about yourself.

My name is Josh Barrett. I was born in Nacogdoches, Texas and graduated from Garrison High School. The Monday after graduating high school, I started work for Russell Drilling Co. where I would continue to work summers and in between college classes. I always knew I wanted to go to college, so I enrolled at Stephen F. Austin State University and graduated with a degree in Agricultural Business. I am very proud to be a first generation college graduate. After graduating, I moved into a full time role at Russell Drilling. I currently hold driller and pump installer licenses in Texas and Louisiana. One of my favorite roles within the company is operating logging equipment and completing camera surveys. I have been married to my wife Jessica for 12 years, and we continue to live in Nacogdoches. We are members of Grace Bible Church and believe faith comes first and family second.

How did you first get involved in the groundwater industry?

I guess you could say that I was born into it. My dad has been in the industry for 36 years now. I can remember being a little kid and wishing to go to work with my dad. One Saturday, Travis carried his son and my dad carried me to a job. I’m sure at the time us kids thought we worked really hard, but the truth is we were probably in the way more than anything. It was still a big deal to us! I have always been interested in drilling rigs and equipment.

What is your favorite part about working in this industry?

Something I enjoy about my job is that most of the time we are doing something different every day. There is no day or job just like the last. I also enjoy serving our local water systems and feel a personal reward when we have their system back in service within the same day. Most of the time there is no recognition in this industry, but there is some satisfaction in knowing that you just helped a lot of people and they don’t even realize it.

Why is it important to get involved with groups like TGWA?

This is one of the questions I get asked most when I ask someone to be a part of TGWA or the East Texas Chapter. I explain to them that it is important for us, as stakeholders in Texas groundwater, to monitor and give input on the direction of the industry. Without our involvement in TGWA, undesirable laws will be adopted that impact all of our livelihoods and the future of Texas groundwater. I never knew how much work TGWA did for EVERYONE in the industry until I got involved. All of the stakeholders in our industry owe the TGWA team a big Thank You because they work hard to act in our best interest.

Anything else you’d like to add?

I would like to take this time to say Thank You to a few people. I would not be in the industry without my dad. He has taught me a lot about the industry and it is a joy to get to work with him. I also want to thank Travis and Roger Russell. They allowed me to work at Russell Drilling during college, and I know they did not have to do that. I have been fortunate to learn from three of the best in the industry and am grateful for their guidance in getting me where I am today. To my coworkers—past and present. Each of them has played a role in the person I am today. Good and bad! We are only as good as the crew that surrounds us!

Lastly, to my wife. We travel out of town a lot, work crazy hours and never know when we will be home. It takes a special person to understand and support our work schedule. I think most would agree that our wives are the backbone of the family.

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Texas Groundwater Summit Recap

by ADELINE FOX, TGWA

TGWA staff member Adeline Fox attended the Texas Alliance of Groundwater Districts (TAGD) 8th Annual Groundwater Summit in San Antonio August 20-22. The event covered the latest relating to technology and policy in the groundwater industry. From breakout sessions to networking receptions, the summit covered all of the bases. TGWA exhibited during the event and spoke with many attendees about the work of the Association.

Other highlights included a legislator panel with Representative Tracy O. King, Representative Poncho Nevarez, Representative Lyle Larson and Senator Charles Perry; and a presentation by TGWA Ground Water Science Division Immediate Past President Billy Gamblin that included an update on a Lower Trinity public water supply case study.

Overall, the event was worthwhile. We appreciate the opportunity to participate!
Thanks!

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