

Weekly E&P Update



January 10, 2023 Vol. 1

What's Up With Natural Gas Prices?

By Steve Hendrickson President of Ralph E. Davis Associates



Natural gas prices have softened quite a bit in the last month, so we'll look at some of the underlying fundamentals this week. The graph below shows the future prices for Henry Hub natural gas when we published the final edition of our newsletter in 2022 compared to where they stand currently. As you can see, prices have dropped more than \$1/MMBtu over the first year of the curve in just a few weeks.

On the supply side, US dry natural gas production continues to rebound from the dip that occurred during the height of the COVID pandemic, and is

running at record levels.

Gas in storage is running in line with historical trends. Note, however, that while there may have been concern about winter gas supplies last summer, that deficit largely evaporated after September when storage rates accelerated.

I believe a few factors are contributing to the recent price weakness. First, US gas production continues to grow. This growth may slow as prices moderate, but a lot of the change is associated with oil production and another large portion is from unconventional gas plays (Marcellus and Haynesville), where new wells continue to generate excellent returns. Secondly, we've had a mild winter, and there's not much winter left to drive increased demand. Although Natural Gas Intelligence expects a significantly larger storage draw for the week ending January 6, this month's draw may be the lowest for January in the last 10 years.

LNG exports had been a significant source of demand last year as European customers sought alternatives to Russian natural gas. They largely succeed in lining up those volumes, and thanks to a mild winter there, their storage is nearly full. As a result, LNG exports have been running about 10 BCF/day, which is down from almost 12 BCF/day prior to the fire at the Freeport LNG facility in June 2022. The latest news from the company is they expect to restart the facility very soon, but only after the second half of the month. Even so, it will likely come back online at a time of seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand, and I doubt it will immediately impact to the seasonally lower global demand to the s

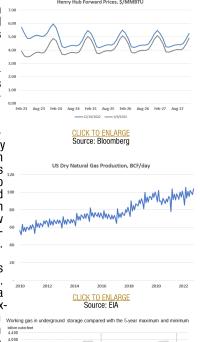


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Dallas





NYMEX FUTURE PRICING





MONDAY'S MARKET CLOSE

NYMEX WTI CRUDE OIL FUTURES as of January 09, 2023 Close (\$/bbl)

Period	Current	PoP Change	Last Period	1 Yr Ago	
2023	\$74.99	\$0.42	\$74.57	\$68.77	
2024	\$72.19	\$1.33	\$70.86	\$64.49	
2025	\$68.98	\$1.33	\$67.65	\$61.65	
2026	\$66.29	\$1.33	\$64.96	\$59.69	
2027	\$63.90	\$1.35	\$62.55	\$58.57	

NYMEX HH NATURAL GAS FUTURES as of January 09, 2023 Close (\$/MMBtu)

Period	Current	PoP Change	Last Period	1 Yr Ago
2023	\$3.84	(\$1.40)	\$5.24	\$3.51
2024	\$4.09	(\$0.63)	\$4.72	\$3.21
2025	\$4.21	(\$0.44)	\$4.65	\$3.13
2026	\$4.26	(\$0.40)	\$4.66	\$3.10
2027	\$4.30	(\$0.38)	\$4.68	\$3.12

INDUSTRY METRICS—QUICK SNAPSHOT

RY METRICS—QUICK SNAPSHOT	<u>Current</u>	<u>Last Week</u>	WoW Change	%Change
Crude Oil Near-Month Price (\$/bbl)	\$73.97	\$80.57	(\$6.60)	(8%)
Natural Gas Near-Month Price (\$/MMBtu)	\$3.76	\$4.39	(\$0.63)	(14%)
Weekly Upstream-Deal Transaction Value (\$MM)	\$120.00	\$15.80	\$104.20	659%
Weekly Number of Upstream-Deal Transactions	1	3	(2)	(67%)
Current Total US Rig Count	772	779	(7)	(0.9%)
US Field Crude Oil Production (MMbbl/day)	12.1	12.0	0.1	0.8%
US Field Dry Natural Gas Production (Bcf/day)	105.8	105.6	0.2	0.2%
Commercial Crude Oil Stocks-Excluding SPR (MMbbl)	421	418	2.4	0.6%
Natural Gas Stocks-Working Gas Underground Storage (Bcf)	2,891	3,112	(221)	(7%)
Total Drilled But Uncompleted Wells (DUC-Last Month)	4,443	4,443	-	0%

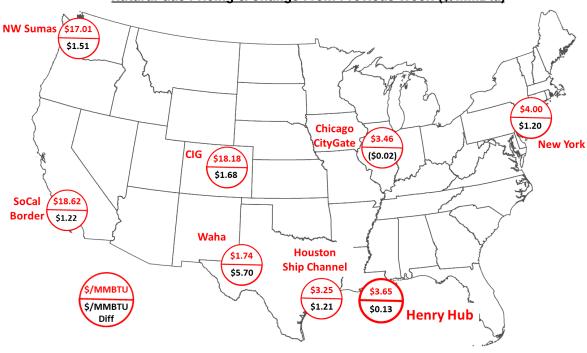
^{*}Source—Energy Information Administration, United States (EIA)
*Source—Baker Hughes North America Rotary Rig Count & PLS M&A Database

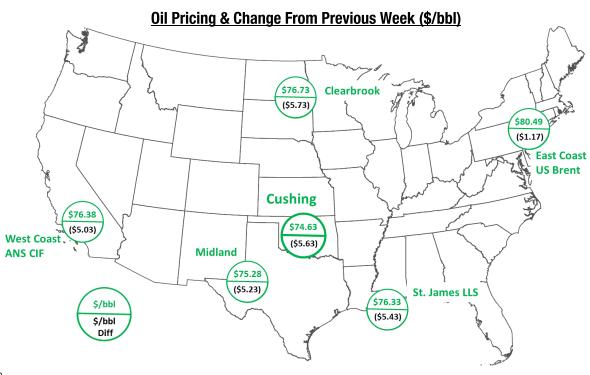




US COMMODITY PRICES CONTINUED







*Source—Bloomberg LP





SELECTED INDUSTRY HEADLINES

Washington Has Trouble Refilling The SPR After 220 Million Barrel Draw

After drawing over 221 million barrels of oil from the Strategic Petroleum Reserve (SPR) in 2022, Washington is having a tough time refilling it in the New Year.

Norway To Sustain Elevated Gas Production Until 2026 Thanks To \$30 Billion Of Offshore Investments

Norway will be able to sustain gas production at last year's elevated level until at least 2026 thanks to 300 billion Norwegian kroner (\$30 billion) of investment in new offshore fields.

U.S. Slows Release Of Oil Reserves (Log-In Required)

The U.S. release of crude reserves onto the market slowed last week, suggesting the Biden administration's unprecedented distribution from the nation's stockpiles is nearing its conclusion.

Russia's Flagship Oil Trading At Half Global Prices

Russia's flagship oil is selling at less than half international prices — and way below a Group of Seven imposed cap — following sanctions targeting the Kremlin's revenue from petroleum sales.

China Issues Second Set Of 2023 Oil Import Quotas, Up From 2022

China issued a second batch of 2023 crude oil import quotas, raising the total for this year by 20% compared to the same time last year.

U.S. Department Of Energy Rejects Initial Bids To Resupply Oil Stockpile

The U.S. Department of Energy has rejected the first batch of bids from oil companies to resupply a small amount of oil to the nation's emergency crude oil stockpile in February.

Oil Prices End 2022 At \$80 A Barrel

Despite a volatile year for crude oil prices, they ended the year similarly to how they began at around \$80 a barrel.

Biden Administration Defers Plan To Tackle Smog From Oil Drillers In Permian Basin

The Biden administration is deferring a plan to crack down on smog in the drilling hotbed of the Permian Basin, handing a win to oil producers along with their allies in Texas and New Mexico.

The Top 5 Exploration Prospects of 2023

Upstream companies are starting to adapt to an environment where oil prices will be higher for longer, one where OPEC+ production discipline and US shareholder returns are just as important a factor in drilling as the physical flow of oil.

Venezuela Oil Exports Fall Despite Iranian Help

Monday, January 09, 2023Venezuela's oil exports last year declined due to infrastructure outages, sanctions, and rising competition in Asia despite assistance from Iran.

2022 Saw The Second Highest Oil Production In U.S. History

U.S. oil production advanced in 2022, but is still short of the record levels of 2019.

Canada Moves Forward With One Of The "World's Largest" Carbon Capture And Storage Projects

The Pathways Alliance, representing Canada's largest oil sands producers, has entered into a Carbon Sequestration Evaluation Agreement with the Government of Alberta.

One Of The World's Largest Oilfields Faces Delays In Development

The Middle East Business Intelligence (MEED) recently reported that the West Qurna 2 oilfield in Iraq, one of the biggest oilfields in the world, could see delays in the next phase of its development.





SELECTED RECENT TRANSACTIONS

HNCR Sponsored SPAC Files For \$120 Million Business Combination

Houston Natural Resources Corp. (HNRC) announced that its subsidiary Houston Natural Resources, Inc, through its majority owned HNRAC Sponsors, LLC, sponsored a Special Purpose Acquisition Corp (SPAC), HNR Acquisition Corp (HNRA), and entered into a membership purchase agreement with Pogo Resources and two affiliates (Pogo) for a purchase price of \$120 million dollars.

Arena Energy Announces Strategic Acquisition of Gulf of Mexico Shelf Properties from GOM Shelf, LLC
Arena Energy, LLC ("Arena"), a leading independent oil and gas exploration company focused on the Gulf of Mexico Shelf, recently announced it has closed on the acquisition of seven blocks and twelve platforms in the Gulf of Mexico from GOM Shelf, LLC.

PHX Minerals Reports Fiscal 2022 Results and Haynesville, SCOOP Acquisitions

PHX Minerals Inc. recently announced that it acquired 923 net royalty acres in the SCOOP and Haynesville plays for approximately \$13.5 million in its fiscal fourth quarter of 2022.

Maverick Energy Group Announces Pass Creek Resources LLC Acquisition

Mayerick Energy Group, Ltd. recently announced its completed a transaction whereby Mayerick will acquire 100% of the units of Pass Creek Resources, LLC.

Arena Energy Awarded Eleven Blocks in Lease Sale 257, Adding Over 50,000 Acres to Existing Footprint on Gulf of Mexico Shelf

Arena Energy LLC recently announced that it was awarded eleven leases in the U.S. Gulf of Mexico by the Bureau of Ocean Energy Management (BOEM) in Lease Sale 257.

IOG Resources II Announces Acquisition

IOG Resources II LLC recently announced that it acquired producing gas assets in Appalachia operated by Seneca Resources, an affiliate of National Fuel Gas.

Royale Announces New Joint Development Agreement In Permian Basin

Royale Energy Inc. recently announced that it executed a Joint Development Agreement (JDA) with Ares Energy Ltd. for up to 25,000 acres in Ector and Andrews counties, Texas in the Permian Basin. This "Pradera Fuego Project" is a horizontal resource play in the Mississippian interval.

Diamondback Energy Announces Northern Midland Basin Acquisition

Diamondback Energy Inc. recently announced that it entered into a definitive purchase agreement to acquire all leasehold interest and related assets of Lario Permian LLC, a wholly owned subsidiary of Lario Oil & Gas Company, and certain associated sellers in exchange for 4.18 million shares of Diamondback common stock and \$850 million of cash.

Jericho Energy Ventures Enters Into Agreement To Sell Portion Of Its Undeveloped Oklahoma STACK Acreage

Jericho Energy Ventures Inc. recently announced that its joint venture partner in the STACK JV has agreed to divest a portion of its undeveloped acreage in the prolific STACK oil region of Oklahoma to an offset operator for total net proceeds of \$1.37 million.

Diamondback Energy Completes Divestiture Of Non-Core Delaware Basin Acreage

Diamondback Energy Inc. recently announced that it completed the divestiture of non-core Delaware Basin acreage for net proceeds of \$155 million.

Pantheon Resources Acquires 40,000 Acres In North Slope Lease Sale

Pantheon Resources plc recently announced the successful acquisition of approximately 40,000 acres in the State of Alaska's North Slope Areawide lease sale.

88 Energy Awarded Acreage In North Slope Lease Sale

88 Energy Ltd. recently announced that its wholly owned subsidiary, Captivate Energy Alaska Inc., was declared the highest bidder for select acreage offered as part of the North Slope Areawide 2022W oil and gas lease sale.

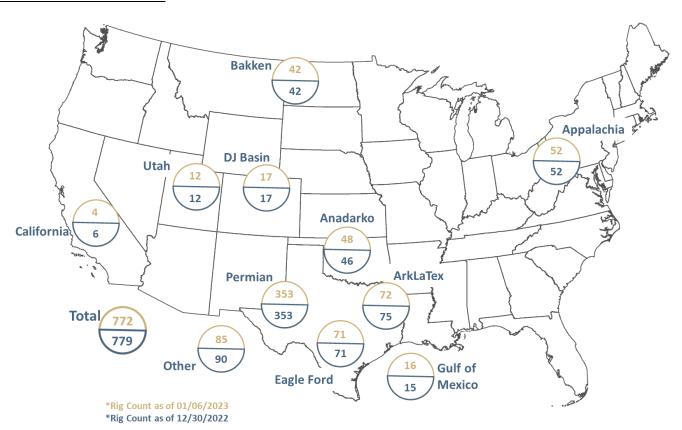
Kimbell Royalty Partners LP Announces \$290 Million Permian Basin Acquisition In Cash & Unit Transaction

Kimbell Royalty Partners LP recently announced that it agreed to acquire mineral and royalty interests held by Austin-based Hatch Royalty LLC in a cash and unit transaction valued at approximately \$290 million.





RIG ACTIVITY BY US REGION



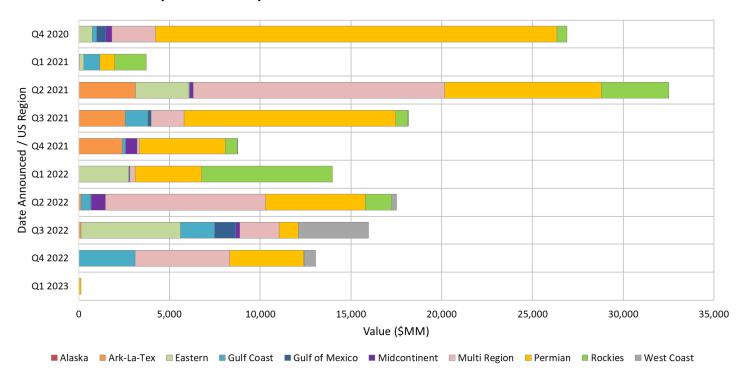
	Week Ending 01/06/2023		Week Ending 12/30/2022		Week Ending 01/07/2022
U.S. Rig Breakouts	Count	+/-	Count	+/-	Count
Oil	618	(4)	622	137	481
Gas	152	(3)	155	45	107
Not Specified	2	0	2	2	0
Directional	46	4	42	13	33
Horizontal	700	(10)	710	168	532
Vertical	26	(1)	27	3	23
Land (Inc Others)	754	(8)	762	184	570
Inland Waters	2	0	2	0	2
Offshore	16	1	15	0	16
US Total	772	(7)	779	184	588

*Source—Baker Hughes Weekly Rig Counts

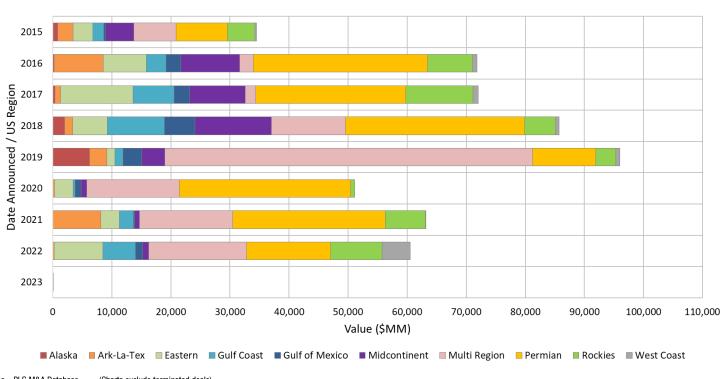




DEAL VALUE BY US REGION (BY QUARTER)



DEAL VALUE BY US REGION (BY YEAR)

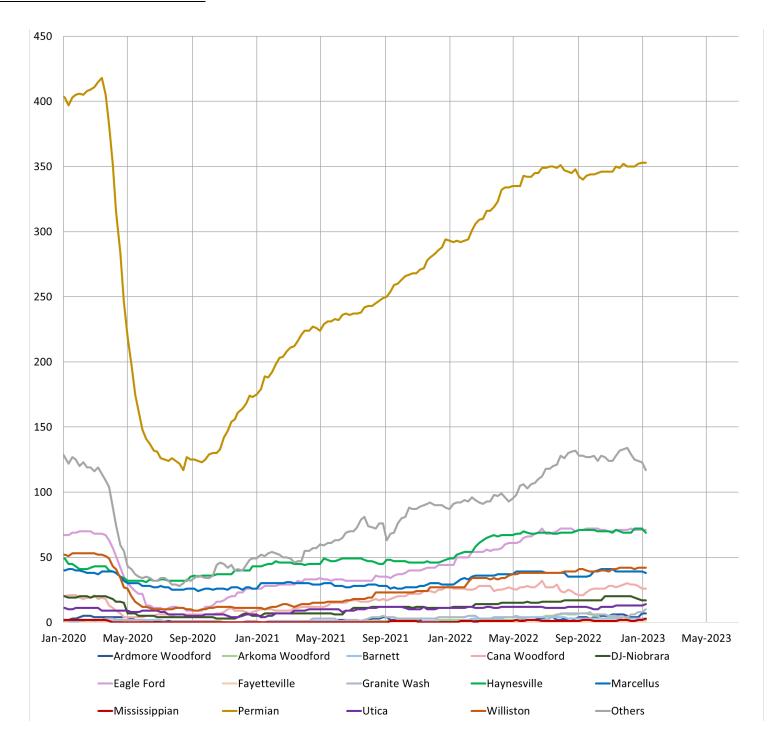


*Source—PLS M&A Database (Charts exclude terminated deals)





RIG ACTIVITY BY US REGION







US DAILY CRUDE (MMbbl) & DRY NATURAL GAS PRODUCTION (MMcf)

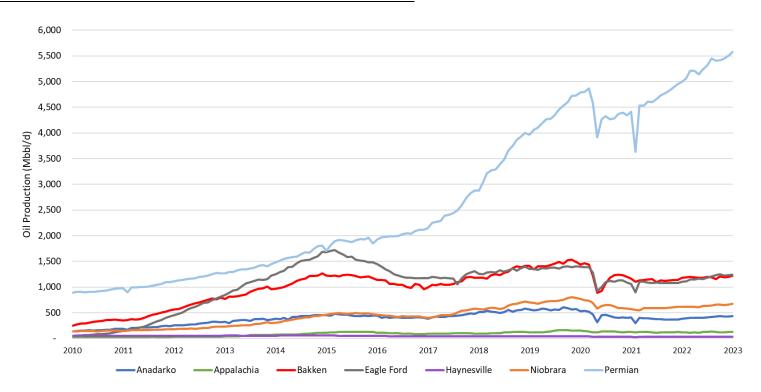


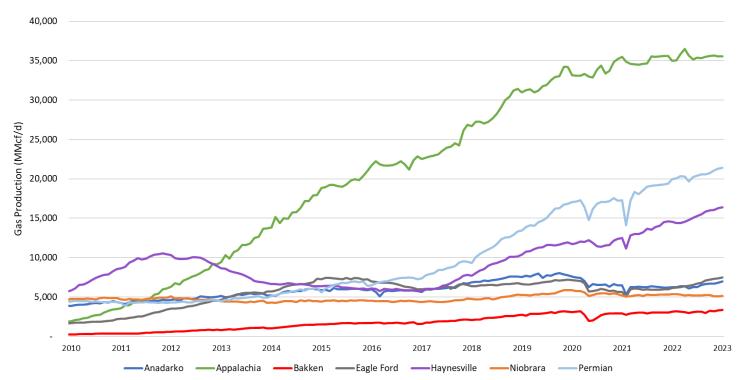




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HISTORICAL PRODUCTION OF SELECTED US SHALE REGIONS





 ${}^{\star}\text{Source} \underline{\hspace{0.5cm}} \text{Energy Information Administration, United States (EIA)}$





UPCOMING EVENTS

January 2023

IPAA Private Capital Conference	January 19	Houston, TX
SPE Hydraulic Fracturing Technology Conference & Exhibition	January 31- February 1	The Woodlands, TX
February 2023		
NAPE Summit 2023	February 1-3	Houston, TX
Argus Americas Crude Summit	February 15-17	Houston, TX
GoM Energy Transformation Conference	February 21	Houston, TX
March 2023		
CERAWeek 2023	March 6-10	Houston, TX
4th American LNG Forum	March 13-14	Houston, TX
DUG Haynesville Conference & Exhibition	March 28-29	Shreveport, LA
<u>May 2023</u>		
Offshore Technology Conference 2023	May 1-4	Houston, TX
DUG Permian Basin & Eagle Ford Conference & Exhibition	May 22-24	Fort Worth, TX





ABOUT RALPH E. DAVIS ASSOCIATES

Ralph E. Davis Associates LLC (RED) is an industry-leading petroleum engineering and geosciences firm committed to satisfying the individual needs of clients. We accomplish this by holding ourselves to the highest standards of integrity and professionalism to deliver honest, direct and actionable insights to help clients achieve their strategic objectives. We distinguish ourselves by combining reservoir engineering, geoscience evaluation techniques and advanced data analytics with economic analyses to provide our clients with individual, customized solutions.

Banks, bondholders, private equity firms, financial institutions and law firms around the world trust in RED's diverse services and unrivaled upstream oil and gas expertise to deliver comprehensive solutions that help clients make informed decisions. We add value to every engagement by employing a team approach, leveraging Opportune LLP's experienced bench of experts in transactional due diligence, tax advisory, investment banking, restructuring and valuation.

We offer technical and economic analyses to deliver our clients a complete, independent, accurate and detailed assessment of the value of their assets. We apply a robust set of technical capabilities to assist our clients. Our capabilities include:

- Reservoir engineering and geosciences
- Economic forecasting and reporting
- Data analytics and geospatial analysis

KEY CONTACTS



Steve Hendrickson is the President of Ralph E. Davis Associates, an Opportune LLP company. Steve has over 35 years of professional leadership experience in the energy industry with a proven track record of adding value through acquisitions, development and operations. Steve is a licensed professional engineer in the state of Texas, and holds an M.S. in Finance from the University of Houston and a B.S. in Chemical Engineering from The University of Texas at Austin. He recently served as a board member of the Society of Petroleum Evaluation Engineers (SPEE) and is a registered FINRA representative.



John Beaird is Vice President of Ralph E. Davis Associates, an Opportune LLP company. John has 39 years of oil and gas management, reservoir engineering, and petroleum economics evaluation experience. Recent relevant experience includes the Permian, Western Gulf, Tx-La-Miss Salt, Mid-Continent, Denver-Julesburg, Wind River, Williston Basin, and Appalachian Basins. John is a registered Petroleum Engineer in the State of Texas and holds a B.S. in Petroleum Engineering from Louisiana Tech University. He is also an active member of the Society of Petroleum Evaluation Engineers (SPEE).



Yvonne Trujillo is a Senior Petroleum Engineer at Ralph E. Davis Associates, an Opportune LLP company. Yvonne has over 25 years experience in the oil and gas industry with extensive expertise in reserves engineering, SEC and PRMS/SPE reporting and economics and asset evaluation in conventional and unconventional reservoirs in the U.S. Lower 48. Yvonne earned a B.S. in Mechanical Engineering at Simon Bolivar University in Caracas, Venezuela and an M.S. in Petroleum Engineering at the University of Houston.



David Edwards is a Petroleum Engineer at Ralph E. Davis Associates, an Opportune LLP company. David has over two years of reserves engineering experience. Before RED, David was a Petroleum Engineer at Energy Advisors Group where he handled the technical processes for marketed conventional and unconventional assets across the Lower 48. He began his career with Longfellow Energy where he contributed to its engineering, operations, and A&D teams. David holds an MBA from The University of Texas Permian Basin and a B.S in Petroleum Engineering from The University of Oklahoma.

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