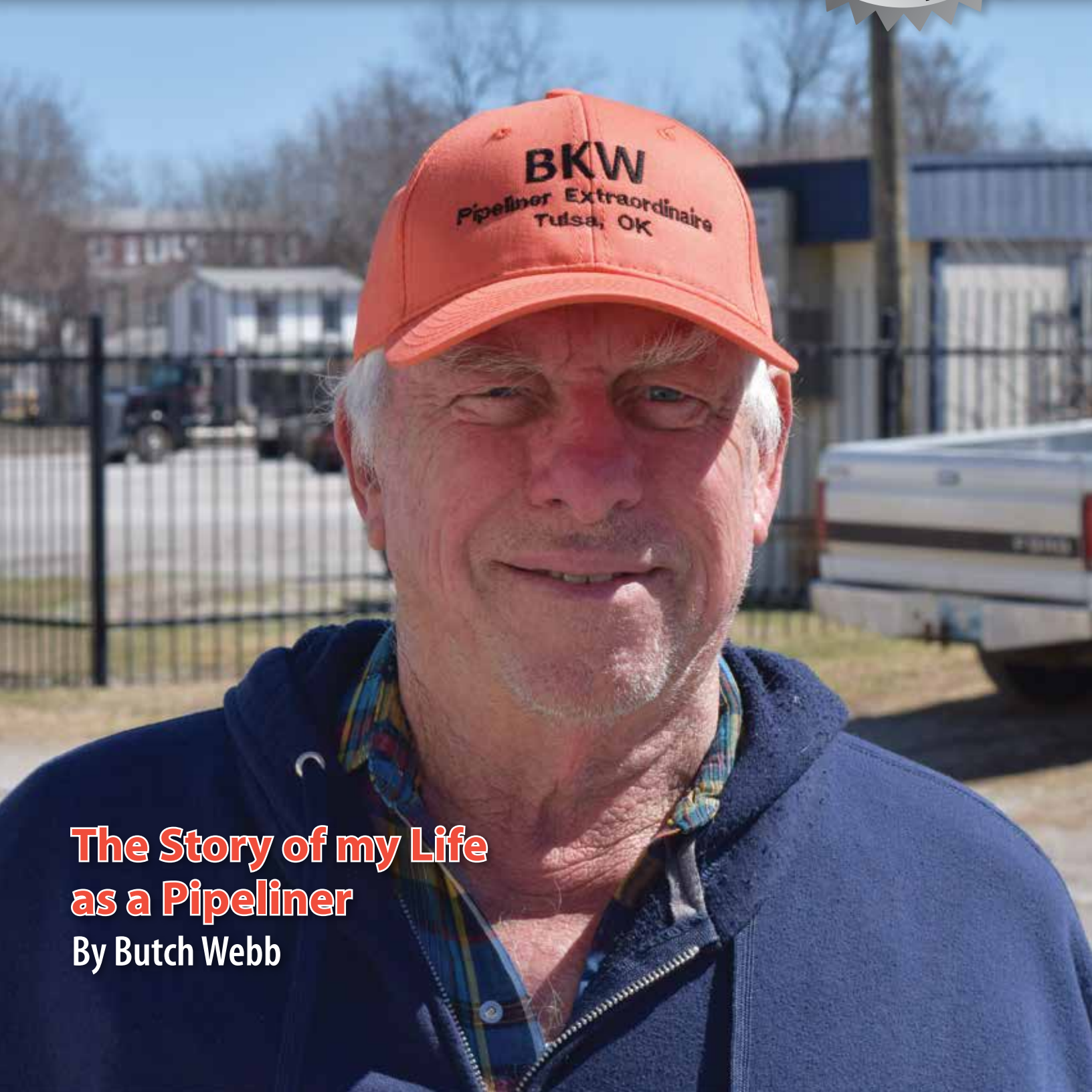


VOLUME 47 | MAY 2019

PIPELINERS

HALL of FAME NEWS



**The Story of my Life
as a Pipeliner**
By Butch Webb



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PIPELINERS HALL of FAME NEWS

VOLUME 47
MAY 2019

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By Butch Webb

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EVENT CALENDAR

Fundamentals of SCADA Systems for the Oil & Gas Industry
Denver, CO
June 10-11, 2019

72nd Annual PLCA Convention
La Quinta Resort & Club
49-499 Eisenhower Drive
La Quinta, California
February 4-8, 2020

DCA Convention
Boca Raton Resort & Club
Boca Raton, Florida
February 24-29, 2020

Pipeline Reunion
Stoney Creek Hotel & Conference Center
200 W. Albany St.
Broken Arrow, OK
March 19-22, 2020

APCA Annual Convention
Hyatt Baha Mar
Nassau, Bahamas
March 27 - April 1, 2020



Send your comments, stories and pipeline photos to tbostic@pipelinejobs.com

Cover photo courtesy of **BKW, Inc.**

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LATEST JOB REPORTS

Midship Pipeline Company, LLC is developing a natural gas pipeline project to create new firm transportation capacity of up to 1,440,000 Dth/d connecting new gas production from the emerging STACK and SCOOP plays in the Anadarko Basin in Oklahoma to growing Gulf Coast and Southeast markets via deliveries to existing pipelines (“**Midship Project**”), Construction contracts have been awarded to: **M. G. Dyess**, ph (601) 943-6663 and **Strike Construction**, ph (888) 353-1444. Work includes approx. 90 miles of 36-inch and 110 miles of 36-inch in Kingfisher County, Oklahoma and terminating at interconnects with existing interstate natural gas pipeline near Bennington, Oklahoma. The project also includes the Velma Lateral – approximately 13 miles of 16-inch pipeline that will begin at the Velma Processing Plant in Stephens County and ending in Garvin County; and the Chisholm Lateral – approximately 20 miles of 30-inch-pipeline that will begin at the Chisholm Processing Plant in Kingfisher County and end on the mainline of the Midship project near Okarche. Work is slated to begin in May 2019.

Price Gregory, ph (713)780-7500 is expected to get underway in May 2019 with a contract for Columbia Pipeline Group on it's **Line 8000 Replacement** project. The project will replace approximately 13 miles of existing 12-inch-diameter bare steel pipeline with new coated steel pipeline. The project includes 5 sections that will be taken up and relayed in Allegany County, MD and Mineral County, WV.

Work is getting underway on the **Red Bluff Extension** project for Energy Transfer. The extension will be located in Waha, Texas and includes installation of approximately 25 miles of 30-inch pipeline. Pumpco, Inc., ph (979) 542-9054 is the contractor.

Hanging H, ph (360) 726-2334 has been awarded a contract by Dominion Energy Questar Pipeline Services for the replacement of approximately 2.4 miles of 14-inch pipeline in Garfield County, Colorado. Headquarters is in Rifle, Colorado. Superintendent is Rick Melroy. The approximate starting date is May 6, 2019.

Rockford Corporation, ph (480) 967-3565 has been awarded a contract by Williams Field Service Company, LLC for the installation of approximately 14.5 miles of 10-inch, 12-inch & 16-inch pipeline in Susquehanna County, Pennsylvania. Headquarters is in Montrose, Pennsylvania. Superintendent is Kevlin Shaw. The approximate starting date is May 1, 2019.

T. G. Mercer Consulting Services, Inc., ph (817) 489-7100 has been awarded a contract by Price Gregory International, Inc. for yard services, load-out and the hauling of approximately 346,609 feet of 30-inch pipe in Winkler County, Texas. Superintendent is Larry Rodriguez. The approximate starting date is May 1, 2019.

United Piping, Inc., ph (218) 727-7676 has been awarded a contract by BP Pipelines for upgrade to a 2-inch through 22-inch

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LATEST JOB REPORTS

pipeline facility metering upgrade in Will County, Illinois. Headquarters will be in Manhattan Station. Superintendent is Mark Thomson. The approximate starting date is May 1, 2019.

Primoris Services Corporation announced three new pipeline awards with a combined value of over \$81 million. The contracts were secured by Rockford Corporation and Primoris Pipeline, both a part of the Pipeline & Underground segment. **Rockford Corp.**, ph (480) 967-3565 was awarded two projects. The first award is for the construction of approximately 20 miles of 42-inch natural gas pipeline in eastern Texas. The second award is for the construction of approximately 16 miles of natural gas gathering pipelines, ranging in size from 10-inch to 16-inch, in north-eastern Pennsylvania. **Primoris Pipeline**, ph (281) 431-5900 was awarded one spread of a natural gas liquids ("NGL") line in West Texas. The award is for the construction of over 34 miles of 20-inch pipeline to transport NGLs from an existing hub to a newly constructed transportation line moving product out of the Permian Basin. Work for the awards is scheduled to commence in the second quarter of 2019 and to be completed by the fourth quarter of 2019.

Troy Construction, ph (281) 437-8214, **Pumpco, Inc.**, ph (979) 542-9054, and **MPG Pipeline Contractors, LLC**, ph (713) 955-9901 may be the successful contractors for Kinder Morgan and EagleClaw Midstream Ventures **Permian Highway Pipeline**

project. The approximately 430 miles of 42-inch pipeline will extend from the Waha in West Texas to Katy, Texas, areas, with connections to the U.S. Gulf Coast and Mexico markets. The PHP Project is expected to be in service in late 2020. Construction is slated to begin in the October 2019.

Price Gregory International, Inc., ph (713)780-7500 has been awarded a contract by Wood Group, USA, Inc. for the installation of approximately 12.65 miles of 30-inch pipeline in Eddy County, New Mexico, approx. 40 miles of 30-inch pipeline in Loving County, Texas and 13 miles of 30-inch pipeline in Winkler County, Texas. Headquarters is in Wink, Texas. Superintendent is Terry McDaniel. The approximate starting date is May 1, 2019.

Michels Corporation, ph (920) 583- 3132 has been awarded a contract by **EQT Midstream** for the **Hammerhead Pipeline**. The pipeline will connect gathering systems in southwestern PA. It will run 64 miles and will be a 30-inch pipeline to Mobley, WV where it will connect with Mountain Valley Pipeline and EQT's Ohio Valley Connector. Construction is slated for May 2019.

Black Hills Corp. announced that its Wyoming natural gas utility, Black Hills Gas Distribution, LLC, has received approval to construct approx. 35-miles of 12-inch natural gas pipeline (**Natural Bridge Pipeine**) in central Wyoming. Construction is slated for May or June 2019. A construction contract is pending.

LATEST JOB REPORTS

Cimarron Express Pipeline LLC received recent approval to construct 65-miles of 16-inch crude oil pipeline extending from northeastern Kingfisher County, Oklahoma, to Blueknight's crude oil terminal in Cushing. Construction is slated to begin in June 2019. Contract awards are pending.

Venables Construction, ph (806) 381-2121 has been awarded a contract for a job for **Aspen Midstream** - approximately 60 miles of 36-inch pipeline (Ace Pipeline) near Brenham, TX. Aspen Midstream will also build approx. 90 miles of 12-, 16- and 20-inch pipeline near Austin, Texas (Aspen Austin Chalk System). The Aspen Austin Chalk System is strategically located to ensure producer access to premium residue and NGL markets and spans the Giddings Field, including Washington, Fayette and Burleson counties, along with portions of Austin, Brazos, Colorado and Waller counties. Work could begin in summer or Fall 2019.

Magellan will build an approximately 60-mile, 24-inch pipeline from Wink to Crane, Texas, which serves as an origin to its Longhorn pipeline. Construction is slated for May or June 2019. A construction contract is pending.

Hanging H Pipeline, ph (360) 726-2334 has been awarded a contract by **Tallgrass Energy** and is expected to begin construction in May 2019 on the Cheyenne Connector, approximately 70 miles of 36-inch pipeline from the Denver-Julesburg Basin to the

Cheyenne Hub just south of the Colorado/Wyoming border.

The **Oneok Arbuckle II Pipeline – WHC, Inc.** ph (281) 962-2062 - 210 miles of 30-inch pipeline from Weatherford, Texas, through Mexia, TX and down toward Huntsville, Texas. Work to begin in mid-May 2019. The approx. total of the Arbuckle II is 530-miles of 24- and 30-inch pipeline from Oklahoma to Texas will have an initial capacity to transport up to 400,000 barrels per day and is expected to be completed in the first quarter 2020. Spread 8 has been awarded to **Progressive Pipeline**, ph (601) 693-8777, approx. 40 miles of 30-inch pipeline near Cleveland, TX. Work to begin June 1, 2019.

Oneok has awarded contracts for the **Elk Creek Pipeline**. The natural gas Elk Creek Pipeline is a 900 mile, 20-inch pipeline from near ONEOK's Riverview terminal in eastern Montana to its existing Mid-Continent NGL facilities in Bushton, Kansas. Some spreads have completed. The following work was expected to begin in April 2019. **Sterling Construction**, ph (980) 625-8606 (Spread 5 – approx. 75 miles of 20-inch) in Wyoming, **WHC, Inc.**, ph (337) 837-8765 (approx. 75 miles of 20-inch) and **WB Pipeline, LLC**, ph (832) 802-4790 (approx. 75 miles of 20-inch).

Plains All American is underway with the Cactus II Pipeline – approx. 420 miles of 30-inch and 80 miles of 30-inch pipeline from Wink, TX to near Ingleside, TX. Contactors are; **Holloman**

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LATEST JOB REPORTS

Construction, ph (281) 878-2600, **MPG Pipeline**, ph (713) 955-9901 and **Progressive Pipeline**, ph (601) 693-8777.

Clearwater Construction, Inc., ph (724) 300-1656 has been awarded a contract by HG Energy for the installation of approximately 4,800 feet of 12-inch pipeline in Marshall County, West Virginia. Headquarters is in Moundsville, West Virginia. Superintendent is Jason Bowe. The approximate starting date is May 1, 2019.

Dun Transportation & Stringing, Inc., ph (903) 891-9660 has been awarded a contract by Welspun to offload and stockpile approximately 425 miles of 42-inch pipe in Pecos, Irion, Kimble, Blanco and Gonzalez Counties, Texas. Superintendents are Mike Bruce and Johnny Denton. The anticipated start date was April 1, 2019.

T. G. Mercer Consulting Services, Inc., ph (817) 489-7100 has been awarded a contract by STUPP for the offloading from rail and racking of approximately 360 miles of 24-inch pipe in Howard and Taylor Counties, Texas. Superintendent is Larry Rodriguez. Starting date was April 1, 2019.

Hanging H Pipeline, ph (360) 726-2334 has been awarded a contract by **Tallgrass Energy** and is expected to begin construction

in May 2019 on the Cheyenne Connector, approximately 70 miles of 36-inch pipeline from the Denver-Julesburg Basin to the Cheyenne Hub just south of the Colorado/Wyoming border.

Minnesota Ltd., ph (763) 262-7000 has been awarded a contract by **Shell** to construct approximately 97 miles of 12-inch pipeline – the Falcon Ethane line - in Pennsylvania and Ohio. Work was set to begin in March 2019.

Phillips 66 Co. is building a new pipeline (**Gray Oak Pipeline**) from West Texas to the Gulf Coast and will cost \$2 billion to build. The Gray Oak Pipeline system will have a capacity of 800,000 barrels of crude oil a day from West Texas' Permian Basin and South Texas' Eagle Ford Shale oil field to the Texas Gulf Coast, including Corpus Christi and the area around Sweeny and Freeport. **MPG Contractors** (713) 955-9901 got underway in March 2019 with their portion of the project.

Michels Corporation, ph (920) 583-3132 and **Precision Pipeline**, ph (715) 874-4510 have been awarded contracts for the Enbridge Line 3 Replacement Program project – approximately 364 miles of 34-inch take up and 36-inch relay in North Dakota, Minnesota, and Wisconsin. Start date undetermined.

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The Story of my Life as a Pipeliner

By Butch Webb



In 2003, the Pipe Liners' Club awarded me the title of "Pipe Liner of the Year". I was very honored and gave an attempt at an acceptance speech by saying I was proud and I thanked everybody including all the people who had taught me what I know about pipelining. However, after a few years thinking about that poor feeble speech, I decided to really thank those responsible for the knowledge I have and to pass this knowledge on to others.

From my experience, nobody can live long enough to learn everything they need to know to be a good pipeliner. They have to learn from somebody who has pipelined and gained knowledge and experience and then shared that knowledge and experience with others. This knowledge comes from listening to the old pipeliners telling stories about some of their "Oh my Gods", and how they solved the problem. Pipelining is a unique industry. Pipeliners have a certain mindset and to develop that mindset they need to gain knowledge from experienced pipeliners. Pipelining is a rewarding occupation and not just financially but in the pride of accomplishment, being outdoors, constantly moving down the line, and comradeship.

In addition, every day is a challenge because of bad weather, rock where there was supposed to be no rock, or just plain bad luck. The pipeliner still has to figure out how to keep the pipeline moving down the line. It takes a kind of toughness to keep going.

My first thank you goes to my dad, Hi Webb. He was a Texas Aggie engineer working for Phillips in Bartlesville, Oklahoma. When I was a kid, we lived in Dewey and on

those hot summer nights we would have the windows wide open to get some fleeting breeze and when it came, it felt good. So, all night we would listen to those one-lung lease engines pumping the oil out of those stripper wells. My dad had the Oil and Gas Journal sent to the house and since there was no television, I learned something about the oil patch. Every four years we would go to Tulsa for the oil show and that was spectacular for a young boy.

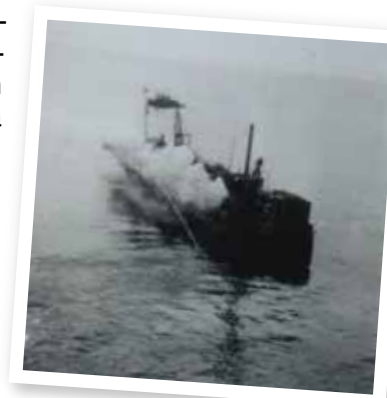
I graduated from Dewey High School in 1953 and three days later I was in south Louisiana standing on the deck of a Brown Root spud barge laying pipe along the east side of the Mississippi River in the salt grass. I was a welder helper for Orval Toby Thorpe. I helped Toby for three summers while going to Oklahoma A&M College at Stillwater. On that job in 1953, Brown Root went offshore in the Brenton Sound laying 4-inch pipe from a WWII LST. It still had the super structure and this was one clumsy operation. Good thing it was a short line.



Toby Thorpe taught me to weld and fabricate pipeline equipment. Of course, during that time I had to listen to a few of his wild stories. Some other wild stories came from Ben Baldwin who was the barge foreman and he knew how to run the lay barge with efficiency. Also, there

was Jean Loverin and Willie Bloomberg who were spacers. These hands were all WWII vets and real men.

In 1954, we laid pipe offshore Grand Isle Louisiana for Humble. Brown & Root had a cork for a lay barge and we had to lay pipe in 30 feet of water. It had two welding stations and one extra combined station for x-ray, coal tar and concrete. It only had four anchors, one on each corner. Rough seas shut us down. However, we were still able to lay pipe and set platform risers.



In 1955, Brown & Root built a Cadillac lay barge. A big cut down LST with three welding stations, one x-ray, one coal tar, and one concrete. The barge had two anchors on each point with one anchor midship on each side. We could lay 125 joints of 12" in 12 hours. This was the first lay barge that laid pipe off the right side since all other lay barges laid off the left side, which is traditional pipe lay.



So, when I got on deck I asked why and was told the reason was the side boom hand. In those days the lay barge set pipe with a side boom, which is typical, and the operator looks over his shoulder to watch the spacers. Well, this side boom hand was an older fellow who had been with Brown & Root for a long time and he had a stiff neck. He talked them into putting the lay string on the right side so he wouldn't have to turn his head to look at the spacers. It's been that way ever since, even without the side boom.

Bead-eye Hoke had the night shift on the lay barge. They did not lay pipe but watched for storms and made repairs. Sometimes he would have me help if needed. Bead-eye taught me how to run a tight ship.

I want, in a big way, to thank Mr. W.D. Willie Schoolcraft who was a friend of the family and the Brown & Root pipeline superintendent. He told me that when I graduated from high school, he would put me to working pipeline. He did and I have been grateful ever since. When he formed Horton and Schoolcraft, Toby Thorpe and I went with him double jointing 36" concrete coated pipe.

In 1956 Mr. Schoolcraft went to work for Fish Service laying pipe in the northwest, of course his entourage followed him. We laid gas service lines in Spokane, Washington. This is when Howard Hibler taught me about servicing towns. Spokane was tied into the Northwest Pipeline and was expanding the towns gas service pipelines. I met Gus Sprague whose dad was a welder and again I learned more about gas service lines.

In 1957 I graduated from Oklahoma A&M in Engineering. I went back to work for Howard Hibler with Fish Service and wound up in Idaho putting in gas service lines. During this time, I worked with Grady Howard who inspected the work in Montpelier, Idaho. When Fish Service's contract ran out, I went to work for the contractor as a laborer. During that time, we dug the service lines from the main to the houses by hand and one day the foreman came by with a small ditching machine called a Ditch Witch and he elected me the operator. It only had four small wheels and you stood by it and pushed it in the direction you wanted it to go, but it was sure fast. After that work ended, we laid a 4" cross country gas pipeline in Wyoming. About that time the foreman handed me my greetings telegraph from the U.S. Army and I became dressed in olive drab and equipped with an M1 Grand.

After I returned from the service, I contacted Howard Hibler who was working for Trunkline Gas Co. and needed help with their 1959 expansion. I want to thank him for this opportunity because that's when I became a real design engineer. Trunkline was going offshore for the first time and they did not have engineers with offshore experience, at least I had worked on a lay barge and knew the limitations and techniques.

Howard Hibler had the Michigan Expansion section and he did not pre-survey the route but scaled the distances from maps. He was going to pick up the station numbers with the as-built survey, kind of gutsy when dealing with land owners. On this job I learned about the B31.8 code and how to apply it to alignment sheets, specifications, and material. I really learned pipeline engineering on this job from Tom McPearson, John Hughes, Howard Hibler, Johnny Sellers, and the chief engineer Burt Mast. They were well experienced engineers. Then there was Virgil Kinchlow who ran field services. He knew how to control the contractors with inspectors like Crum Davis. Jack Phillips was his assistant and we worked together on some jobs.

I want to thank Clay Spelman who ran the pipeline operations for Trunkline. He wanted me to be the northern division engineer chasing electromites. So, in 1960 I moved north. This is where I learned how to handle gas and how a blow down was used. Trunkline was supervising a big loop program, we had to handle the gas and help with the flame

cuts and flame tie-ins. This experience became valuable later when I was involved with new gas pipeline construction and few people had this knowledge. I want to thank H.G. Smitty Smith the division superintendent, Sweed Pearson district superintendent, and many others including welders and helpers.

My boss was Burt Surber, he taught me how to run a corrosion control system. I really admire him for his patience and ability to be a good boss. As the local engineer I designed widgets and some pipe parts but mostly hung around construction. Meterman Bailey taught me about meters, Mac McDuffy taught me about microwave communications and two-way radios, and aviator White taught me about airplanes flying patrol.

Burt Mast was a forward-thinking engineer, he was constantly testing pipelines and advancing pipeline technology with the American Gas Association. We tried to blow out a quarter mile of 26" pipe to study the rate of shear as the crack moved faster than the speed of sound. Burt Mast and his engineers were constantly testing the Panhandle Eastern natural gas flow formula for pipelines. We tested various methods to internally coat in place pipelines. Inventors would bring their internal coating machines and Trunkline would run them with air and they would come out junk. Others would bring their super internal coating pigs and would leave 10 miles of coating in the first half mile. That is when we started testing sand blasting techniques to remove the coating. Trunkline also tested various types of protective tapes for corrosion coating and some tapes were so bad the contractor wanted extra money to put them on. Some tapes were even removed because they did not protect the pipe. He definitely advanced pipelining and for that we can all thank him.

In 1966 Williams Brothers Engineering Co. (WBEC) needed a gas hand to help build 1,000 miles of 36" pipeline located in Minnesota, Wisconsin, and Michigan called the Great Lakes Pipeline (GLGT). WBEC chief engineer was Charlie Flint and he gave me a chance to use all the knowledge I had gained from all those people I have already mentioned. I went to work for Bill Stalcup and he turned me loose and I was all over that country making alignment sheets and locating appurtenances. The job was in two phases. The first phase was 200 miles in Michigan in 1967 and the second phase was 800 miles headed north in 1968. I hydrostatic tested the first 200 miles and was taught by our head field superintendent A.T. One-arm Maxwell. He was definitely a construction hand and let the contractors know it. His welding inspector was the famous Glen Owens who could handle welders. The test company was Williams Pressure Service out of Shreveport, Louisiana and their foremen were Terry Bryant and Don Olsen. These two get a big thank you for their knowledge and experience. They should have

taught pipeline testing classes so future test procedures would be compatible with construction techniques.

On Phase 1 (the first 200 miles) one of the contractors was H.C. Price and the spread man was Ed Kennedy. There was a country café on the main highway along the pipeline and on occasion he would buy lunch there and eat vegetable stew. It had been dry with no rain and Mr. Kennedy was really laying pipe across Michigan. However, about the time he came upon the carrot patch which was about a half mile long, the rains came and the line required set-on weights. The carrot patch became one big bog and at best all he could do was waller the pipe into the ground. Even helicopters did not help much. One day he asked to go to lunch and at the country café he again ordered vegetable stew. While eating I noticed he was picking out the carrots. I asked him about it and he said he didn't eat carrots anymore. This tells you something about spread men.

On Phase 2, I tested 200 miles of pipe in upper peninsula Michigan. The terrain was hilly and Williams Pressure Service needed an engineer so they sent Tom White to run things. Tom and I were always trying to make life easier, he taught me a lot. On the last series of tie-ins after hydro-testing eight sections I was specifically told by the Tulsa Headquarters to dewater each section with air before tying in the sections. However, Williams Pressure had been dewatering with air compressors at the west end and had air locked. Shorty Cunningham was the field superintendent and he had only 5 days to finish or else because we had to have gas flowing by November 1st, 1968. So, we had a big powwow with Charlie James, the construction superintendent, and he said there was hardly enough time to make tie-ins alone much less dewatering first. So, they both looked at me and said "Well?", shocked I said "I think I can make it if we tie it all in and put two test headers at the west end to get more pig velocity." I opened up everything that had a hole in those headers and told them to let 'er rip. It was late and the water came out kinda sorta good but then it came down to just a trickle and I thought about moving to Canada. Well, night came and I went to sleep. When I woke up water was going into the low clouds and when the pig came in it was hallelujah. We beat the final tie-in date and became heroes.

Want to thank Jack Gibbs who was on Phase 1 and 2 as main boss over inspection. He was a smart boss that could get things organized. On Phase 2, met the famous spread man Rusty Killingsworth on one of my test spreads. He knew how to chew people out. On Ed Kennedy's spread we had the famous phantom leak in a swamp in upper Michigan that we never found and wound up replacing about 600 feet of pipe. It was a bad deal until the famous blow outs. When the blow outs occurred, Great Lakes was accused of lacking quality inspection and they presented the report

on the phantom leak and said 'look how much money we spent on a leak we could not find'. That ended that.



The pipeline operated from November 1, 1968 till December 27, 1968 when there was a blow out in upper Michigan. On January 1, 1969 I was on an airplane to the site to hydrostatic test the repair. It was -30°F with a 30-mph wind, I was a cold Okie. It blew out 1,200 feet of pipe and it was scrap. Two weeks later it was repaired and during pack it

blew out again. Both blow outs were caused by 6-inch scraps on the pipe wall. This was the first major pipeline to use x65 pipe and we learned a lot. Kenny Bond was the GLGT superintendent on the job and I don't believe he ever slept until the line was back in service.

Many thanks goes to Clint McClure for his advice and pipeline experience. He was raised on a ranch in New Mexico, had been a POW in Germany, was an engineer for El Paso Natural and tested pipeline equipment among his other duties. I would consult with him on problems and he kept me out of trouble on many occasions. On Phase 2, he wrote the hydrostatic test procedures in great detail and they became a book. David Williams had enlisted several top hands for the Great Lakes project, one included Fred Culvern who had been with Panhandle Eastern and had helped develop the Panhandle Eastern formula for natural gas pipeline throughput. He was also responsible for Trunkline Gas Company not using flanged fittings. He said he was watching some hands change out a flanged valve at a compressor station and they cut off the flanges on the pipe and bolted them to the new valve and then welded the flanges back into the pipeline. Shocked, he asked why and they said it was easier and quicker to make a tight seal. He told them he could fix that by furnishing weld-in valves.

O.W. Wade was hired as a protective coating expert and he taught us the pros and cons of asphalt enamel, coal tar enamel, FBE, tape, and wax. After all the studying and testing, he settled on asphalt enamel and wax.

During Phase 2 WBEC designed the straights of Mackinaw 4-mile crossing with two 24" pipelines. To engineer this project WBEC brought in two top hands in Bob Aldridge and John Bomba. They designed the crossing and it was successful all the way.

I want to thank Bob Aldridge for forming an offshore group at WBEC. This was the beginning of wandering around the

world building pipelines. I worked for Carl Rollins on one job and he was the ideal boss. He turned me loose and when I needed help with an ignorant client he would intervene and it made the job run smooth. Another project manager was Liesel Berger head engineer in London with a job in Algeria. On that job, I had river crossings and hydrostatic test procedures and their construction superintendent was Charlie Malone and he couldn't thank me enough when I changed the design on the river crossings. The hydrotest was another matter. I was going to use Clint McClure's super test manual as a go-by and when I got it all together Mr. Ed Mencheff, who was in charge of construction, asked me to sit by him and he would go over the manual with me. Well, he tore out the first page and said "I am not going to do that" then it was the next page that was gone and the next and on and on until there was only about 4 pages left. He then said "Kid, I am the contractor, not the engineer." Guess what that taught me.



In 1972 Great Lakes Pipeline started looping with 36" loops in Minnesota. I was glad to see Terry Bryant and Don Olsen on the job. It was winter and cold. Near Ballpark Minnesota there was a small lake we were using for water supply. We dewatered a mile of pipe going east and the Corp of Engineers said we were polluting the lake with mud. So, they wanted to know what I was going to do with the west 25 miles of pipeline. Fortunately, the terrain was flat without a hydraulic head at the test header. It was 16°F and I opened both 6" dewater valves and let them freeze. The Corp hands showed up at dusk and John McCauly was the head inspector on this section. I told John to get 125 lbs. of gas behind the pig and let me know. He said he had the gas and I thawed out one of the 6" valves. Poof, the water went up in the night sky and came down snow. The Corp hands inspected everything and said it's ok. I thawed out the other and poof, two dewater fountains.

Well Williams Pressure had their fill pump parked close to this little operation and the snow was drifting over to the pump. Miscalculating the amount of water in that pipeline I let it go. I went to sleep and when the pig came in all I could see was a huge mountain of snow in bright sunshine. That fill pump was under 30 feet of snow and ice! When Don Olsen showed up, I thought he was going to whip my butt. Boy was he mad. It took a 98 clam all day to dig out the fill pump, it was in bad shape. However, the Corp hands were happy and I got another hero button, until July 4 the next summer. They were mad again because it was the only ice around that part of the country and they picked up 134 beer cans that morning. You just can't satisfy the Corp.

During that job there were three compressor station tie-ins. These tie-ins included a 30" bypass valve connected to a 36x36x30 tee. During the welding it was cold, the tee was extra heavy and the valve came equipped with pipe pups. The heavy tee absorbed the heat from welding causing a problem. The hydrotest Gods always started the testing at

night when it was cold and when Terry Bryant put the squeeze on the test section the weld between the tee and the valve let go and blew the valve 60 feet.



When Terry moved to the second compressor site, he blew the valve 65 feet trying to set a record. When we got to the third compressor site, John McCauly was the inspector and stated his valve was not going to blow off. When asked why he said that after the first blow off he had the welders add more meat to the outside and at the second blow off he had the weld cap cut off and added more meat to the stringer bead. We put the squeeze on the section and pressurized to yield pressure and at 10psi drop repressured. The weld held for 12.5 hours before letting go. The valve did not blow off but the crack began in the weld and traveled into the valve pipe pup. This shows that steel is not solid but plastic and meter grains will realign under stress.

Williams Brothers Engineering had great leadership and a high regard for the employees. David Williams had a great vision for building pipelines and was very personable with the hands. He brought on Morgan Greenwood who also made a person feel important. These men took care of the hands overseas which is not always present with engineering companies. For bosses there was Billy Jack Stalcup, Bob Aldridge, Carl Rollins, and the most dynamic of all Chuck Norris. Then there was Ed Robinson, head of computers, who was always trying to pump my head with computer logic. He had Glen Cunningham helping and Glen and I went back to the Idaho days. For the slurry group there was Ralph Hughes and Jack Tennant. When I wasn't on a paying job, I would help them set up a test because I could weld the test samples. When it came to slurry, they knew their stuff. Other top hands that I worked with and who told of their experiences were Bill Rischard, Billy Delancy, Handy Whychoff, Curt Jacobs, Joe Blankenship, Bill Smith, Ed Kavanagh, Mike Langston, Bill Brownfield, Jim Brooking, and many others who may have been only a passing conversation but still had a transfer of

knowledge. Curt Jacobs taught me about pipeline hydraulics and we tested ball pigs running through a side swing check valve. It worked. While working for Williams Brothers several salesmen came to visit and shared their knowledge with the hands. One was Paul Theobald who was a Cameron valve salesman. He had been a B-24 bomber pilot over Europe with many stories. While in Bolivia I had tried to open a 4-inch single trunnion ball valve with 1,000-pound gas and could not hold it open. Even with a valve operator and four peons and a 36-inch rigid it would not stay open. When asked, Paul explained how a ball valve works and why they were double trunnioned.

Also, John Hoff would visit and teach about pipe coatings and field joint coatings. And you cannot forget Sam Johnson who knows everybody in the industry and why and where you use gate valves and ball valves. These types of people are all valuable.

I want to thank Allen Edwards for having the faith to help develop my auger anchor system for buoyancy control for pipelines. We worked on that project and obtained the patent on pull testing each auger anchor after installation and then he told me to go after the work. Well, sales was not my trump suit so when Stalcup called I went to Bolivia operating a gas pipeline. The pipeline carried gas from Santa



Cruz, Bolivia to Argentina. Williams Brothers had laid the pipeline and a top hand named Bowie was left to clean up the paperwork. Humberto Saraz was the Bolivian in charge of the project and I was in the Army with him. Small world. On one project in Carlsbad, New Mexico, an in-place water line had to be internally coated. WBEC sent me there to observe since I had experience with Trunkline. The line had been pickled by Bill Shriver who had developed a super pig for internal coating. However, another company had a monster pig machine that sprayed coating on the pipe walls and this is the equipment that was tested. It made a lot of noise but it worked.

In 1974 Bill Smith was head of the pipeline department of Crest Engineering Company which was a process design company. I want to thank him for sending me all over the world. First, Holland designing a job in Saudi Arabia, Iraq putting a gas gathering system. Indonesia doing offshore and land pipelines. The Iraq project engineer was Dennis Turner who let me loose on the pipeline with Bill Floyd whom I really appreciated. Bill was a surveyor, had a genius IQ and was an aide for General Patton from North Africa to the Battle of the Bulge. He located all the pipelines without a ground survey using various coordinates. In Iraq as-builts are unknown so Bill and I had to guess locations from aerials and road maps. While in Iraq we got run out of that famous museum in Baghdad and partied with the Iraq engineers at the engineers' club. Highlight of our trip.

In Indonesia in 1975, we had a construction superintendent Don Hendrickson. He ran a good ship in a jungle where there wasn't a Wally World around to go buy supplies to keep the job running. We had some top hands on this job. Pat Martin on gathering systems, Goins Boys and Sam Stubbs inspecting, and Bob Bailey running the overall job. The contractors were Keith Stone with Dodsels the land contractor, and Ernie Gant superintendent for CB&I building the storage tanks. Stone and Gant both demonstrated how far ahead you had to plan to keep the job running smooth in the jungle. McDermott had the offshore and river crossings and no project with McDermott would be complete without the Drinkwater boys hollering "force account" every day. Most of McDermott's top hands were LSU engineers and a young engineer on site said that at LSU in engineering class 101, you learned how to fill out McDermott's force accounts.

Ernie Gant was responsible for five 500,000 BBL oil storage tanks plus miscellaneous smaller tanks. He had to liter the material from ships to shore on a 1-mile mud flat at low tide to the jungle at high tide. Quite a feat. He brought one other American for a welder foreman and the rest were locals. The local union boss was a colonel in the army that collected \$10.50/day for the hands and paid the hands \$1.50/day. The Colonel had a good deal going. However,

he got greedy and did not pay the hands and they got their machetes and cornered Ernie and his foreman in the office shack with threats they were going to have to learn to live headless unless they got paid. Well, the Colonel was summoned with money and the hands got paid and Ernie and his foreman kept their heads. That's life in the jungle.

Joe Eaton was the man that bid the work for Williams Brothers Construction. When not on projects, I would help him gather information, count welds, fittings, valves, and anything else. He would throw all that information into the computer hopper and it would grind out the answer. There was top secret info in that computer that was definitely not privy to me. When asked about it, Joe would only grin.

In 1979 Ralph Hughes started an engineering company called Entran, he had work but no hands. So, I worked for him designing and building gathering systems. One big gas gathering system was located in Nowata County Oklahoma. Kenny Green tied in with Leroy Steven who was an old spread man for many years and they did the construction of the system. Together they were very knowledgeable.

About this time Northern Border was kicking off and Tom White who was with Price called me about auger anchors being spec'd on the job. I want to thank Tom for this because it put me in business. Without Tom, there would be no BKW.

At the time, in 1980, I was not in the fabrication business so I went to Valmont who fabricated my anchors and there was Carl Rollins who really got the ball rolling. I rented a building and got one of my Indonesia inspectors Ted Norman, who knew fabrication, to put the installation tools together. In addition to Price, Gary Bracken with Williams Brothers gave BKW their anchor job and Bobby Mosley was the spread man.

Since 1980 BKW has installed anchors all over the country and offshore thanks to a lot of friends. They have been most helpful. In addition to anchoring, I worked with Duck Brantley, a spread man for Price; Blasdale, a spread man for Troy; Larry Neff, who ran SUN Engineering and was a super pig designer; Fayette Curtis, who taught me about quality of weld xrays; Chuck Paul, a machinist who knows metals; Bob McCarty, with DNOW, who knows pipe and fittings; and Wilson Rubottom, who does my drafting. Without these people life would be difficult.

In the mid 80's Dudley Malone with Anson asked if I would design and build gas gathering pipelines in western Oklahoma. I partnered with Kenny Green on the construction and had Dick Korgan do survey and alignment sheets. Bill Hoover, with HRM, furnished rental gas compressors for gathering systems and he would have us install the com-

pressors on these systems. He taught us a lot about compression. We worked at this till the gas play died. Later I would partner with Keith Stone on local pipeline construction projects. Most of the lines we laid were to high pressure gas wells and required steel pipe. The ends normally had 90° risers using long radius weld ells. Filling the lines with a pig for hydrostatic testing was ok but dewatering a one-mile long line with an air compressor caused a problem when the dewater pig hit the weld ells on the other end. The pig would stop and you had to wait an hour before getting enough pressure to push the pig through the ells.

We were using SUN Engineering pigs that were take apart types. I removed some of the cups and the pig would fly through the ells with no problem. So, I designed the tadpole pig for just such type of work. To make the pig, I consulted with Kenny Knapp with Knapp Polly Pig, he made the molds and poured the pigs. He was good at it.

I want to thank the Price boys again, Tom White and Mike Langston, for letting me design the jet fuel pipeline in Anchorage Alaska for their subsidiary Conam Construction. In 1997 this company was run by Bob Stinson and Dale Kisse who were good people to work for. The engineer for Conam was Jeff Huey and he worked on permits. Keith Stone came up and ran a side boom. This job was the first job that I had a run-in with tree huggers. Jeff Huey had to deal with them and I was just an observer. The tree huggers had several organizations that wanted money or a toll to approve the pipeline. Some wanted to replace land that was consumed by the pipeline even though it was buried and the animals still had access to the vegetation. As Jeff Huey said it was just extortion. The tree huggers received over a million dollars but when they divided it up, they were around \$80,000 short.

To prevent street lay and traffic congestion, the pipeline was routed offshore in Cook Inlet on the mud flats. The construction was timed at low-low tide and Jeff said ok to more extortion but they had to sign off before low-low tide. They grumbled but eventually signed off and we laid pipe. Jack Hivley was the engineer for the client who owned the jet fuel system at the airport. Jet fuel systems have to be squeaky clean so Jack sat us down and taught us about filters and fueling airplanes. Anchorage International used 42,000 BBL per day jet fuel. That's a lot of jet fuel.

We designed the pipeline, pig traps, and pump station with three engineers. I had pipeline, Curt Jacobs had pumps, and Otto Boothe had electrical and SCADA. Together we made a good team and the project was successful. On this job, Hugh Eidt was a pipe salesman who played ball for me and he showed the competition how to sell concrete coated pipe at a low cost. It was a good job for him.

After that job we pulled three flow lines 10,000 feet from shore to an offshore platform in Cook Inlet. BKW fabricated several pieces of equipment for the pulls. Bob Gilchrist was the guru marine engineer and when he calculated the pull loads on pulling the pipe through the j-tubes, he was right on. He also helped on a 10" pull in Turnagain Arm. American Marine did the diving and after that job Steve Stuart, one of the head divers, had me design various pieces of equipment for them on other jobs. Between Conam and American Marine BKW has worked all over Alaska and I am very grateful. Alaska is beautiful country. It should be noted that if you design equipment that makes life easier for divers, they will buy you beer all night long.

VECO had BKW design and construct a small pipeline on Saklin Island, Russia. The superintendent was Bob Yant and he knew how to talk to the Russians. He was a Navy pilot in WWII in the Pacific and was a top hand for Curran. Keith Stone ran the construction and Max Bell taught everybody how to grind out the Russian laborers' campfire with a 7 sideboom. His swamper did not want to work, they wanted to stay warm but when he headed for their fire in that 7 sideboom they scattered like a covey of quail. After that, they went to work.

That was another job that did not have a Wally World, you had to bring everything you needed to get the job done. The client wanted to load barges with crude oil before the ice formed so we laid pipe from storage to shore and then plastic pipe to offshore with hoses from a PLEM. Before leaving the client said no pig traps, so that meant no material. After arriving on Sakhalin, the client said he wanted pig traps and he also moved the meter station to the middle of the pipeline requiring two sets of traps. Fortunately, the job was at a refinery and they had some material and a junk pile. However, they didn't have everything and we made orange peel reducers, padded tees and blind flanges out of weld necks with internal plates. Luckily everything passed hydrostatic test.

You have to have mountain man instincts to work in Russia. The boat captain that shipped the pipe, sidebooms, welding machines, pickups, and other equipment paid a Russian boat captain to offload and liter the material to shore. However, after receiving the money he did not show and the ship captain used our welders and material to build a barge big enough to haul the sidebooms. This captain was determined to offload and he did. He knew his stuff.

In the 80's BKW got into the design and fabrication of pigging equipment. A big thank you goes to Jim Forrester, Frank Gray, Shane Stevens, and Harvey Diehl for educating me on pigging techniques, design and operations. Their experiences are valuable. In 2015, Shane Stevens with SUN Engineering had BKW test some 48" diameter

pig cups to determine how much pressure it took behind the pig to blow out the cup. BKW designed and fabricated the test jig and went to work testing. Shane would furnish the cups and after the cup blow out, he would go back to his lab and build another for testing until he got what he wanted. It worked.



From the 90's on, BKW has been making widgets that pipeliners cannot find on the shelf. On the North Slope, Conam Construction needed an internal pipe cleaning machine and BKW made a lance that cleaned the pipe squeaky clean. American Marine divers in Cook Inlet needed pull heads and a 250,000-pound chain jack to pull those three flow lines from shore through an internal j-tube. The divers also received two underwater towers to lift the pipe to make repairs. One time the divers needed two 30" diameter dam plugs and dual 9,000-pound pull heads to create a pipe ditch during a pull.

BKW specializes in Piggable Y's and Switches used in the gas gathering systems, and Ball Launchers and Receivers, along with Ball Release Pins. Making widgets that work for pipeliners is a challenge and a joy. Some of the people that have been foremen that installed anchors on pipelines have been Larry Smith, with Henkels & McCoy, James Wentworth with Sunland, and a foreman named Hobbie. These foremen were good hands and made the contractors money.

After many years designing, constructing, and operating pipelines, I look back at the teachers that gave me the needed tools. In high school, Charlie Hankins taught machine design drafting, Bernie Mitchel taught science, Ralph Bunch taught math. In college, Pop Leonard taught heat power, Wyatt taught pipeline hydraulics. These people formed the foundation for anybody coming in contact with them to advance our culture. They deserve a big thank you. Pipeliners leave a legacy behind after building pipelines

and growing old, when they finally go to the big spread in the sky. Panhandle Eastern has 1930 pipelines that had single random length pipe double jointed with acetylene welding into 40' long pipe joints and then tie-in with Dresser couplings. The hands that installed those pipelines are long gone but the pipeline still transports gas from production to the customers. Likewise, I have worked on pipelines in the 1950's and 60's and these pipelines are still working. Our legacy is something we can be proud of.

Pipelining has changed since the 1950's. In those days, a 36" spread could lay 2 miles of pipe in a day with only 250 hands. That was when there was no OSHA, no EPA, and no environmentalists running pipeline design. Now it takes 750-1,000 hands to do the same work. This does not make better, safer pipelines, it just runs up the cost of service. Some day when a little old lady at the end of the gas pipeline can't afford the gas and freezes to death will anybody take the blame? Definitely not a bureaucrat.

Also, in those days when there was a pipeline incident only the people involved and the company felt the pain of restitution. Now when there is an incident an army of bureaucrats swarm out of Washington D.C. and begin overreacting and writing numerous regulations just to justify their existence. This just makes it hard on pipeliners and raises the cost of pipelines.

Pipelining is a part of the oil patch. We transport what the down holers produce. The media and the government don't like us because we don't need their subsidies or handouts, therefore they can't control us. The fact is the government is just in the way. As pipeliners we consider the tree huggers as hypocrites. Next to medical doctors, pipeliners have made life for people much easier. We get no thank you's for supplying fuel to the power plants to light their houses, or fuel to heat their houses, fuel for their cars, nor do they need outhouses or water wells. Just think what their life would be like without pipeliners. I am proud to be a pipeliner.

-Butch Webb

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PROPOSED PROJECTS & UPDATES

The staff of the FERC has prepared a Final Environmental Impact Statement (EIS) for the **Annova LNG Brownsville Project** (referred to as the Annova LNG Project, or Project). Annova LNG Common Infrastructure, LLC; Annova LNG Brownsville A, LLC; Annova LNG Brownsville B, LLC; and Annova LNG Brownsville C, LLC (collectively Annova), request authorization to site, construct, and operate a liquefied natural gas (LNG) export facility in Cameron County, Texas. The project would include a new LNG export terminal

capable of producing up to 6.95 million metric tons per year of LNG for export. The LNG terminal would receive natural gas to the export facilities from a third-party intrastate pipeline. Annova anticipates a five-year construction period if the project is authorized. The facilities for the project include the following major components: gas pretreatment facilities; liquefaction facilities (six liquefaction trains and six approximately 72,000 horsepower [hp] electric motor-driven compressors); two LNG storage tanks; boil-off gas handling system; flare systems; marine facilities; control, administration, and support buildings; access road; fencing and barrier wall; and utilities (power, water, and communication). If approved, construction is slated for 2022 with a partial in-service date of 2024.

The FERC has prepared a favorable Environmental Impact Statement (EIS) for the **Calcasieu Pass LNG Project**. The proposed project would include a new liquefied natural gas (LNG) export terminal and 23.4 miles of 42-inch pipeline in Cameron Parish, Louisiana. The terminal would include the following facilities: liquefaction facilities; two full-containment LNG above ground storage tanks, each with a usable capacity of approximately 200,000 cubic meters; a 720 megawatt electric generating plant; a marine terminal consisting of a turning basin and LNG carrier berths; LNG piping; transfer lines; loading facilities; and other infrastructure. The pipeline would include the following facilities: one meter station; three main-line valves; one pipeline inspection/cleaning device launcher at the meter station; and one pipeline inspection/cleaning device receiver on the terminal site. The FERC concludes that construction and operation of the project would result in some adverse environmental impacts, but these impacts would be reduced to less than significant levels.

The staff of the FERC has a favorable Environmental Assessment (EA) for the **Cheyenne Connector Pipeline Project** and the Cheyenne Hub Enhancement Project, proposed by **Cheyenne Connector, LLC** and Rockies Express Pipeline LLC. The applicants are requesting authorization to construct approximately 71 miles of new 36-inch-diameter pipeline, five new meter and regulating stations, and one new compressor station all in Weld County, Colorado (Cheyenne Connector Pipeline). The Chey-

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enne Hub Enhancement Project includes the following facilities: one new approximately 32,100 horsepower compressor station; enhancements to modify Rockies Express' existing Cheyenne Hub interconnect facilities, including installation of pipe, valves, fittings, filters, and ancillary equipment; and ancillary facilities constructed at Rockies Express' existing Cheyenne Hub, consisting of station piping, vibration reducing equipment, compressor and electrical buildings, valves, and gas cooling equipment.

Cogent Midstream, LLC will construct an approximately 25-mile pipeline that will deliver residue gas from its Big Lake Natural Gas Processing Complex located in Reagan County in the Midland Basin of West Texas to Kinder Morgan's Gulf Coast Express Pipeline (GCX Pipeline). In addition to the GCX Pipeline, Cogent's residue pipeline is also expected to cross the proposed Permian Highway Pipeline and Whistler Pipeline projects. Cogent's 20-inch pipeline is anticipated to come into service in the fourth quarter of 2019 and have a total capacity of approximately 400 million cubic feet per day (MMcf/d). The pipeline's in-service date coincides with Cogent's fourth-quarter timeline for commissioning its Big Lake II natural gas cryogenic processing plant. Currently under construction, the Big Lake II Plant

has the nameplate capacity to process 200 MMcf/d and will bring Cogent's total processing capacity to approximately 510 MMcf/d.

Columbia Gas Transmission has received a revised Notice of Schedule of Environmental Review from the FERC for the **Buckeye Xpress Project**. Issuance of the Environmental Assessment is expected May 20, 2019 with a final project decision slated for mid-August 2019. The proposed project would include replacement of approximately 64 miles of existing, aging 20-inch and 24-inch natural gas pipeline from Vinton, Ohio, to Burlington, Ohio, on a portion of Columbia's R-System. Columbia proposes to replace the existing pipeline potentially with 36-inch pipeline necessary to provide 275,000 Dth/d of additional firm capacity for the project. Upon completion, the replaced line will be known as R-801. Columbia is proposing to place the project into service in November 2020. A phased in-service approach may be considered once customer negotiations are complete.

Crimson Midstream and MPLX announced the commencement of an extended binding open season to assess interest and solicit commitments from prospective shippers for transportation service on the **Swordfish Pipeline**. The

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proposed Swordfish Pipeline would originate from terminal facilities in St. James, Louisiana, and Raceland, Louisiana, and provide service to the Clovelly Hub. Storage and further transportation services to end markets would be facilitated through the Clovelly Hub and connecting carriers. Pending shipper interest and final construction of the project, the Swordfish Pipeline is expected to be a multi-diameter (16-inch, 20-inch and 30-inch) batched system with the ability to transport various levels of capacity, from approximately 170,000 to 600,000 barrels of crude oil per day based on market demands. The completion of the Swordfish Pipeline will have minimal impact on current shippers on the Crimson system, as their ability to access the St. James and local refining markets will be maintained. The in-service date for the Swordfish Pipeline is anticipated to be in the first half of 2020.

The FERC has issued a favorable Environmental Assessment to **Dominion Energy Transmission** for the proposed **Sweden Valley Project**. The project will include construction of: approximately 1.7 miles 20 inch pipeline lateral to the new Port Washington Metering and Regulation (M&R) delivery point in Tuscarawas County, OH; approximately 3.2 miles of 24-inch pipeline looping in Greene County,

PA; the re-wheel of compressors on three existing centrifugal compression sets at Dominion's existing Newark Compressor Station in Licking County, OH; the installation of regulation equipment at Dominion existing South Bend Compressor Station in Armstrong County, PA and Leidy M&R Station in Clinton County, PA; and the construction of related appurtenant facilities. Dominion is proposing incremental rates for transportation service on the facilities proposed for construction herein. The cost of the project will be \$49,876,709 million. As of mid-April 2019, the project is still pending FERC approval.

Driftwood LNG LLC and Driftwood Pipeline LLC, have received a positive Final Environmental Impact Statement from the FERC for the liquefied natural gas (LNG) export facilities and certain interstate, natural gas transmission pipeline facilities in Evangeline, Acadia, Jefferson Davis, and Calcasieu Parishes, Louisiana. The project would provide gas and processing to produce up to 26 million tonnes per annum of LNG for export. The project facilities include five LNG plants; three LNG storage tanks; three marine berths capable of accommodating LNG carriers of up to 216, each; 74 miles of 48-inch pipeline, 10.6 miles of 42-inch pipeline; 11.3 miles of 36-inch pipeline; and 1

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mile of 30-inch lateral pipeline collated with the main pipeline; three compressor stations providing a total of 275,000 horsepower of compression; six pig launchers and receiver facilities, 15 meter stations, and 17 mainline valves. If approved, construction is expected to begin in the 2nd quarter of 2019.

Duke Energy Ohio will construct the **Central Corridor Pipeline** in Hamilton County to ensure the safe and reliable delivery of natural gas to its customers in southwest Ohio for decades to come. Duke Energy Ohio proposes to construct an approximately 13-mile long, 20-inch natural gas pipeline in order to increase the reliability of natural gas delivery in central Cincinnati. The proposed pipeline would run from an existing gas main near the intersection of Butler, Warren, and Hamilton counties to an existing main in either the Norwood area or the Fairfax area. The project has a proposed in-service date of Fall 2019.

EagleClaw Midstream, a portfolio company of Blackstone Energy Partners and I Squared Capital, announced in April 2019 a series of commercial and organizational milestones. **Delaware Link Pipeline** - First, EagleClaw announced that it has made a final investment decision to


proceed with construction of the Delaware Link pipeline, a new pipeline designed to transport residue natural gas from the Delaware Basin to the Waha hub, with access to further downstream takeaway connections. Delaware Link is expected to be anchored by residue volumes from EagleClaw's processing facilities as well as third-party customers. The approximately 40 mile, 30-inch pipeline will originate at EagleClaw's three existing natural gas processing complexes in Reeves County, Texas (East Toyah, Pecos, and Pecos Bend) and will have transportation capacity of at least 1.2 Bcf/d. Given the level of producer inquiry, EagleClaw is also evaluating increasing the pipeline's diameter and related transportation capacity. Delaware Link is intended to provide E&Ps in the Delaware Basin further flow assurance and improved price realization by providing a direct, cost-advantaged path to Waha and multiple interconnections at Waha to various takeaway pipelines. These interconnections include, amongst others, direct access to the Permian Highway Pipeline, an approximately 2.1 Bcf/d pipeline designed to transport gas from Waha to the U.S. Gulf Coast and other premium priced markets. Permian Highway, a joint venture between Kinder Morgan, EagleClaw, Apache and an affiliate of another anchor shipper, is currently under construction and is expected to be in ser-

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PROPOSED PROJECTS & UPDATES

vice in the second half of 2020. **Pecos Bend IV Processing Plant Update** - Second, EagleClaw announced that it has begun commissioning of the company's fourth cryogenic processing plant at its Pecos Bend site, Pecos Bend IV, with full operational in-service planned for May 2019. The completion of Pecos Bend IV, which was acquired in conjunction with EagleClaw's 2018 acquisition of Caprock Midstream, will take EagleClaw's total interconnected processing capacity in the Delaware Basin to 1.3 Bcf/d. The interconnected nature of EagleClaw's three main processing sites – East Toyah, Pecos and Pecos Bend – provides heightened flow assurance and reliability for the company's customers. EagleClaw is also working to connect its Sierra Grande site in Culberson County, which was recently acquired in conjunction with EagleClaw's acquisition of Pinnacle Midstream, to the overall EagleClaw system via a high-pressure connector line, which should be complete by June 2019.

Empire Pipeline, Inc., a subsidiary of National Fuel Gas Company, has FERC approval for the **Empire North Project**. The company plans to construct two new compression stations, one in the Town of Farmington, N.Y., and the other in Jackson Township, PA, along with minor facility modifications to its existing Jackson Meter & Regulator Station and its existing New Victor Regulator Station, located in Jackson Township, PA, and Victor, N.Y. The Empire North Project consists of: installation of new electric motor-driven natural gas compressor facility off Hook Road on two tax parcels that total approximately 92.4 acres in the Town of Farmington, Ontario County, N.Y.; installation of new turbine-driven natural gas compression facility on two parcels that total approximately 42.2 acres off Buckwheat Hollow Road and Stateline Road in Jackson Township, Tioga County, PA; minor modifications to existing New Victor Regulator Station, located off Valentown Road in Victor, N.Y.; minor modifications to the existing Jackson Meter and Regulator Station, located in Jackson Township, Tioga County, PA; and uprate of Maximum Allowable Operating Pressure (MAOP) of the existing Empire Connector Pipeline (ECP) that runs from Victor, N.Y. to Corning, N.Y. from 1290 psig to 1440 psig, in accordance with federal pipeline safety regulations. The proposed uprate is not expected to require any construction-related activities. The project has a targeted in-service date of November 2019. Empire Pipeline has filed with FERC for a Notice to Proceed Construction on April 25, 2019 for the project. FERC proceed approval pending.

Enable Midstream Partners, LP has filed a pre-filing request with the FERC for the company's **Gulf Run Pipeline** project. Golden Pass is a joint venture between affiliates of Qatar Petroleum and ExxonMobil. The new, 171-mile pipeline in Louisiana would run through Red River, DeSoto, Sabine, Vernon, Beauregard, and Calcasieu Parishes,

Louisiana. Pending receipt of applicable permits and regulatory approvals, construction could begin by 2022. The Gulf Run Pipeline will provide access to some of the most prolific natural gas producing regions in the U.S., including the Mid-Continent region and the Haynesville, Marcellus and Utica shales. The proposed new pipeline will run from northern Louisiana to the Gulf Coast, helping deliver U.S. resources to international markets with increasing demand.

Energy Transfer Partners, L.P., Magellan Midstream Partners, L.P., MPLX LP and Delek US Holdings, Inc. announced they have received sufficient commitments to proceed with plans to construct a new 30-inch common carrier pipeline to transport crude oil from the Permian Basin to the Texas Gulf Coast region, with the ability to increase the pipe diameter to expand the capacity based upon additional commitments received during the upcoming open season. The 600-mile pipeline system is expected to be operational in mid-2020 with multiple Texas origins, including Wink, Crane and Midland. The pipeline system will have the strategic capability to transport crude oil to both Energy Transfer's Nederland, Texas terminal and Magellan's East Houston, Texas terminal for ultimate delivery through their respective distribution systems. The project is subject to receipt of customary regulatory and Board approvals of the respective entities.

Enterprise Products Partners L.P. announced a series of projects designed to provide an additional 55,000 barrels per day of fractionation capacity at existing facilities in Texas and Louisiana. As part of the initiative, Enterprise plans to optimize its Shoup fractionator in Nueces County, Texas by expanding and repurposing a portion of the partnership's South Texas pipeline system. Construction of approximately 21 miles of new pipeline along with the conversion of approximately 65 miles of existing natural gas pipeline to natural gas liquids service would allow Enterprise to supply Shoup with 25,000 BPD of additional NGL volumes. The expanded pipeline capacity is expected to be available in the third quarter of 2019. In Louisiana, Enterprise plans to restart its 30,000 BPD Tebone fractionator in Ascension Parish. The plant is connected by pipeline to each of the partnership's Louisiana natural gas processing plants, as well as its NGL fractionation and storage hub in Mont Belvieu, Texas. The resumption of service at Tebone, which is expected in the first quarter of 2019, will complement Enterprise's Norco and Promix fractionators, providing another option for NGLs delivered to Mont Belvieu.

Enterprise Products Partners L.P. announced plans for an incremental 150,000 barrels per day expansion to its natural gas liquids fractionation facilities at its Mont Belvieu complex. The expansion would increase Enterprise's NGL fractionation capacity to 1 million BPD in the Mont Belvieu area, and approximately 1.5 million BPD compa-

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nywide, once service begins. This new NGL fractionator is expected to be completed in the second quarter of 2020. Enterprise previously announced plans for a 150,000 NGL fractionator that is under construction and is scheduled to be completed in the first quarter of 2020. The projects are supported by long-term, fee-based contracts. Teague added that the new fractionation units will supply NGL products for the expanding petrochemical industry on the U.S. Gulf Coast as well as growing global demand for U.S. NGLs.

Enterprise Products Partners L.P., Midcoast Operating L.P. (a subsidiary of Enbridge, Inc., Western Gas Partners, LP and DCP Midstream, LP) recently held a binding open season for additional capacity on the **Texas Express Pipeline**, which transports mixed natural gas liquids from Skellytown, Texas in Carson County to the NGL fractionation and storage complex in Mont Belvieu, Texas. The partners expect to expand Texas Express by approximately 90,000 barrels per day. Enterprise will be responsible for constructing the expansion, which will consist of adding pumping capacity along the 583-mile route. Service on the expanded Texas Express pipeline is expected to begin in the second quarter of 2019. The expansion of Texas Express is designed to facilitate growing production of NGLs

from domestic shale basins, including the Denver-Julesburg Basin in Colorado. Complementing the Texas Express expansion is a proposed increase in capacity on the 435-mile Front Range pipeline that originates in Weld County Colorado and connects to the Texas Express pipeline. Combined, these two assets offer an integrated solution that provides much-needed takeaway capacity for NGL production in the DJ Basin and access to the Gulf Coast market.

Gulf South Pipeline Company, LP has received a positive Environmental Assessment from the FERC for the **Willis Lateral** project. The proposed project would provide about 200 million cubic feet of natural gas per day to Entergy Texas, Inc.'s Montgomery County Power Station Project near Willis, Texas. The project would consist of the following facilities entirely within the state of Texas: construction of approximately 19 miles of 24-inch pipeline in Montgomery and San Jacinto Counties; addition of a new 15,876 horsepower turbine engine to the existing Goodrich Compressor Station and construction of a new Meter and Regulator station at the compressor station in Polk County; construction of the Index 129 tie-in and pig launcher facility in San Jacinto County; construction of the new Willis M&R station at the terminus of the project (including a pig receiver, filter

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separators with a liquid storage tank, and ancillary equipment) in Montgomery County; and construction of a main-line valve facility in Montgomery County. The Willis Lateral Project has a tentative in-service slated for May 2020.

The staff of the FERC has prepared a favorable Draft Environmental Impact Statement for the **Jordan Cove Liquefied Natural Gas Project** proposed by Jordan Cove Energy Project LP and the **Pacific Connector Gas Pipeline Project** proposed by Pacific Connector Gas Pipeline L.P. Jordan Cove is requesting authorization to liquefy at a terminal in Coos Bay, Oregon up to 1.04 billion cubic feet of natural gas per day for export for to overseas markets. Pacific Connector seeks a Certificate of Public Convenience and Necessity under Section 7 of the NGA to construct and operate an approximate 229 mile natural gas transmission pipeline providing about 1.2 billion cubic feet per day of natural gas from the Malin hub to the Jordan Cove terminal, crossing portions of Klamath, Jackson, Douglas, and Coos Counties, Oregon.

Jupiter Energy Group, a privately held midstream company that provides crude oil producers and gas plants with logistics and offtake solutions, is currently holding a 90-day

open season for binding shipper commitments on the **Jupiter Pipeline**, which is expected to be operational in fourth quarter of 2020. The Jupiter Pipeline will be a 650-mile, 36-inch-diameter crude oil pipeline with origination points near Crane, Texas and Gardendale / Three Rivers, Texas, and an offtake point in Brownsville, Texas. As designed, it will be the only pipeline out of the Permian Basin that will access all three deep water ports in Texas (Houston, Corpus Christi and Brownsville) and will have direct access to a fully capable VLCC loading facility off coast at Brownsville. Projected in-service date is 2020.

Kinder Morgan, Inc. announced a successful open season on its **Roanoke Expansion** projects on the **Plantation Pipe Line System**. Following the open season, Plantation Pipe Line secured long-term committed volumes of 20,000 barrels per day (bpd). The Plantation Pipe Line Company's investment in the project is approximately \$49 million. In addition, Kinder Morgan Southeast Terminal's (KMST) investment, fully backed by 10,000 bpd of long-term committed volumes, is approximately \$9 million. With the successful open season, Plantation Pipe Line will submit the Petition for Declaratory Order (PDO) to the FERC for approval of commercial terms for the project. Pending all regulatory ap-


provals, the project is expected to be in full service by April 1, 2020. The Plantation Pipe Line Roanoke Expansion will provide approximately 21,000 bpd of incremental refined petroleum products capacity on Plantation from the Baton Rouge, Louisiana, and Collins, Mississippi, origin points to the Roanoke, Virginia, area. The expansion will primarily consist of additional pump capacity and operational storage on the Plantation system. The KMST expansion will provide approximately 10,000 bpd of incremental refined product throughput capacity at the terminals.

Kinder Morgan's proposed **Gulf LNG** export plant in Mississippi moves closer to receiving approval for construction after receiving a positive Final Environmental Impact Statement from FERC staff. Construction and operation of the project would result in some adverse environmental impacts but "avoided or reduced to less than significant levels" if KMI follows some recommendations, FERC staff says in the report. Gulf LNG is designed to have two liquefaction trains that together will produce as much as 10.8M mt/year of liquefied natural gas, or ~1.4B cf/day.


Kinder Morgan Texas Pipeline (KMTP) and EagleClaw Midstream Ventures (EagleClaw) have announced a final

investment decision to proceed with the **Permian Highway Pipeline Project (PHP Project)**. An affiliate of an anchor shipper exercised its option in January 2019 to acquire a 20 percent equity interest in the project, bringing KMTP and EagleClaw's ownership interest to 40 percent each. Altus Midstream (a gas gathering, processing and transportation company formed by shipper Apache Corporation) has an option to acquire an equity interest in the project from the initial partners by September 2019. If Altus exercises its option, Kinder Morgan, Inc., EagleClaw and Altus will each hold a 26.67 percent ownership interest in the project. The approximately \$2 billion PHP Project is designed to transport up to 2.1 billion cubic feet per day (Bcf/d) of natural gas through approximately 430 miles of 42-inch pipeline from the Waha, Texas area to the U.S. Gulf Coast and Mexico markets. KMTP will build and operate the pipeline. A number of federal and state agencies will be involved with the approval and oversight of the PHP Project, including, but not limited to, the Railroad Commission of Texas, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Texas Historical Commission, Texas Commission on Environmental Quality, Texas General Land Office and Native American tribes as applicable. The PHP Project is expected to begin construction in Fall of 2019 with an in service date slated

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for late 2020, assuming timely receipt of the requisite regulatory approvals.

Magellan Midstream Partners is shelving plans for its proposed Permian Gulf Coast Pipeline - amid ongoing discussions to combine the project with another crude oil pipeline. The 600-mile Permian Basin to Gulf Coast pipeline project is unlikely to proceed as originally announced. Magellan announced the pipeline project in September 2018 as a joint venture with Energy Transfer LP, Delek US and MPLX LP. The proposed 30-inch pipeline would have moved 1 million barrels of crude oil per day from the West Texas shale play to Magellan's terminal in Houston and Energy Transfer's terminal in Nederland. However, the company remains in discussions to combine the project with another proposed Permian Basin to Gulf Coast crude oil pipeline, recent filings and earnings calls show. During a Jan. 31 investors call, Magellan CEO Mike Mears said the company was in the process of acquiring right of way for the Permian Gulf Coast Pipeline but was also interesting in combining the project with another crude oil pipeline proposed by Exxon Mobil, Plains All American Pipeline and Lotus Midstream. The three companies formed a joint venture named **Wink to Webster Pipeline LLC** in January to move 1 million bar-

rels of crude oil per day from along a 650-mile pipeline to the Houston area. During a Feb. 21 investors call, Energy Transfer Chief Financial Officer Tom Long reported that his company was also in talks to join the **Wink to Webster Pipeline** project.

Medallion Pipeline Company, LLC announced the successful closing of its binding open season for a major expansion of its existing crude oil pipeline system in the Midland Basin. As previously announced, Medallion will expand six segments of its pipeline system to transport increased quantities of crude oil, produced from acreage proximate to Medallion's system, to downstream pipelines and markets. Based on the capacity bids received during the open season, Medallion has received long-term binding commitments sufficient to move forward with the construction of the Expansion. The Expansion is expected to commence commercial operations in phases, with full commercial operations occurring during the fourth quarter of 2019.

Medallion Delaware Express, LLC and Medallion Pipeline Company, LLC are conducting an open season to solicit binding, long-term commitments to support an expansion of the Delaware Express and Medallion pipeline

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systems for an expanded joint tariff service. Through the joint tariff service, shippers receive an integrated transportation service for the transportation of crude oil produced in the Delaware Basin to multiple market centers and long-haul pipelines connected to the Medallion pipeline system. Prospective shippers will have the opportunity to participate in the open season and make binding commitments to both Delaware Express and Medallion for the expanded joint tariff service under either acreage dedication or volume commitment transportation agreements (transportation services agreements) at volume incentive rates. The existing Delaware Express pipeline system aggregates crude produced oil on two discrete gathering systems in Reeves, Pecos and Ward counties in the southern Delaware Basin and transports the crude oil on a 61-mile, 16-inch diameter mainline to interconnections with downstream pipelines, including Medallion. Delaware Express also accepts crude oil delivered by truck at its Independence Station and Eagle Eye Station on the Delaware Express mainline. An affiliate of Delaware Express owns storage tank and truck unloading facilities at the Independence Station and the Eagle Eye Station. The existing Medallion pipeline is a network of approximately 800 miles of 6-inch and larger crude oil pipeline in the Midland Basin. Through the joint tariff service,

Medallion receives crude oil from Delaware Express at the interconnection between Delaware Express and Medallion near Medallion's Crane Hub. Medallion delivers crude oil transported under the joint tariff to the Crane Hub, the Midland Hub and the Colorado City Hub, which provide access to multiple large-volume pipelines that serve various downstream markets. Subject to the outcome of this open season, Delaware Express and Medallion will expand their systems to provide additional joint tariff service. Delaware Express will construct new gathering facilities to connect crude oil production in Reeves County and Medallion and Delaware Express will expand their mainline systems to transport the new production. The Delaware Express and Medallion mainline capacity for joint tariff transportation will be expanded over time as crude oil production from the new dedicated acreage increases.

Magellan Midstream Partners, L.P. recently held an open season for the expansion of the western leg of its refined products pipeline system in Texas and has launched an open season to assess customer interest. The proposed expansion would increase Magellan's capability to transport refined petroleum products, such as gasoline and diesel fuel, from Gulf Coast refineries to demand centers in

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Abilene, Midland/Odessa and El Paso, Texas, with further optionality to access markets in the states of New Mexico and Arizona, as well as international markets in Mexico via connections to other pipelines owned by Magellan and third parties. The pipeline's current capacity of 100,000 barrels per day (bpd) could increase to 140,000 bpd following the expansion. Subject to the results of this open season and receipt of all necessary permits and approvals, the expanded capacity could be operational by mid-2020.

Jordan Cove Energy Project, L.P. and Pacific Connector Gas Pipeline, LP have an application before the FERC for their proposed **LNG and Terminal Pipeline**. The project is designed to create a new LNG export point on the Oregon coast to serve overseas markets particularly around the Pacific Rim. The LNG Terminal would be capable of receiving natural gas, processing the gas, liquefying the gas into LNG, storing the LNG, and loading the LNG onto vessels at its marine dock. The proposed liquefaction facility would be capable of producing up to 7.8 million metric tons per annum of LNG. PCGP proposes to construct and operate a new, approximately 233-mile long, 36-inch natural gas transmission pipeline crossing through Klamath, Jackson, Douglas, and Coos Counties, Oregon. The pipeline would be designed to transport 1,200,000 dekatherms per day of natural gas to the LNG Terminal from interconnections with the existing Ruby Pipeline LLC and Gas Transmission Northwest LLC systems near Malin, Oregon. If approved and the project proceeds, construction is slated for the 2nd quarter of 2019 with an in-service date projected of 2024.

Magellan Midstream Partners, L.P. and Navigator Energy Services have announced an extension of the open season to commitments from shippers for the planned **Voyager Pipeline** to May 31, 2019. The pipeline will transfer different grades of light crude oil and condensate from Cushing, OK to Houston, TX. Potential shippers continue to project considerable interest, especially the ones that reach Voyager from connecting carriers in numerous producing regions. The extension offers these shippers additional time to confirm their commitments across multiple pipelines and appraise a new origin point near Midland. The proposed Voyager pipeline will involve construction of almost 500 miles of 20- or 24-inch diameter pipeline from Magellan Midstream's terminal in Cushing to its facility in East Houston. Originating from the Cushing, the pipeline will enable shippers to begin deliveries at Cushing from the Magellan Midstream-operated Saddlehorn Pipeline serving the Rockies and Bakken production regions, Navigator's Glass Mountain Pipeline serving the Mid-Continent basin as well as other connections within the strategic Cushing crude oil hub. On request of potential shippers, the sponsors are assessing the addition of a Midland origin to provide further supply flexibility from the prolific Permian Basin. The Midland origin is likely to be accomplished in phases

through Voyager's use of an existing Magellan pipeline that may become inoperative in the near future. This is part of the company's announced West Texas refined products pipeline expansion project. Voyager will have the capability to use an existing terminal in Frost to construct assets and connect to the Cushing-to-Houston segment. At the destination, the widespread Houston crude oil distribution system will deliver the multiple grades of crude oil to Houston and Texas refineries. Also, the delivery will be made to export facilities like the terminal owned by Seabrook Logistics, LLC, which is owned 50% by Magellan Midstream. Initially, the Voyager Pipeline is anticipated to have an initial capacity of at least 300,000 barrels per day, as proposed. Eventually the capacity will expand further if the industry demand increases. The pipeline is estimated to come on-line in late 2020.

Midcoast Energy, LLC is proposing a new pipeline, the **CJ Express**, which will be incorporated with existing Midcoast facilities, to provide natural gas transportation services from the Carthage area to Houston Ship Channel and Gulf Coast markets. The CJ Express Pipeline will consist of up to 150 miles of 36 inch or larger diameter pipeline, commencing near Carthage in Panola County, Texas and extending south to Midcoast's Clarity Pipeline in Hardin County, Texas to provide for deliveries to Trunkline Gas (NTX), Gulf South (Area 10), TRANSCO (Zone 2), TETCO (STX & WLA), Florida Gas (Zone 1), Tennessee Gas (100 Line), Kinder Morgan Texas Pipeline, Atmos Texas Pipeline and Channel Industries Gas. Midcoast anticipates CJ Express to be completed in mid-2020.

Mountain Valley Pipeline formally applied for approval to construct a 73-mile natural gas pipeline extending from Chatham across state lines into North Carolina. The pipeline extension, the **Southgate Project** would connect with Mountain Valley's contentious mainline that's set to end in Pittsylvania County. For the project to receive the necessary permits, MVP must prove to the FERC there is a need for the pipeline and all efforts have been made to limit the impact to the public. Issuance of the Final Environmental Impact Statement from the FERC for the project is expected in December 2019 with a final FERC decision slated for March 2020.

Northern Natural Gas Co. – The FERC has issued a favorable Environmental Assessment for the **Northern Lights Expansion 2019/Rochester Expansion project**. The proposal has two major components, known as the **Northern Lights 2019 Expansion Project** and the **Rochester Project**, which together would provide approximately 138,504 dekatherms per day of upstream firm natural gas transportation service to serve increased markets for industrial, commercial, and residential uses. The projects consist of new pipeline and compression facilities, all in

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the state of Minnesota. The Rochester Project component includes 12.6 miles of new 16-inch pipeline in Olmsted County (Rochester Greenfield Lateral); increase of maximum allowable operating pressure on an 8-mile-long segment of 16-inch-diameter pipeline in Freeborn and Mower Counties; a new town border station in Olmsted County, including a pig receiver; relocation of a regulator from Freeborn to Mower County; and appurtenant facilities, including two valves and a pig launcher at milepost (MP) 0.0 of the Rochester Greenfield Lateral. The Northern Lights Expansion Project component includes 10.0 miles of new 24-inch pipeline in Hennepin and Wright Counties; 4.3 miles of new 8-inch pipeline loop extension in Morrison County; 1.6 miles of new 6-inch pipeline loop in Le Sueur County; 3.1 miles of new 24-inch pipeline extension in Carver County; a new 11,153-horsepower compressor station in Carver County; an additional 15,900 hp of compression at the existing Faribault Compressor Station in Rice County; an additional 15,900 hp of compression at the existing Owatonna Compressor Station in Steele County; and appurtenant facilities, including valves, pig launchers, and pig receivers in Hennepin, Wright, Morrison, Le Sueur, and Carver Counties. Construction start is anticipated for Spring 2019 with a tentative in-service date of November 2019.

ONEOK, Inc. announced plans to invest approximately \$100 million to construct a 75-mile natural gas liquids (NGL) pipeline lateral connecting the northern portion of the Bakken NGL Pipeline with a third-party natural gas processing plant in eastern Williams County, North Dakota. The lateral is expected to be complete in the fourth quarter 2020 and is supported by long-term dedicated NGL production, including a minimum volume commitment, which will provide NGLs to ONEOK's Elk Creek Pipeline. ONEOK continues discussions with producers and processors in the area for additional potential volume commitments. The lateral will provide access to raw feed NGL pipeline takeaway in an area of Williams County with historically limited transportation options, and will provide connectivity with key NGL market centers.

ONEOK, Inc. announced plans to invest approximately \$295 million to expand its West Texas LPG Limited Partnership (West Texas LPG) pipeline system, which provides natural gas liquids (NGL) takeaway capacity for Permian Basin producers. The expansion project, which is expected to be completed in the first quarter 2020, is supported by long-term dedicated NGL production from six third-party natural gas processing plants in the Permian Basin that are expected to produce up to 60,000 barrels per day (bpd) of NGLs. The expansion includes the construction of four new pump stations, two pump station upgrades and pipeline looping that will increase the West Texas LPG mainline capacity by 80,000 bpd and additional infrastructure to connect West Texas LPG with ONEOK's previously announced

Arbuckle II Pipeline project. ONEOK continues discussions with producers and processors in the region for additional potential volume commitments. ONEOK's previously announced 110,000 bpd pipeline lateral extension of the West Texas LPG system into the Delaware Basin and expansion of the existing mainline system is currently under construction and expected to be in service this month. The West



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Texas LPG Pipeline is an NGL pipeline system that provides takeaway capacity to Permian Basin producers and consists of approximately 2,600 miles of NGL pipeline in Texas and New Mexico. The system provides transportation services to the Mont Belvieu market center from nearly 40 third-party natural gas processing plants located in the Permian Basin. The Permian Basin in southeastern New Mexico and western Texas is the largest crude oil and natural gas producing basin in the U.S.

ONEOK, Inc. plans to invest approximately \$2.3 billion between now and 2020 to construct: a new 400,000-barrel per day (bpd) natural gas liquids (NGL) pipeline – the **Arbuckle II Pipeline** – that will create additional NGL transportation capacity between ONEOK's extensive Mid-Continent infrastructure in Oklahoma and the company's existing NGL facilities in Mont Belvieu, Texas; a new 125,000 bpd NGL fractionator – MB-4 – in Mont Belvieu, Texas, and related infrastructure; and a new 200-million cubic feet per day (MMcf/d) natural gas processing facility – the Demicks Lake plant and related infrastructure – in the Williston Basin. **Arbuckle II Pipeline and MB-4:** The approximately 530-mile, 24- and 30-inch diameter Arbuckle II

Pipeline is expected to cost approximately \$1.36 billion and will have an initial capacity to transport up to 400,000 bpd of unfractionated NGLs originating across ONEOK's supply basins and extensive NGL gathering system to the company's storage and fractionation facilities at Mont Belvieu. The Arbuckle II Pipeline is expected to be completed in the first quarter 2020. The pipeline will have the capability to be expanded up to 1 million bpd with additional pump facilities, which could more than double ONEOK's current capacity between the Mid-Continent and Gulf Coast. The new MB-4 fractionator and related infrastructure, which includes additional NGL storage capacity in Mont Belvieu, are expected to cost approximately \$575 million and be completed in the first quarter 2020. ONEOK's total NGL fractionation capacity will increase to 965,000 bpd following the completion of MB-4. The initial capacity of the Arbuckle II Pipeline is more than 50 percent contracted, and MB-4 is fully contracted. Both are anchored by long-term contracts with terms ranging between 10 to 20 years. Adjusted EBITDA multiples for these projects are based only from these commitments but additional supply agreements continue to be negotiated. **Demicks Lake plant and related infrastructure:** The Demicks Lake natural gas processing plant and related

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field infrastructure are expected to cost a total of approximately \$400 million and be completed during the fourth quarter 2019. The Demicks Lake plant will be built in McKenzie County, North Dakota, which is in the core area of the Williston Basin. The plant is supported by acreage dedications with primarily fee-based contracts. The Demicks Lake plant is expected to contribute additional NGL volumes to ONEOK's NGL gathering system and natural gas volumes to ONEOK's 50 percent-owned Northern Border Pipeline. ONEOK's Williston Basin natural gas processing capacity will increase to more than 1.2 billion cubic feet per day following the completion of the Demicks Lake plant.

Phillips 66 Partners, Harvest Midstream Company, and PBF Logistics LP have entered into an agreement to jointly develop the ACE Pipeline System. The **ACE Pipeline System** will provide crude oil transportation service from the market hub in St. James, Louisiana, to downstream refining destinations in Belle Chasse, Meraux, and Chalmette, Louisiana. The pipeline system is expected to have an initial throughput capacity of 400,000 barrels per day, with the ability to expand further depending on shipper interest. The parties may elect to add a delivery destination in Clovelly, Louisiana, subject to market demand. Subject to customary and regulatory approvals, the pipeline system is expected to be placed in service in the second half of 2020. The ACE Pipeline System will include a new-build segment to connect the St. James market center to the CAM Pipeline. Harvest Midstream will contribute its existing CAM Pipeline to the ACE Pipeline System.

Phillips 66 and Bridger Pipeline LLC recently held a joint open season for the proposed **Liberty Pipeline**, which will provide shippers the opportunity to secure crude oil transportation service from the Rockies and Bakken production areas to Corpus Christi, Texas. The Liberty Pipeline is expected to have an initial throughput capacity of 350,000 barrels per day (BPD) with the ability to expand further depending on shipper interest in the open season. The pipeline is anticipated to be placed in service in the fourth quarter of 2020. Phillips 66 also announces an open season for the proposed **Red Oak Pipeline**, which will provide shippers the opportunity to secure crude oil transportation service from Cushing, Oklahoma, to Corpus Christi, Houston and Beaumont, Texas. The Red Oak Pipeline is expected to have an initial throughput capacity of 400,000 BPD with the ability to expand further depending on shipper interest in the open season. The pipeline is anticipated to be placed in service in the fourth quarter of 2020.

Phillips 66 Partners - Gray Oak will be a new pipeline built and operated by Phillips 66, spanning from the West Texas Permian Basin to the Gulf Coast. The pipeline will create reliable access to crude oil in the region, bringing more growth to the Texas energy industry. The current

pipeline route will run 850 miles from the Permian to Corpus Christi. It will also connect to market centers in Sweeny and Freeport, Texas. Gray Oak will help new energy being found and produced in Texas get to refineries, manufacturers and, ultimately, consumers. Today, transporting oil from the Permian Basin presents many challenges. Supplies are often bottlenecked and shipped by truck. Gray Oak means more oil will be transported by pipeline, providing refineries in Texas and abroad with access to U.S. oil. The Gray Oak Pipeline project supports continued production growth in the Permian Basin and will improve the state economy. The pipeline is expected to be in service by the end of 2019.

A subsidiary of **Plains All American Pipeline, L.P.** is constructing the **Cactus II Pipeline**. The Cactus II System includes a combination of existing pipelines and new pipeline construction projects originating in Wink, Texas and extending to Corpus Christi. This system will have a capacity of transporting 670,000 barrels of crude oil per day. A new terminal south of Taft, Texas is also being constructed and will include more than 1 million barrels of crude oil storage. The construction projects related to the Cactus II System are anticipated to support 2,650 construction jobs. The Cactus II System is targeted for partial service in the fourth quarter of 2019 and targeted for full service in the second quarter of 2020. This system is owned by joint venture Cactus II Pipeline LLC, and Plains will construct and operate the system on behalf of the joint venture partners.

Port Arthur Pipeline, LLC, a subsidiary of Sempra LNG & Midstream, has received a positive Final Environmental Impact Statement (EIS) from the FERC for its proposed Texas Connector natural gas pipeline in connection with the proposed development of the Port Arthur Liquefaction Project by Port Arthur LNG, LLC, and PALNG Common Facilities in Jefferson County, Texas. The Final EIS addresses the potential environmental effects of the construction and operation of the following proposed facilities: two liquefaction trains, each with a capacity of 6.73 million tons per annum of LNG for export; three LNG storage tanks, each with a capacity of 160,000 cubic meters; a refrigerant storage area and truck unloading facilities; a condensate storage area and truck loading facilities; a new marine slip with two LNG vessel berths, an LNG vessel and support vessel maneuvering area, and an LNG transfer system; a materials off-loading facility and Pioneer Dock; approximately 38.9 miles of 42-inch-diameter pipeline to bring feed gas from interconnections with Kinder Morgan Louisiana Pipeline LLC, Natural Gas Pipeline Company of America, Houston Pipeline Company LP, Texas Eastern Transmission, LP (TETCO), Florida Gas Transmission Company, LLC, and Golden Triangle Storage, Inc./Centana Intrastate Pipeline, LLC to the terminal site; approximately 131.3 miles of 42-inch-diameter pipeline to bring feed gas from interconnections with Centana Interstate Pipeline, LP, TETCO, Tennessee



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Gas Pipeline Company, Market Hub Partners – Egan, Pine Prairie Energy Center, Texas Gas Transmission, LLC, ANR Pipeline Company, and Columbia Gulf Transmission, LLC to the terminal site; three compressor stations; meter stations at the pipeline interconnects; and other associated utilities, systems, and facilities (mainline valves, pig launchers/receivers, contractor yards, access roads, etc.). Construction is expected to begin in the third quarter of 2021, with commercial operations expected to begin in third quarter of 2022. On October 16, 2017, Port Arthur Pipeline filed another application requesting a certificate of public convenience and necessity for the **Louisiana Connector Project**, authorizing Port Arthur Pipeline to construct, own, and operate additional new proposed Liquefaction Facility south of Port Arthur in Jefferson County, Texas. The Louisiana Connector Project will be capable of delivering approximately 2,000,000 MMBtu per day of natural gas to the Liquefaction Project. The **Louisiana Connector Project**, along with the Texas Connector Project facilities proposed in this proceeding, will be the primary means of delivery of feed gas to the Liquefaction Project. The anticipated construction start date is 1st quarter of 2021 with in-service slated for 3rd quarter 2022. The Louisiana Connector Project will include 131 miles of 42-inch diameter gas pipeline, a new compressor station, interconnection facilities with interstate and intrastate natural gas facilities, and other appurtenant facilities. The proposed Louisiana Connector Project facilities will extend from an interconnect with Columbia Gas Transmission (MP 130.9) located northeast of Eunice, Louisiana in St. Landry Parish through Evangeline, Allen, Beauregard, Calcasieu, and Cameron Parishes in Louisiana and Jefferson County, Texas and terminate at the proposed Liquefaction Facility south of Port Arthur in Jefferson County, Texas. The Louisiana Connector Project, along with the Texas Connector Project facilities proposed in this proceeding, will be the primary means of delivery of feed gas to the Liquefaction Project. Both projects are needed to provide service to the Liquefaction Project and will allow flexible access to multiple supply basins and systems of upstream transporters. Combined, the projects will give more gas sellers access to Port Arthur LNG and Port Arthur LNG access to more supply basins. The proposed **Port Arthur Pipeline Project** would consist of two segments oriented north and south of the proposed liquefaction project. The 27.6-mile northern portion of the proposed pipeline project would extend from Vidor in Orange County, TX to the proposed liquefaction project, with the majority of the proposed pipeline co-located with existing energy infrastructure rights-of-way. The approximately 7-mile southern portion of the proposed pipeline project would originate in Cameron Parish, Louisiana on the east bank of Sabine Lake and terminate at the Port Arthur Liquefaction Project. The proposed pipeline project would interconnect the Port Arthur Liquefaction Project to various intra- and interstate pipelines, providing access to a number of major U.S. natu-

ral gas supply basins. Construction is expected to begin in the third quarter of 2021, with commercial operations expected to begin in third quarter of 2022.

The staff of the FERC has prepared a Final Environmental Impact Statement (FEIS) for the **Rio Grande LNG Project** proposed by Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC. RG LNG is requesting authorization to construct and operate liquefied natural gas (LNG) export facilities in Cameron County, Texas and to construct, operate, and maintain a new pipeline system in Jim Wells, Kleberg, Kenedy, Willacy, and Cameron Counties, Texas. The FEIS addresses the potential environmental effects of the construction and operation of the following proposed facilities: six liquefaction trains at the Rio Grande LNG Terminal, each with a nominal capacity of 4.5 million tons per annum of LNG for export, resulting in the total nominal capacity of 27.0 million tons per annum; four LNG storage tanks, each with a net capacity of 180,000 cubic meters; LNG truck loading facilities with four loading bays, each with the capacity to load 12 to 15 trucks per day; a refrigerant storage area and truck unloading facilities; a condensate storage area and truck loading facilities; a new marine slip with two LNG vessel berths to accommodate simultaneous loading of two LNG vessels, an LNG vessel and support vessel maneuvering area, and an LNG transfer system; a materials off-loading facility; 2.4 miles of 42-inch-diameter pipeline, including 0.8 mile of dual pipeline, to gather gas from existing systems in Kleberg and Jim Wells Counties (referred to as the Header System); 135.5 miles of parallel 42-inch-diameter pipelines originating in Kleberg County and terminating at the Rio Grande LNG Terminal in Cameron County (referred to as Pipelines 1 and 2); four stand-alone metering sites along the Header System; two new interconnect booster compressor stations, each with a metering site; three new compressor stations (one at the LNG Terminal site); and other associated utilities, systems, and facilities (yards, access roads, etc.) Final FERC approval is anticipated in late summer 2019.

Sempra Energy announced that its subsidiary, **Port Arthur LNG, LLC**, received authorization from the FERC to site, construct and operate its natural gas liquefaction-export facility under development in Jefferson County, Texas. The Port Arthur LNG project is expected to include two liquefaction trains, up to three LNG storage tanks and associated facilities that will enable the export of approximately 11 million tonnes per annum (Mtpa) of LNG. The FERC order also approved the construction of the Texas and Louisiana connector pipeline projects that will provide natural gas transportation for the new liquefaction facilities. In December 2018, Port Arthur LNG and the Polish Oil & Gas Company signed a definitive 20-year sale-and-purchase agreement for two Mtpa of LNG from the Port Arthur LNG project, subject to certain conditions. Last year, Sempra LNG selected

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Bechtel as the engineering, procurement, construction and commissioning contractor for the project, subject to reaching a definitive agreement. Port Arthur LNG received authorization from the Department of Energy (DOE) in August 2015 to export domestically produced natural gas to countries with which the U.S. has free trade agreements and has a pending application to export natural gas to non-free trade agreement countries. Development of the Port Arthur LNG project is contingent upon obtaining additional customer commitments, completing the required commercial agreements, securing all necessary permits, obtaining financing, incentives and other factors, and reaching a final investment decision. Sempra LNG develops, builds and invests in natural gas liquefaction facilities and is pursuing the development of five strategically located LNG projects in North America with a goal of delivering 45 Mtpa of clean natural gas to the largest world markets, making Sempra Energy one of North America's largest developers of LNG export facilities.






Spire Storage proposes to construct and operate 10.1 miles of dual 20-inch-diameter pipelines, one new pipeline interconnection with measurement equipment, and related facilities in Uinta County, Wyoming. Project is pending FERC approval.

Summit Permian Transmission, LLC has received a notice of Intent to Prepare an Environmental Assessment from the FERC for the planned **Double E Pipeline Project** in New Mexico and Texas. An official project FERC filing was expected in March 2019 for the project. The scope of facilities currently includes the following: approximately 34 miles of new 30-inch pipeline (Trunkline 100 or T100) from Summit's existing Lane Processing Plant in Eddy County, New Mexico to a planned Poker Lake Compressor Station site, also in Eddy County. In addition to the trunkline, this portion of the project would include: one 30-inch pig launcher and one receipt meter located within the Lane Processing Plant; and two mainline block valves; one new compressor station (Poker Lake Compressor Station), sited on approximately 70 acres on federal land managed by the U.S. Bureau of Land Management, in Eddy County. The new compressor station would require two Taurus 70 turbine-driven compressor units, totaling about 22,200 horsepower. Associated facilities would include one 42-inch pig launcher; one 30-inch pig receiver; and one receipt meter located at the Poker Lake Compressor Station site with an expected volume of 175 million standard cubic feet per day; approximately 81.1 miles of new 42-inch pipeline (Trunkline 200 or T200) from the planned Poker Lake Compressor Station; through Loving, Ward, and Reeves Counties, Texas and terminating at the Waha Pigging Station in Reeves County, Texas. In addition to the trunkline, this portion of the project would include: four mainline block valves; and one

42-inch pig receiver, located within the Waha Hub Pigging Station site; approximately 17.3 miles of new 30-inch pipeline (Lateral 100 or L100) from the existing Loving Processing Plants to the planned trunk-line in Eddy County, New Mexico. Additional facilities would include: one 30-inch pig launcher; one 30-inch pig receiver; and three receipt meters, including: one receipt meter to serve the new Sendero Midstream Partners Plant, currently under construction; one receipt meter to serve the existing Matador Resources Company's Plant; and one receipt meter to serve the new Lucid Energy Group Road Runner Plant, currently under construction; approximately 1.4 miles of new 42-inch trunkline (Trunk-line 300 or T300) from the planned Summit Waha Pigging Station site in Reeves County, Texas to the final delivery locations in the Waha Hub in Pecos, County, Texas. Aboveground facilities would include: one delivery meter to serve Kinder Morgan's Permian Highway Pipeline, currently under construction; one delivery meter to serve Kinder Morgan's existing Gulf Coast Express Pipeline; and one delivery meter to serve Energy Transfer Company's existing TransPecos Pipeline header pipeline. Summit anticipates initial construction activities to begin in April 2020, with a planned in-service date of April 2021.


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Tallgrass Energy, LP, through its affiliate Tallgrass Pony Express Pipeline, LLC, announced it has extended and expanded its open season soliciting shipper commitments for crude oil transportation service from origins in Wyoming and Colorado to refinery destinations along the Pony Express system and to Cushing, Okla., to reflect updated rates and contracting options to accommodate newly secured commitments. The open season, initially announced on Nov. 13, 2018, was extended to April 14, 2019. Company officials expect the expansion to be staged over the next two years, with full-in service in Q3 2020.

Tallgrass Energy - The Cheyenne Connector Project is a 70-mile, large-diameter interstate natural gas pipeline designed to move natural gas from receipt connections at processing facilities in the Denver-Julesburg Basin (DJ Basin) in Weld County to the Rockies Express Pipeline Cheyenne Hub (REX Cheyenne Hub) just south of the Colorado/Wyoming border. Using Cheyenne Connector, producers in the DJ Basin can access interconnected pipelines and local distribution systems at the REX Cheyenne Hub as well as interconnected systems downstream of REX that reach end-users in West markets, Midwest markets such as Chicago and Detroit, the Gulf Coast and Southeast. End users in those markets benefit from diversity of supply and resulting competitive pricing. The Cheyenne Connector has an expected initial design capacity of 600 million cubic feet per day of natural gas and potential room for expansion. Affiliates of Anadarko Petroleum Corporation and DCP Midstream have signed precedent agreements for a combined 600 million cubic feet per day of natural gas on Cheyenne Connector. Cheyenne Connector is expected to be in service in Q3 2019, subject to approval by the FERC and other applicable approvals. Pending approval, the project could get underway with construction in April or May 2019.

Tallgrass Energy - The REX Cheyenne Hub is an existing natural gas facility owned and operated by Rockies Express Pipeline in northern Weld County, just south of the Colorado-Wyoming border. At the Hub, the existing Rockies Express Pipeline intersects and/or connects with numerous other natural gas pipelines. The REX Cheyenne Hub Enhancement Project consists of modifications to the REX Cheyenne Hub to accommodate firm receipt and delivery interconnectivity among multiple natural gas pipelines with various operating pressures and will provide customers significant diversity in terms of market access. Using Cheyenne Connector producers in the DJ Basin can access interconnected pipelines and local distribution systems at the REX Cheyenne Hub as well as interconnected systems downstream of REX that reach end-users in West markets, Midwest markets such as Chicago and Detroit, the Gulf Coast and Southeast. End users in those markets benefit from diversity of supply and resulting competitive pricing. FERC approval is anticipated in March 2019 with

construction start anticipated in April or May 2019.

Tallgrass Energy, LP - The proposed **Seahorse Pipeline** is expected to be 30 inches in diameter and approximately 700 miles long, with the capacity to transport up to 800,000 barrels of crude oil per day from the Cushing oil hub to the Louisiana Gulf Coast. The pipeline will operate as a multi-grade common batch system that, along with Tallgrass' Pony Express Pipeline, will ensure domestic refiners and international markets have access to "neat" barrels from five different production basins. Seahorse is expected to start commercial operations in the third quarter of 2021. In addition, to accommodate shipper interest and continued growth in the Powder River, Denver-Julesburg and Bakken producing regions, Tallgrass expects to complete pump optimization projects to expand capacity on its Pony Express Pipeline to enable it to transport up to 400,000 barrels per day by the end of the year. If shipper interest exceeds that added capacity, Tallgrass may expand the Pony Express Pipeline further through potential additional horsepower and/or looping to facilitate large-scale movements from Guernsey and northeast Colorado. The Seahorse Pipeline open season was extended until March 31, 2019.

Targa Resources Corp. NextEra Energy Pipeline Holdings, LLC, an indirect, wholly-owned subsidiary of NextEra Energy Resources, LLC; WhiteWater Midstream, LLC, a portfolio company of Denham Capital Management and Ridgmont Energy Partners; and MPLX LP, announced the execution of a letter of intent (and associated term sheets) for the joint development of the proposed **Whistler Pipeline Project**, which will provide an outlet for increased natural gas production from the Permian Basin to growing markets along the Texas Gulf Coast. The Whistler Project is designed to transport approximately 2.0 billion cubic feet per day of natural gas through approximately 450 miles of 42-inch pipeline from Waha, Texas to NextEra's Agua Dulce market hub, with an additional approximately 170 miles of 30-inch pipe continuing from Agua Dulce and terminating in Wharton County. Supply for the Whistler Project will be sourced from multiple upstream connections in both the Midland and Delaware Basins, including direct connections to Targa plants through an approximately 27 mile 30-inch pipeline lateral, as well as a direct connection to the 1.4 Bcf/d Agua Blanca Pipeline, a joint venture between WhiteWater, WPX Energy, MPLX and Targa, which crosses through the heart of the Delaware Basin, including portions of Culberson, Loving, Pecos, Reeves, Winkler, and Ward counties. The Whistler Project would have access to the Nueces Header and premium markets at Agua Dulce, as well as along a northern extension through Corpus Christi to the Houston Ship Channel to serve markets along the Texas Gulf Coast. Targa, NextEra, MPLX and WhiteWater (and their respective producer customers) would collectively commit volumes in excess of 1.5 Bcf/day to the Whistler

Project. The Project would begin operation in the fourth quarter of 2020, subject to execution of definitive agreements and the receipt of necessary regulatory approvals. The named parties have committed to be exclusive to the Project for a period of time sufficient to complete definitive agreements. The Whistler Project will be constructed by NextEra Energy Pipeline Holdings and operated by Targa. The Project is expected to be financed at the project level. In addition to the commitments of the project sponsors and their producer customers, the Whistler Project is in negotiations for additional firm transportation commitments and is expected to launch an open season in the coming months with respect to any remaining firm intrastate transportation capacity.

The staff of the FERC has prepared a Final Environmental Impact Statement (EIS) for the **Texas LNG Project**, proposed by **Texas LNG Brownsville, LLC**. Texas LNG is requesting authorization to site, construct, modify, and operate liquefied natural gas (LNG) export facilities on the Brownsville Ship Channel in Cameron County, Texas. The Texas LNG Project consists of a new LNG terminal on the north side of the Brownsville Ship Channel, 2.5 miles southwest of the Town of Port Isabel, Texas and 19 miles northeast of the City of Brownsville, Texas population center. Texas LNG would construct the LNG terminal on a 625-acre parcel owned by the Brownsville Navigational District, with an additional 26.5 acres necessary outside of the parcel within the banks of the Brownsville Ship Channel to allow for deep water access to the Brownsville Ship Channel. The project consists of the following facilities: a gas gate station and interconnect facility; a pretreatment facility to remove water, carbon dioxide, hydrogen sulfide, mercury, and heavier (pentane and above) hydrocarbons; a liquefaction facility consisting of two liquefaction trains and ancillary support facilities; two approximately 210,000 cubic meter (m³) aboveground full containment LNG storage tanks with cryogenic pipeline connections to the liquefaction facility and berthing dock; an LNG carrier berthing dock capable of receiving LNG carriers between approximately 130,000 m³ and 180,000 m³ capacity; a permanent offloading facility to allow waterborne deliveries of equipment and materials during construction and mooring of tug boats while an LNG carrier is at the berth; a thermal oxidizer, warm wet flare, cold dry flare, spare flare, acid gas flare, and marine flare; and administration, control, maintenance, and warehouse buildings and related parking lots; electrical transmission line and substation, water pipeline, septic system, and stormwater facilities/outfalls. Natural gas would be delivered to the Texas LNG Project site via a non-jurisdictional, intrastate, 30-inch-diameter natural gas pipeline that would be constructed, owned, and operated by a third party, separate from Texas LNG. Final FERC decision on the project is expected in July 2019.

Transcontinental Gas Pipe Line Company is underway with its **Rivervale South to Market Project** in Bergen, Hudson, and Union Counties, New Jersey. The project would include constructing 0.61 miles of 42-inch-diameter pipeline loop along Transco's Mainline A (Bergen County); upgrading 10.35 miles of the existing 24-inch-diameter North New Jersey Extension from the Paramus M&R station (Bergen County) to the Orange and Rockland M&R station (Bergen County). The North New Jersey Extension will be upgraded from a maximum allowable operating pressure of 650 pounds per square inch gauge ("psig") to 812 psig; upgrading the existing valves, including overpressure protection valves, and yard piping, and related activities at the Paramus, Central Manhattan, Orange and Rockland, and Emerson M&R stations; and construction of additional facilities, such as mainline valves, cathodic protection, internal inspection device launchers and receivers, and communication equipment. Pipeline loop construction will begin in summer/fall 2019. Tentative scheduled in-service date is winter 2019/2020.

Venture Global Plaquemines LNG, LLC (Plaquemines LNG) and Venture Global Gator Express, LLC (Gator Express Pipeline) have received a favorable Environmental Impact Statement from the FERC to construct a liquefied natural gas (LNG) export terminal and pipeline facilities located in Plaquemines Parish, Louisiana. Together the proposals are referred to as the **Plaquemines LNG and Project** or Project. Plaquemines LNG and Gator Express Pipeline are proposing to construct and operate a new LNG export terminal and associated facilities along the west bank of the Mississippi River in Plaquemines Parish, Louisiana (Terminal) and to construct and operate two new 42-inch diameter natural gas pipeline laterals that will connect the Terminal to the pipeline facilities of Tennessee Gas Pipeline Company and Texas Eastern Transmission. The two parallel and adjacent laterals (11.7 and 15.1 miles long) would be operated at an MAOP of 1,200 pounds per square inch and will be designed to provide firm transportation capacity of approximately 1,970,000 Dt/d to the Terminal. Total cost of the pipeline portion of the project is estimated to be approximately 284 million dollars.

Williams/Northwest Pipeline, LLC has received the green light of approval from the FERC to proceed with the removal, replacement, and lowering of 1,700 ft. of 30-inch diameter natural gas pipeline and the removal of 1,550 ft. of abandoned 26-inch diameter pipeline within the north Fork of the Nooksack River in Whatcom County, Washington. The project is expected to take 14-17 weeks.

Williams announced that it is initiating a binding open season from March 8 to April 8, 2019, for Regional Energy Access, an incremental expansion of the Transco interstate pipeline to provide firm natural gas transportation capacity

PROPOSED PROJECTS & UPDATES

to markets in the northeastern United States as early as November 2022. **Regional Energy Access** is being designed to provide up to one million dekatherms per day of firm transportation capacity to the Transco pipeline's northeast market, including existing Pennsylvania and New Jersey local distribution companies and power generators. Demand for natural gas in the Northeast continues to rise as businesses rely on natural gas to help meet clean air goals. Regional Energy Access minimizes environmental impacts by maximizing the use of existing Transco pipeline infrastructure and rights of way. The preliminary design of the project consists of additional compression and selected pipeline loop segments along the existing Transco pipeline corridor. Although the final capacity, scope and cost of the project will be determined by the results of the open season, it is anticipated that the project will include approximately 34 miles of pipeline looping and additional compression along existing Transco facilities. The project will connect robust Marcellus supply from receipt points along the Transco pipeline's Leidy Line in Luzerne County, Pennsylvania, to delivery points in Pennsylvania and New Jersey, including the Station 210 Zone 6 Pool in Mercer County, New Jersey, the Lower Mud Run Road interconnect in Northampton County, Pennsylvania, and along Transco's mainline to Station 200, Marcus Hook lateral and Trenton Woodbury lateral. The proposed project will be subject to approval by the FERC and other agencies.

Williams Partners L.P. has an application before the FERC seeking authorization for its **Southeastern Trail**

Expansion project, which would create 296,375 dekatherms per day of additional firm transportation capacity to markets in the Mid-Atlantic and Southeastern U.S. for the 2020/2021 winter heating season. Williams Partners has executed precedent agreements with utility and local distribution companies located in Virginia, North Carolina, South Carolina and Georgia for firm transportation service under the project. Once complete, the project will help meet the growing natural gas demand in the Southeast, as well as provide access to new sources of domestic natural gas supply while enhancing system reliability. The company held an open season for the project last summer and executed long-term binding precedent agreements with five natural gas shippers for 100 percent of the firm transportation capacity. Customers served by the project are PSNC Energy, South Carolina Electric & Gas, Virginia Natural Gas, the City of Buford, Ga., and the City of LaGrange, Ga. Subject to approval by the Federal Energy Regulatory Commission, the Southeastern Trail Expansion project will consist of approximately 7.7 miles of 42-inch pipeline looping facilities in Virginia, horsepower additions at existing compressor stations in Virginia, and piping and valve modifications on other existing facilities in South Carolina, Georgia, and Louisiana to allow for bi-directional flow. The project is anticipated to begin construction in August 2019 with a target in-service commitment of Nov. 1, 2020.

Texas Will Need An Additional 10,950 Miles of Oil and Gas Pipelines



Texas will need an additional 10,950 miles of oil and gas pipelines to accommodate rising production over the years to 2050, an IHS Markit study quoted by S&P Global Platts has suggested.

The Lone Star state is home to three of the most prolific oil and gas deposits in the United States, including the Permian, the Eagle Ford, and the Barnett shale. Gas production from these alone will reach its peak somewhere between 2030 and 2040, at a daily rate of almost 35 billion cu ft before it starts to decline. However, there are not enough pipelines to carry the gas that will be produced in Texas.

The situation is the same in oil. The Texas shale patch is already experiencing problems because of pipeline shortages coming against steadily rising produc-

tion, with the rise particularly marked in the Permian, where the Energy Information Administration expects the average daily to hit 4.177 million bpd next month. According to IHS Markit, this will further expand to 5.5 million bpd by the middle of next decade.

Since most of the gas produced in Texas is associated gas from oil fields, it's no surprise that, according to the IHS Markit study, the largest portion of the new pipeline capacity that needs to come on stream to carry the rising flows of hydrocarbons in Texas would be for oil pipelines. These will comprise 47 percent of the total. Another 29 percent of the new pipeline networks would carry gas, the market research firm said, and the rest would be for natural gas liquids.

However, that's not all. This production growth will spur demand for more processing capacity on the Gulf Coast. Existing refineries would need to be expanded and new ones built, and ports will also need to be expanded to handle the higher export-bound amounts of crude oil and gas heading to world markets.

PipeLine Machinery

PML Announces Personnel Changes in EAME



PipeLine Machinery International (PLM) announces the retirement of **Gerald (Gerry) Grothe** effective April 1, 2019.

For more than forty years, Gerry has been in the heavy equipment sales and rental business with the majority of this time focused on the pipeline industry. Gerry began his career with Fabick Tractor in

1975 when the Alaska pipeline was under construction. This early exposure to pipeline work was just the beginning of a long and successful career that included the development of many long-term relationships with pipeline contractors in the U.S. and internationally. Throughout his career, Gerry has been actively involved with the International Pipe Line & Offshore Contractors Association (IPLOCA), serving several terms on the board of directors. One of the original employees of PLM when it opened its doors in 2005, Gerry has been instrumental in the development of PLM as the global Cat® dealer for pipeline equipment. Since then Gerry has traveled the world promoting PLM and Caterpillar®, leveraging his significant experience in the international pipeline business and a host of long earned relationships with contractors and local dealers to close deals on nearly every continent. Gerry's hard work and dedication has been a major factor in the growth and success of PLM over the past 14 years. PLM's employees and partners feel privileged to have worked with Gerry and sincerely thank him for his outstanding contributions to the company and the pipeline industry.



Sean McNally joined PLM on May 22, 2017 as the Director of Business Development for the EAME (Europe, Africa and Middle East) region and has been working with Gerry Grothe since that time to understand the market and dealer landscape as well as develop customer relationships. As of April 1, 2019, Sean will assume all sales and business development responsibilities for this region.

Sean graduated from Miami University, Oxford, OH, in 2000 with a Bachelor of Science in Marketing from the Richard T. Famer School of Business. Prior to PLM Sean worked eleven years for Hayes Performance Systems (HB), headquartered in Milwaukee, Wisconsin with nine of those years living abroad. Hayes Performance Systems designs and manufactures braking and suspension components, systems and technologies for non-automotive applications including motorcycles, snowmobiles, all-terrain vehicles, utility vehicles, bicycles, construction, agricultural, industrial and military equipment. Hayes customers include Caterpillar, the US Military, Harley-Davidson, TREK and BMW to name a few.

Sean's experience includes Director of Business Development for HB's Asia Operations residing in Taiwan for five years and for their European operations residing in Munich, Germany for four years. Sean was later the Director of Global Sales, Marketing, and Tech Services for the Bicycle Division of Hayes Performance Systems and its brands.

Sean and his family reside in The Hague, Netherlands, PLM's EAME headquarters.

The company's worldwide activities are currently supported through the corporate office in Cypress, Texas, USA; Nisku, Alberta, Canada; The Hague, Netherlands; Beijing, China; and Melbourne, Australia.

For further information regarding this news release, contact PLM-Cat Marketing & Communications Manager, Dawn Otero, at dotero@plmcat.com or by telephone +1-713-939-0007.

Additional information is available on the PLM website at <https://plmcat.com>.



Trump Moves To Ease Barriers To Natural Gas Pipeline Construction



On April 10, 2019 President Trump signed two executive orders meant to eliminate hurdles to new and existing natural gas pipeline construction across the U.S.

"In a few moments I will sign two groundbreaking executive orders to continue the revival of the American energy industry, and will cut through destructive permitting delays and denials,"

Trump said at an event with engineers in Texas, before signing the two orders. "Where it will take you 20 years to get a permit, those days are gone."

The actions aim to boost energy infrastructure and remove specific barriers blocking existing plans for cross-country natural gas transportation and interstate pipeline construction.

Speaking at the International Union of Operating Engineers International Training and Education Center in Crosby, Texas, Trump called the presidential orders "groundbreaking" measures to "continue the revival of the American energy industry."

"We made a lot of progress in the last 2 1/2 years, haven't we? We took down a lot of barriers to production and the pumping," Trump told the crowd.

The orders specifically take aim at key pipeline hold-ups, such as on the Constitution Pipeline, a 124-mile natural gas pipeline project from Pennsylvania to New York.

The project received a federal permit in 2014 but has since been halted by state regulators. New York has refused to issue a key water permit to begin construction, arguing the pipeline would threaten groundwater reserves, which the state has the ability to regulate under the Clean Water Act (CWA).

One of the new executive orders will specifically limit such environmental reviews of the projects. Specifically, it will direct the Department of Energy (DOE) and the Environmental Protection Agency (EPA) to clarify a section of the CWA that gives states authority over their water quality permits.

Environmental groups and Democratic lawmakers were quick to push back on the president's plan, arguing the move threatened state powers.

The second executive order will focus on easing restrictions for cross-state transport of crude oil and natural gas. It will ask the Department of Transportation to create a new rule that would classify liquified natural gas (LNG) similarly to other cryogenic liquids, which would newly allow it to be shipped via train. Critics have long maintained that cross-country LNG rail transport poses significant environmental and safety concerns, as trains have in the past fallen off tracks and caused deadly outcomes.

The official said the LNG safety standards determined 40 years ago bear "little resemblance" to larger facilities that exist in the U.S. today.

The presidential orders also give Trump consolidated powers to scrutinize any potential environmental impacts of pipeline construction. The State Department until now has held those powers. Under the new order, the department will instead advise the president on the projects 60 days after a pipeline application is received.

"The president's Executive Order clarifies that any decision to issue any cross border permit shall be issued only by the president," the White House official said.

Last year the U.S. became the top producer of LNG globally, a fact Trump highlighted in his speech on Wednesday.

"With the help of the incredible workers in this room, the United States is now the number one producer of oil and natural gas, anywhere in the world, anywhere on the planet," he said.

Trump recently issued a new presidential permit for the construction of the Keystone XL pipeline with a facility in Montana, a move seen as a way to circumvent previous court orders halting development.

The order superseded a March 2017 permit that was invalidated by a Montana federal judge in November. The ruling is being appealed in the 9th Circuit Court of Appeals. Separately, a December lawsuit placed an injunction on most pre-construction activities.



Willis High senior Grace Hoegemeyer crowned 2019 Montgomery County Fair Queen

Courtesy of The Courier of Montgomery County

With equal amounts shock and pride, the 2019 Montgomery County Fair Queen stepped forward from a lineup of 16 other contestants — all of them clasping hands in nervous excitement — to claim the title that's now hers for the year.

In the middle of the Woodforest Bank Arena in Conroe Saturday night, March 30th, thousands of fans cheered as Grace Hoegemeyer, a 17-year-old from Willis High School, wore her crown for the first time.



"I was in utter shock," Hoegemeyer said after the crowning. "I was so happy, it was overwhelming. I'm just so excited to start this journey. It's been such a good build-up. Now is the first step in moving forward in a great year."

As queen, she'll be the ambassador for the fair during her reign. It's fitting, because she said when she was younger, she always looked up to the fair queens. She also cited the county's fair as helping her develop values such as morals, community, family and accountability.

"I'm so thankful and grateful to everyone who has helped me. I want to inspire the younger generations; I think that's so cool. I want to inspire the little kids in our community," Hoegemeyer said.

Hoegemeyer's sponsor was Fullerton Orthodontics, and she received a \$3,500 scholarship along with the crown and title. Outside of fair activities, she's involved in student council and the National Honor Society along with being a cheerleader at her high school.

The county's outgoing 2018 Fair Queen, Kelley Anne Roland, a Conroe home-schooled student, addressed the crowd for the last time with emotion just before she gave her crown to Hoegemeyer.

"As I come to the end of my reign, I am overwhelmed by joy and gratitude for the past year. This has been an unforgettable journey that I will cherish for the rest of my life," Roland said. "It has truly been an honor and privilege to serve as the ambassador for the county fair."

As far as this year goes, if Hoegemeyer cannot fulfill her duties at any point, the runner-ups step in. Shelby Denton from Splendora High School, sponsored by the Hoppes Family, won first runner-up. She'll receive a \$2,500 scholarship. Marie Yanchak, of Magnolia High School and sponsored by the Walling Family, won second runner-up and will receive a \$1,500 scholarship.



The Miss Congeniality award went to Claire Folwell, from The Woodlands College Park High School and sponsored by Harmony Complete Care LLC. Her peer contestants selected her to receive that title, for which she'll also get a \$1,000 scholarship.

This was the final event in a many months-long process leading up to the crowning. The contestants had to submit their applications and essays last year, attend meetings and work together to build a float for the Go Texan Parade. Saturday, they began their day with breakfast with the judges, all of whom are from outside the county. The judges then held personal interviews with the contestants in addition to hearing their prepared speeches. Judges considered poise, personality and investment in and general knowledge of the Montgomery County Fair Association when selecting the Fair Queen and runner-ups.

Grace is the granddaughter of Harold Gene and Pat Wells.



Michael Eugene Dodson was born September 9, 1949 in Holdenville, Oklahoma to Gene & Mary Ella 'Pat' (Poe) Dodson. He went to rest high on the mountain. His work was done on March 19, 2019, at the University of Texas Southwest Medical School in Dallas, Texas. Mike graduated Wetumka High School in 1967 and enlisted in the United States Marines, where he served two tours of duty in Vietnam. He married Janet Thompson on January 31, 1975, in Perryton, Texas. He worked in various feed yards and pipelining, and for many years as maintenance man for Hardesty Schools in Hardesty, Oklahoma, before returning to pipelining as a welding inspector. Mike survived a lung transplant on August 29, 2018, but after that, severe leukemia surfaced. His Marine spirit usually helped him fight, but this was an insurmountable battle. Survivors include his wife of 43 years, Janet; his two sons; Cole and wife Michelle and son Hunter, of Atlanta, Texas, and younger son Ty and wife Kristina and son William, of Meeker, Oklahoma. He is also survived by two sisters, Sharon Dodson Hall and Sue Dodson; and a special cousin, Jimmie Yeats. He is preceded in death by his parents, Gene & Pat Dodson; and his sister, Jo Ann Dodson Henslee.

Bobby Gene Gillespie received his heavenly wings accompanied by singing angels on April 2, 2019 from the Eden Hills Willows in New Braunfels, TX, where he left dementia. Bobby was born October 22, 1938 in Refugio County, Texas, one of 10 children of Raymond and Frieda Gillespie. Bobby spent his career in the oil & gas industry, first as a roughneck on a drilling rig, then at Coastal States in 1962, retiring from Valero in 1982. He was partner/owner in several oil and gas transportation companies in Corpus Christi, TX area until 2004. From 1999 until 2011, he worked as a pipeline inspection contractor, taking him and his wife, Tommie, to work together on projects in several states. Bobby always said you just can't get pipelining out of your blood. Bobby had several hobbies, farming which was a job but became enjoyable, woodworking, building, tinkering, tractor mowing, breaking and rebuilding... reworking many projects with his hoarded materials that might be needed as not to have to travel to town to buy. He could fix anything with old wire, duct tape, or a contraption he might have invented. Bobby enjoyed playing music; guitar and harmonica, or accordion at family get-togethers. He liked watching the little ones observe him and want to participate. In 1960, Bobby married Sandra Jean Haertig and raised 3 children, mostly in Woodsboro, until 1995. Bobby leaves behind a wife, Tommie Gillespie, where they resided in New Braunfels, TX since 2015; a daughter, Rene Gillespie (Larry) Law residing in Gotebo, OK; son, Jeff Gillespie (Tina) of Woodsboro, TX, and son Jason Gillespie (Molly) of Portland, TX; a step daughter, Tera (Regan) Foster of San Antonio; and step son Thomas Lankford of Houston, TX; 8 grandchildren; 5 step grandchildren; and 11 great-grandchildren. A sister, Bo (Valla Lee) Brown of La-

Fayette, LA; a sister, Biddie (Vida Marcelle) Hilman of Port O'Connor, TX, Peggy Joy Longmire of Woodsboro, TX; and a brother, Buddy (Raymond Ray) Gillespie of Woodsboro, TX. A sister in law, Dina (Darryll) Howerton of Dallas, TX and Rusty (Holly) Reichert of Cypress, TX; and numerous nieces and nephews. Late brothers, Vernon Earl, Norman Fuzzy William, and Milton Alvin (Mary) Gillespie, and late sisters Audrey Vivian Vickers and Tiny (Ellna Louise) McAdams. Bobby Gillespie was a bigger than life, quiet, gentle, generous, a little quirky and a very loved man with the biggest hands ever seen and with funny wit he kept till the end. Bobby will be missed!

Michael Shane Lemmings was born on April 18, 1973 and passed away on Sunday, April 7, 2019. Michael was a resident of Konawa, Oklahoma at the time of passing. He attended Konawa schools, and he was a certified welding inspector for the pipeline industry.



Service for **Glen L. Matlock**, 66, of Muldrow was held April 22, 2019. He was born March 16, 1953, in Fort Smith to Mary Shirley Dell (Flippin) Matlock and Leo Phillip Matlock and passed away April 17, 2019, in Muskogee, Okla. Mr. Matlock was a pipeliner and a U.S. Air Force veteran. He is survived by his beloved sis-

Linda K. Breedlove of Muldrow; the love of his life, Barbara Matlock of Dardanelle; two sons, Christian L. Matlock of Greenwood and Phillip Glen Matlock and Claire Marie of Dora; grandchildren, Ethan Wayne Matlock, Emma Nicole Matlock, Taylor Neilson Matlock and Maisie Faith Matlock; sister, Shirl Gray of Muldrow; and numerous nieces, nephews, other relatives and friends. He was preceded in death by his parents and two brothers, Phillip and Richard Lee Matlock.



Funeral services for **Shawn Lee Copeland**, 38, of Rayville, LA were held at March 27, 2019 at Rowland Road Baptist Church, Monroe, LA. with Bro. John Yates officiating. Interment followed in the Prewitt Cemetery, Mangham, LA under the direction of Brown-Holley Funeral Home, Rayville. Shawn was born February 5, 1981 in Monroe, LA and passed away on Saturday, March 23, 2019 in Winnsboro, LA. Shawn is preceded in death by his parents, Tommy and Mary Jane Copeland; and his uncle, Tracy Munholland. Survivors include his daughters, Taylor Copeland Beavers and husband, Dylan of West Monroe, LA, Cameron Copeland Hartman and husband, George of Rayville, LA; sons, Christian Copeland and Trenton Copeland of Monroe, LA. grandson, Emerson Hartman of Rayville, LA; former spouse, Taysha Copeland of Monroe, LA.; brother, Brian Copeland of Bossier City,

LA. and sister, Alisha Copeland of Monroe, LA. Pallbearers were Ryan Bichsel, Blake Cooper, Randy Windham, Derek Munholland, Justin Bradshaw, Billy Bob Remore, Alex Bell, and Larry Plummer.



Frances O'Neal Stone, 50, of Moundsville, WV died March 20, 2019 from injuries sustained in a motor vehicle accident in the Camp Creek area of the West Virginia Turnpike. Born January 9, 1969 in Bastrop, LA he was the son of the late Vernon and Doris Stone. Frances was a pipeline operator and member of the International Union of Operating Engineers #406. He attended Proctor Christian Church in Proctor, WV. He is survived by his children, Zack Stone and Kayla Stone both of Florida; brothers, Donnie J. Stone of Louisiana; Vernon O'Dell Stone of Bastrop, LA, and Richard Stone of Hope, AK; and his fiancée, Darlene Allman of Moundsville, WV. In keeping with his wishes his body has been cremated and there will be no service.

Elliott "E. L." Miles, Jr., age 74, passed away March 31, 2019, at his residence in Louisville, Mississippi. He was a retired welder and inspector.



Larry "Don" Walters, age 74, of Odessa passed away peacefully at his home on Friday, March 29, 2019. He was surrounded by his loved ones and devoted dog, Dixie. He was born in Walters, OK to Lloyd and Delilah Walters on October 26, 1944. He married Sandra Jean Wood in Odessa on March 17, 1962 and they had just celebrated 57 years together. Our dad's greatest passions in life were his wife, his family and pipelining. He worked hard all of his life. A young husband and father by 17, he knew the fate of his family rested on his shoulders. He stepped up to that responsibility and took care of us all in whatever way he could until he took his last breath. Even in his last moments, his thoughts were for the love and lives of his family. He showed his devotion to our mother, Sandy, by caring for her at home as long as it was possible. He was nearly as devoted to his job of pipelining, retiring only to take care of mom. He could talk pipelining to anyone that wanted to. He could rehash jobs of the past and discuss jobs of the present. Dad was an avid gardener and he loved fishing. One of his greatest joys was catching a 56 pound record breaking Blue Cat out of Lake Spence. (He had the certificate to prove it!) He enjoyed classic cars, and quirky as it sounds, shelling pecans, even earning the name, "Pecan Don." Daddy will always be remembered as a hardworking, family man. He was preceded in death by his parents, Lloyd and Lucy Walters; and his older brother, Dale Walters. Those left

to cherish his love and memory are his wife: Sandra Jean Walters of Odessa; sons: Ronnie Walters and wife Sondra and Cody Walters, all of Odessa; daughters: Diana Patterson and husband Cecil of Odessa and Christie Landfried and husband Johnny of Axtell, TX; brothers: Cecil Walters and wife Ellen of Aztec, NM and Jackie McCain of Odessa; nine grandchildren; four great-grandchildren; and his beloved dog: Dixie.



Clarence Gale Bailes, age 74 of Grayson were held November 16, 2018 from the sanctuary of Pine Grove Apostolic Church with Rev. Heath Barnhill and Rev. Johnny Barnhill officiating. Interment followed in the Pine Grove Cemetery. Gale was born on November 8, 1944 in Columbia, Louisiana to the union of his parents, Clarence Levi Bailes and Cecil Bernice Campbell Bailes and he passed from this life on November 13, 2018 at his residence following an extended illness. Gale was surrounded by his loving family. He was preceded in death by his parents, by brothers: Kirby and Terry Bailes; and brother-in-law, Joe Strange. Gale was a member of the Pine Grove Apostolic Church. Gale also served his country proudly during the Vietnam era in the United States Army. Left to cherish a lifetime of memories are his wife of fifty years, Glenda Duke Bailes; son Cody and daughter-in-law Amy Bailes of Grayson; son Brannon Bailes of Grayson, daughters: Tonya and Tori Bailes of Grayson; brothers: Caston Bailes and wife, Miranda of Kentucky, Ronald Bailes and wife, Debbie of Grayson; sisters: Sue Strange of Grayson, Patricia Bailes of Arkansas and Connie Clements and husband, Lewis of Arkansas; grandchildren: Johnathan Wilks, Hannah Crawford, Rachael and Debra Bailes, Orren and Micah McMillon, Michaela Pruett, Dade McMullen and Mallory Bailes; his great-grandchildren: Alyssa, Hazley, Rowan, Zeplin, Parrish, Levi and Waylon; and his "boys" he called his own, Stephen Braddock of Grayson, Jason Hatten of Grayson and Dalton Dennison of Kelly. Serving as pallbearers were Cody Bailes, Brannon Bailes, Johnathan Wilks, Orren McMillon, Dade McMullen and Micah McMillon. Honorary pallbearers will be Chance Grant, Stephen Braddock, Jason Hatten and Dalton Dennison. He had a fierce love for his family and his job. He was a line locator on the pipeline. He firmly believed in making a difference in people's lives. He took three young men under his wing and taught them his job. They've gone on to succeed and make him proud. They were forever his "boys", not by blood, but by heart.

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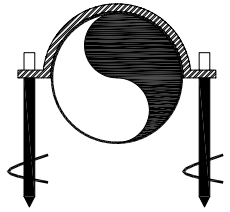
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