



Weekly E&P Update

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Vol. 22

LNG Value Chain

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In our newsletter a couple of weeks ago, we looked at the recent and projected growth in US LNG export capacity. We concluded that these terminals could provide increased access to global LNG markets and that these markets will supply meaningful demand to US natural gas producers. However, LNG export terminals (liquefaction facilities) are not the only infrastructure needed to supply global markets, so this week, we'll look at some of the other components.

According to an [article published by the US Department of Energy](#) and others in 2018, the components of the LNG value chain are exploration and production, midstream (processing and transportation), liquefaction, shipping, gasification (and storage), and distribution. Let's consider each -

Exploration and production: Led by the tremendous horizontal well productivity in the Marcellus and [Haynesville](#) plays, the US continues to set all-time gas production records despite recent low prices. Associated gas from the Permian also plays a role, and all these regions have substantial undrilled inventories.

Midstream: Getting gas to market for end users or export terminals has occasionally been problematic as midstream build-out can lag upstream development. On the positive side, the proposed and under-construction export terminals take years to commence operations, giving midstream players ample time to [construct or expand pipelines](#) to meet increased export demand. On the other hand, [regulatory delays in the eastern US](#) have slowed down pipeline development and restricted production from the Marcellus.

Shipping: Some years ago, global trade in LNG was less than expected, and the LNG tanker business was overbuilt. After the US shale revolution, retrofitting US import terminals for export, and the Russian invasion of Ukraine, LNG trade has increased, and the number of LNG tankers is almost 700, nearly double the level a decade ago. Also, the order book of newbuild vessels is 40% of the existing capacity, and day rates are firm. The LNG shipping industry [looks healthy and is growing](#).

Gasification: There is plenty of gasification facilities worldwide, and more are being constructed. In fact, some commenters are concerned that [Europe may overbuild](#) its gasification infrastructure and generate financial losses for investors.

Distribution: Most imported LNG goes to large industrialized economies with extensive distribution networks. If the demand for the gas exists, it's a safe bet that it can be moved within the receiving countries.

Overall, all of the pieces of the LNG value chain are responding well to bring increased supplies and new demand together.

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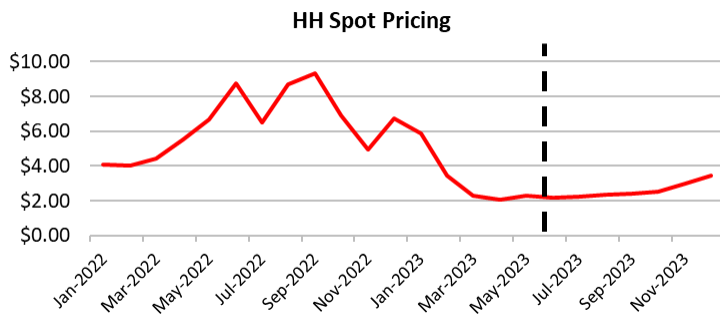
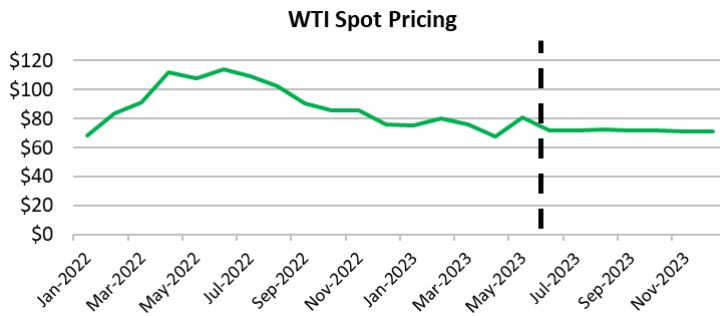
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NYMEX FUTURE PRICING



MONDAY'S MARKET CLOSE

NYMEX WTI CRUDE OIL FUTURES as of June 06, 2023 Close (\$/bbl)

| Period | Current | WoW Change | Last Week | 1 Yr Ago |
|--------|---------|------------|-----------|----------|
| 2023 | \$71.71 | (\$0.54) | \$72.25 | \$95.71 |
| 2024 | \$68.66 | (\$0.60) | \$69.26 | \$83.52 |
| 2025 | \$65.29 | (\$0.81) | \$66.10 | \$75.54 |
| 2026 | \$62.63 | (\$1.00) | \$63.63 | \$70.31 |
| 2027 | \$60.30 | (\$1.21) | \$61.50 | \$67.18 |

NYMEX HH NATURAL GAS FUTURES as of June 06, 2023 Close (\$/MMBtu)

| Period | Current | WoW Change | Last Week | 1 Yr Ago |
|--------|---------|------------|-----------|----------|
| 2023 | \$2.66 | (\$0.03) | \$2.69 | \$6.09 |
| 2024 | \$3.44 | (\$0.08) | \$3.52 | \$4.89 |
| 2025 | \$3.96 | (\$0.12) | \$4.08 | \$4.52 |
| 2026 | \$3.95 | (\$0.13) | \$4.08 | \$4.51 |
| 2027 | \$3.93 | (\$0.13) | \$4.06 | \$4.49 |

INDUSTRY METRICS—QUICK SNAPSHOT

| | Current | Last Week | WoW Change | %Change |
|--|----------------|------------------|-------------------|----------------|
| Crude Oil Near-Month Price (\$/bbl) | \$71.74 | \$73.23 | (\$1.49) | (2%) |
| Natural Gas Near-Month Price (\$/MMBtu) | \$2.16 | \$2.42 | (\$0.25) | (11%) |
| Weekly Upstream-Deal Transaction Value (\$MM) | \$1,840.00 | \$7,975.00 | (\$6,135.00) | (77%) |
| Weekly Number of Upstream-Deal Transactions | 2 | 4 | (2) | (50%) |
| Current Total US Rig Count | 696 | 711 | (15) | (2%) |
| US Field Crude Oil Production (MMbbl/day) | 12.2 | 12.3 | (0.1%) | (0.8%) |
| US Field Dry Natural Gas Production (Bcf/day) | 105.9 | 105.4 | 0.5 | 0.5% |
| Commercial Crude Oil Stocks-Excluding SPR (MMbbl) | 460 | 455 | 5 | 1% |
| Natural Gas Stocks-Working Gas Underground Storage (Bcf) | 2,446 | 2,336 | 110 | 5% |
| Total Drilled But Uncompleted Wells (DUC-Last Month) | 4,863 | 4,863 | 0 | - |

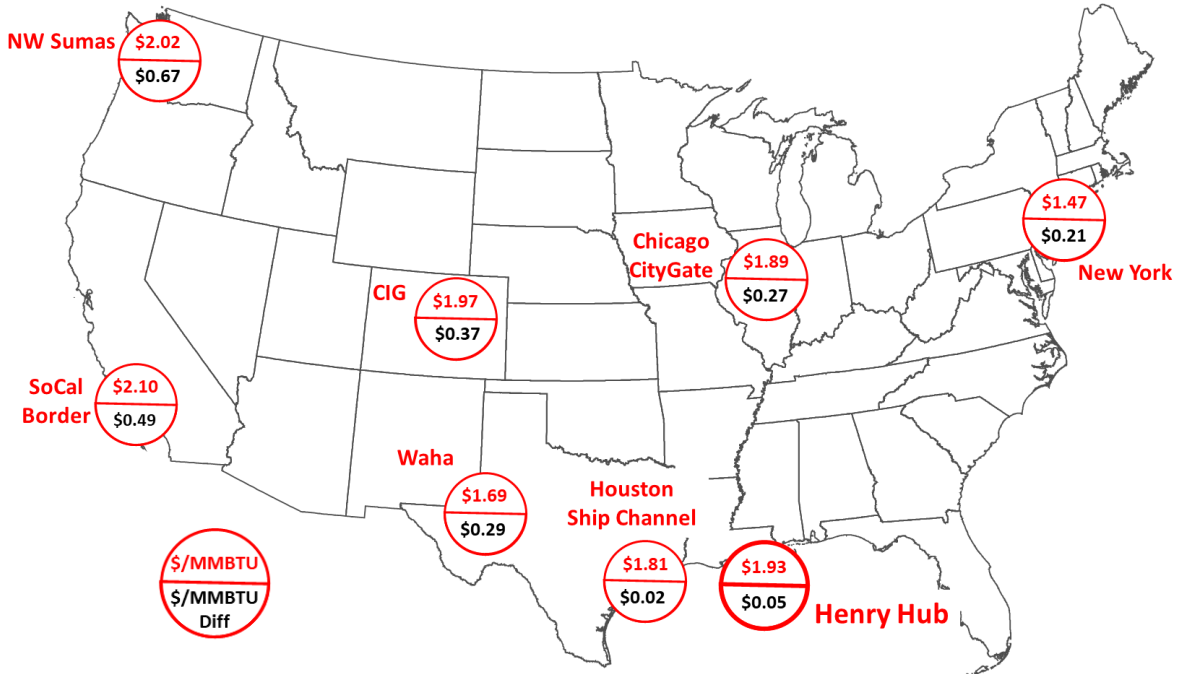
*Source—Energy Information Administration, United States (EIA)

*Source—Baker Hughes North America Rotary Rig Count & PLS M&A Database

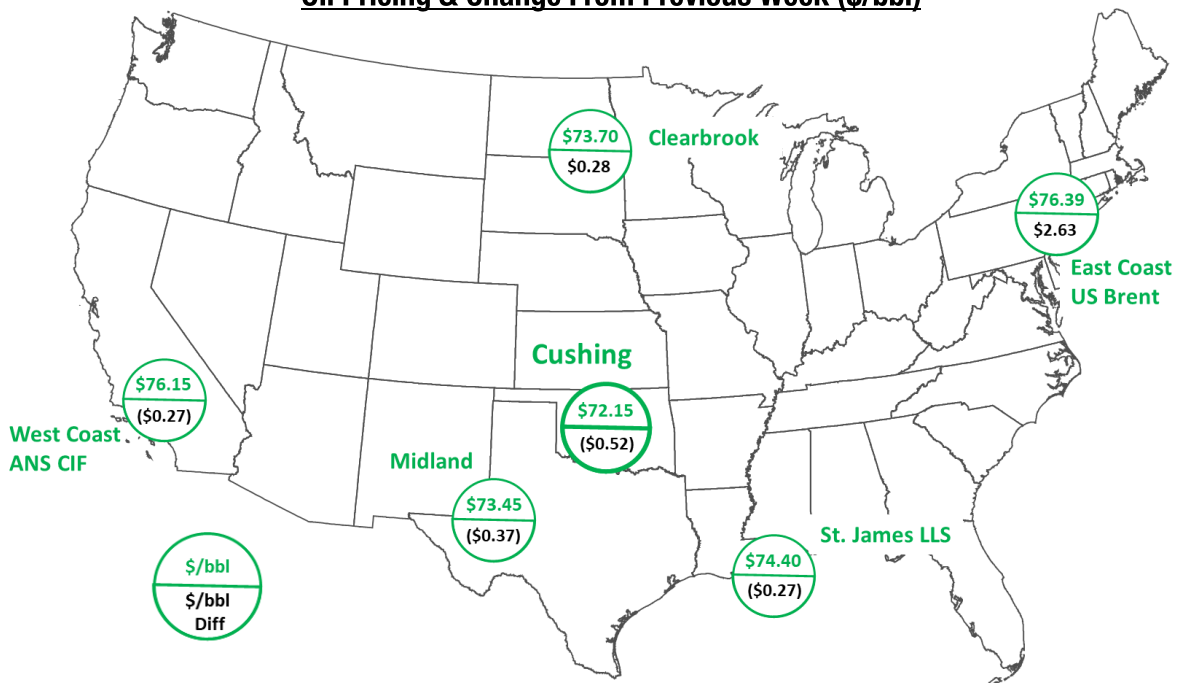


US COMMODITY PRICES CONTINUED

Natural Gas Pricing & Change From Previous Week (\$/MMBtu)



Oil Pricing & Change From Previous Week (\$/bbl)



*Source—Bloomberg LP



SELECTED INDUSTRY HEADLINES

What Do Latest OPEC+ Moves Mean?

OPEC+ decided not to implement additional official production cuts this year and instead chose to set a lower target production for 2024, “after more than six hours of lengthy discussions among member countries”, Rystad Energy Senior Vice President Jorge Leon highlighted in a market update sent to Rigzone.

Saudi Surprise Cut Signals OPEC Crisis

The recent “surprise” oil production cut announced by Saudi Arabia's Minister of Energy, Prince Abdelaziz bin Salman, has failed to restore confidence in the increasingly fragile OPEC+ alliance.

Will China's Oil Demand Disappoint This Year

China’s economic recovery is sputtering, prompting renewed concerns about crude oil and other commodities demand that could result in slower-than-expected global oil demand growth this year and weigh on oil prices.

US 2023 Oil Output To Rise More Than Previously Expected, EIA Says (LOGIN CREDENTIALS REQUIRED)

U.S crude oil production this year will rise faster and demand increases will cool compared to prior expectations, the U.S. Energy Information Administration (EIA) said recently.

Russian Oil Output Remains High Much To OPEC's Dismay

Russian crude oil export data in recent weeks have not reflected any cuts and OPEC+ allies are increasingly frustrated with Moscow's lack of transparency.

Japan To Invest \$107 B In Hydrogen Supply Over 15 Years

Japan plans to invest 15 trillion yen (\$107.5 billion) over the next 15 years to supply the country with hydrogen, the government said recently, as it accelerates efforts to use the gas to shift to a low carbon economy.

Produced Water Producing Results

After years of skepticism surrounding the reuse of produced water, experts say it’s a new day and age for the water midstream sector.

Energy Workforce: Oil Field Service, Equipment Sector Employment Increased To Highest Level Since March 2020

Employment in the U.S. oil field services and equipment sector increased by 4,385 jobs to its highest level since March of 2020 to reach 665,213 in May, according to preliminary data from the Bureau of Labor Statistics (BLS) after adjustments to April numbers and analysis by the Energy Workforce & Technology Council (Energy Workforce).

USA Shale Seen Holding Firm On Returns

US shale producers will stick to their previously announced plans for 2023 — growing output modestly while returning lots of cash to investors — even as Saudi Arabia throttles back supplies in the height of the summer driving season.

Pennsylvania's Largest Coal Plant To Close Amid Shift To Gas

In the latest sign of the shift to gas power from coal in the USA, the Homer City Generating Station in Pennsylvania will close by July, the USA Energy Information Administration (EIA) said, citing the plant’s owner.

Canada Plan To Clean Up Oil Sands A Big Risk For Trudeau (LOGIN CREDENTIALS REQUIRED)

Canada's oil sands industry says carbon capture can help it cut planet-warming emissions. But can taxpayer cash be better spent?



SELECTED RECENT TRANSACTIONS

Family Office-Led Private Consortium Acquires PureWest

PureWest Energy, LLC, a leading Rocky Mountain independent natural gas producer has completed an all-cash merger with a newly formed entity sponsored by a private consortium of family offices and financial institutions for a total consideration of \$1.84 billion.

PureWest Energy LLC Sells Producing Wellbores In Wyoming

As part of their recent transaction, PureWest Energy, LLC has closed on a divestiture of producing wellbores to investment vehicles managed by Wincoram Asset Management.

Chord Energy Announces Strategic Acquisition of Williston Basin Assets

Chord Energy Corporation today announced that a wholly owned subsidiary of Chord has entered into a definitive agreement to acquire assets in the Williston Basin from XTO Energy Inc. and affiliates, subsidiaries of Exxon Mobil Corporation, for total cash consideration of \$375MM, subject to customary purchase price adjustments.

Chevron Announces Agreement to Acquire PDC Energy

Chevron Corporation (NYSE: CVX) announced recently that it has entered into a definitive agreement with PDC Energy, Inc. (NASDAQ: PDCE) to acquire all of the outstanding shares of PDC in an all-stock transaction valued at \$6.3 billion, or \$72 per share.

Pompano Resource Transformation Acquires Gulf Coast Oil Field From Paloma Resources

Pompano Resource Transformation, a wholly-owned subsidiary of XMC Strategies, recently announced that it has acquired a Gulf Coast oil asset, including 33 operated oil wells, from Paloma Natural Gas, LLC, which is owned in part by Houston-based private equity firm EnCap Investments.

Southern Energy Corp. Announces Execution of a Purchase and Sale Agreement in Respect of a Synergistic - 400 Boe/D Asset Acquisition To Consolidate the Gwinville Field

Southern Energy Corp. is pleased to announce that it has entered into a definitive agreement with PetroTX Energy, LLC to acquire the remaining producing acreage in the Gwinville Field not already owned by the Company, in Jefferson Davis County, Mississippi for a cash purchase price of \$3.2 million.

Epsilon Announces A Second Transaction In The Permian Basin

Epsilon Energy Ltd. Recently reported an investment in Ector County, Texas with material follow-on development opportunities. The acquired assets are a 25% working interest in 12,373 gross acres on the Central Basin Platform, operated by a Midland-based private operator.

Trio Petroleum Corp. Signs Acquisition Agreement To Acquire Up To 100% Of Producing Asset

Trio Petroleum Corp. recently announced the signing of an Acquisition Agreement to potentially acquire up to 100% of the working interest in the Union Avenue Field located in Bakersfield, California.

Canada Energy Partners Announces Signing Of Participation Agreement With Wandoo Energy LLC For The Development Of The Kuester-Ochoa Project And Concurrent Unit Financing Of \$2M

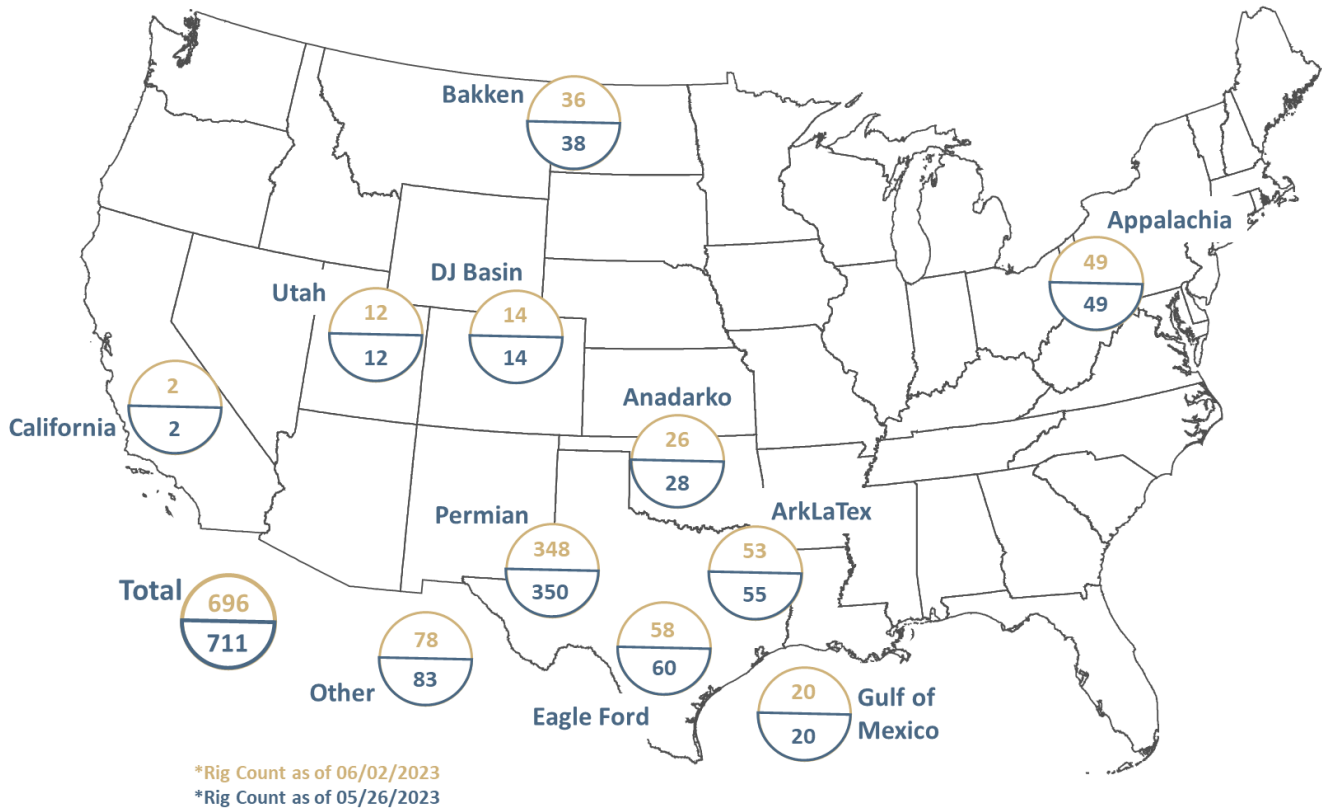
Canada Energy Partners Inc. recently announced that they have determined that a lower capital cost acquisition opportunity will satisfy the current capital market appetite in the junior energy markets, so they have entered into a Participation Agreement with Wandoo Energy LLC, a Texas based oil & gas company.

Vital Energy To Acquire Permian Assets For \$540 mln

Vital Energy Inc VTLE.N said recently it would acquire Permian assets of Forge Energy II Delaware, an EnCap portfolio company, in a \$540 million all-cash deal.



RIG ACTIVITY BY US REGION

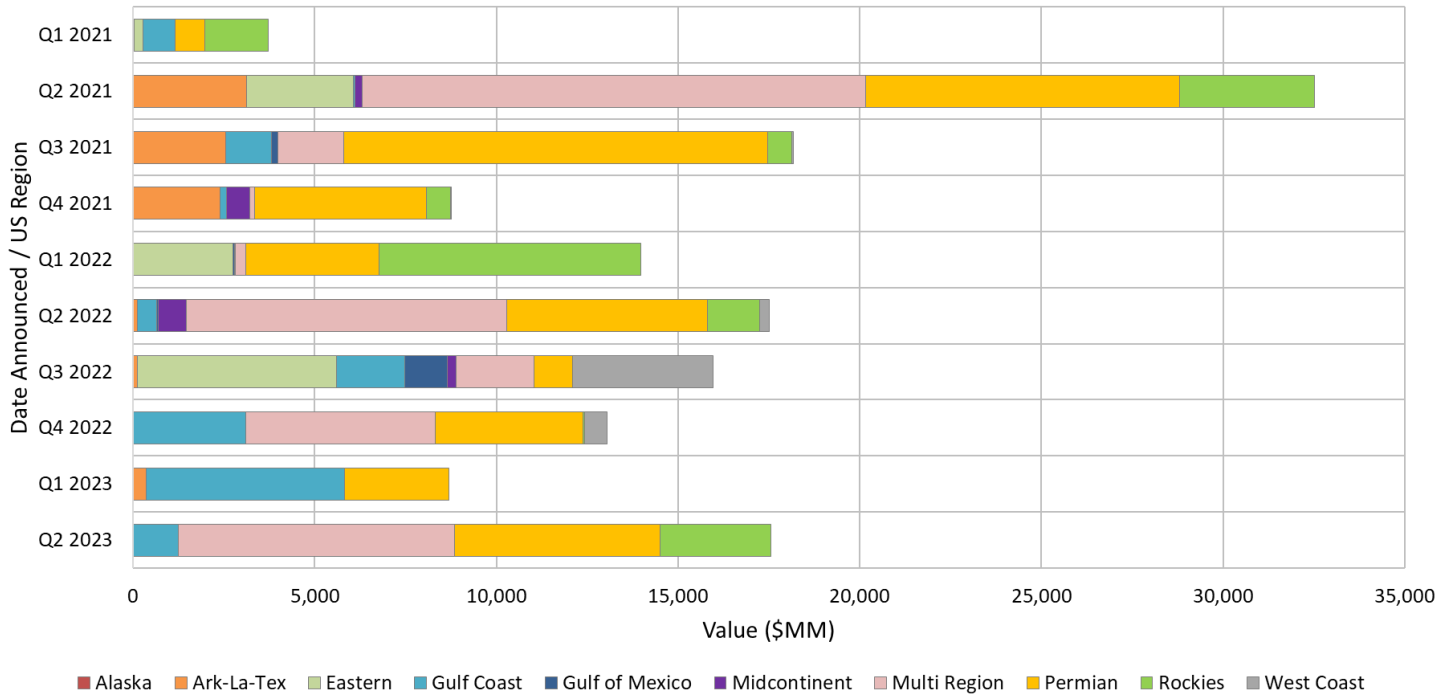


| | Week Ending 06/02/2023 | | Week Ending 05/26/2023 | | Week Ending 06/03/2022 |
|--------------------|---------------------------|-------------|---------------------------|-------------|---------------------------|
| U.S. Rig Breakouts | Count | +/- | Count | +/- | Count |
| Oil | 555 | (15) | 570 | (19) | 574 |
| Gas | 137 | 0 | 137 | (14) | 151 |
| Not Specified | 4 | 0 | 4 | 2 | 2 |
| Directional | 52 | 0 | 52 | 16 | 36 |
| Horizontal | 628 | (14) | 642 | (38) | 666 |
| Vertical | 16 | (1) | 17 | (9) | 25 |
| Land (Inc Others) | 674 | (15) | 689 | (36) | 710 |
| Inland Waters | 2 | 0 | 2 | 1 | 1 |
| Offshore | 20 | 0 | 20 | 4 | 16 |
| US Total | 696 | (15) | 711 | (31) | 727 |

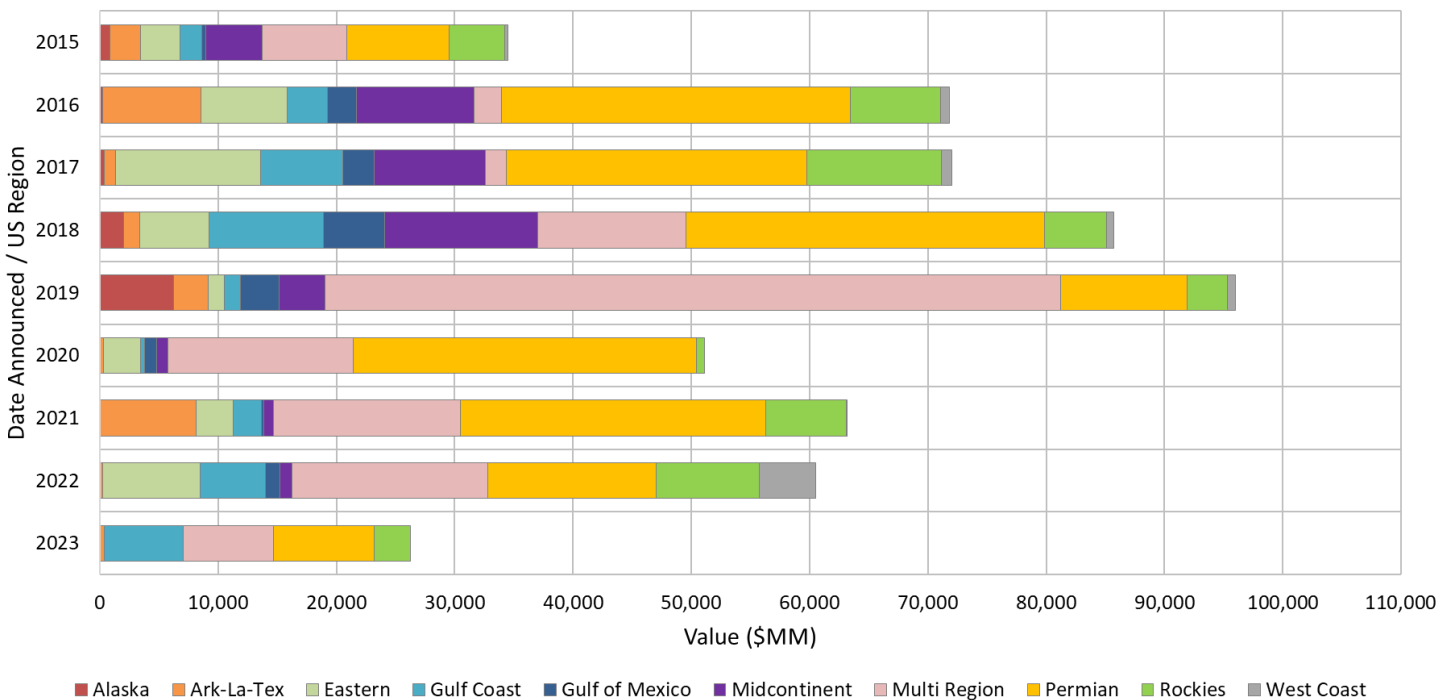
*Source—Baker Hughes Weekly Rig Counts



DEAL VALUE BY US REGION (BY QUARTER)



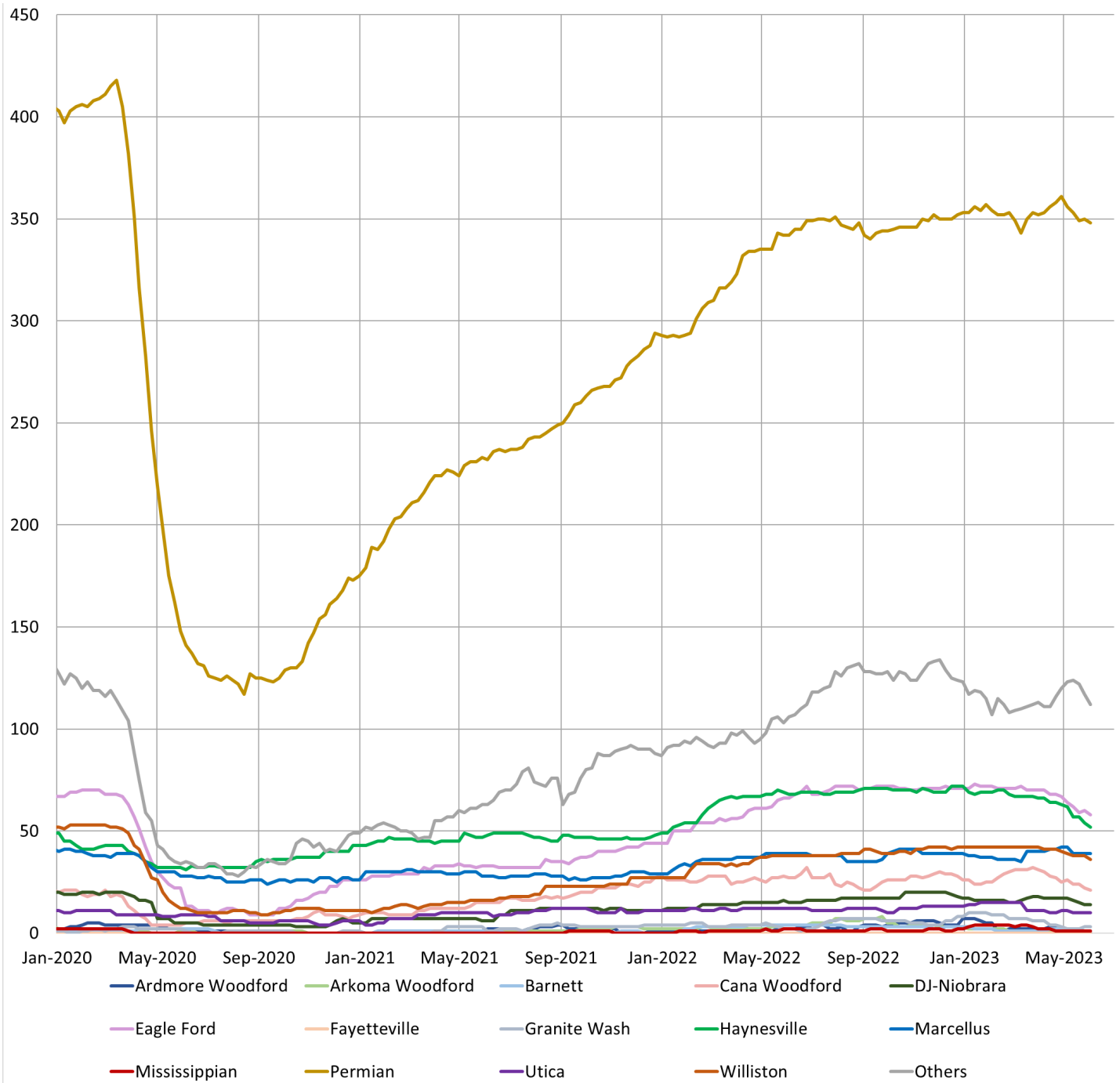
DEAL VALUE BY US REGION (BY YEAR)



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



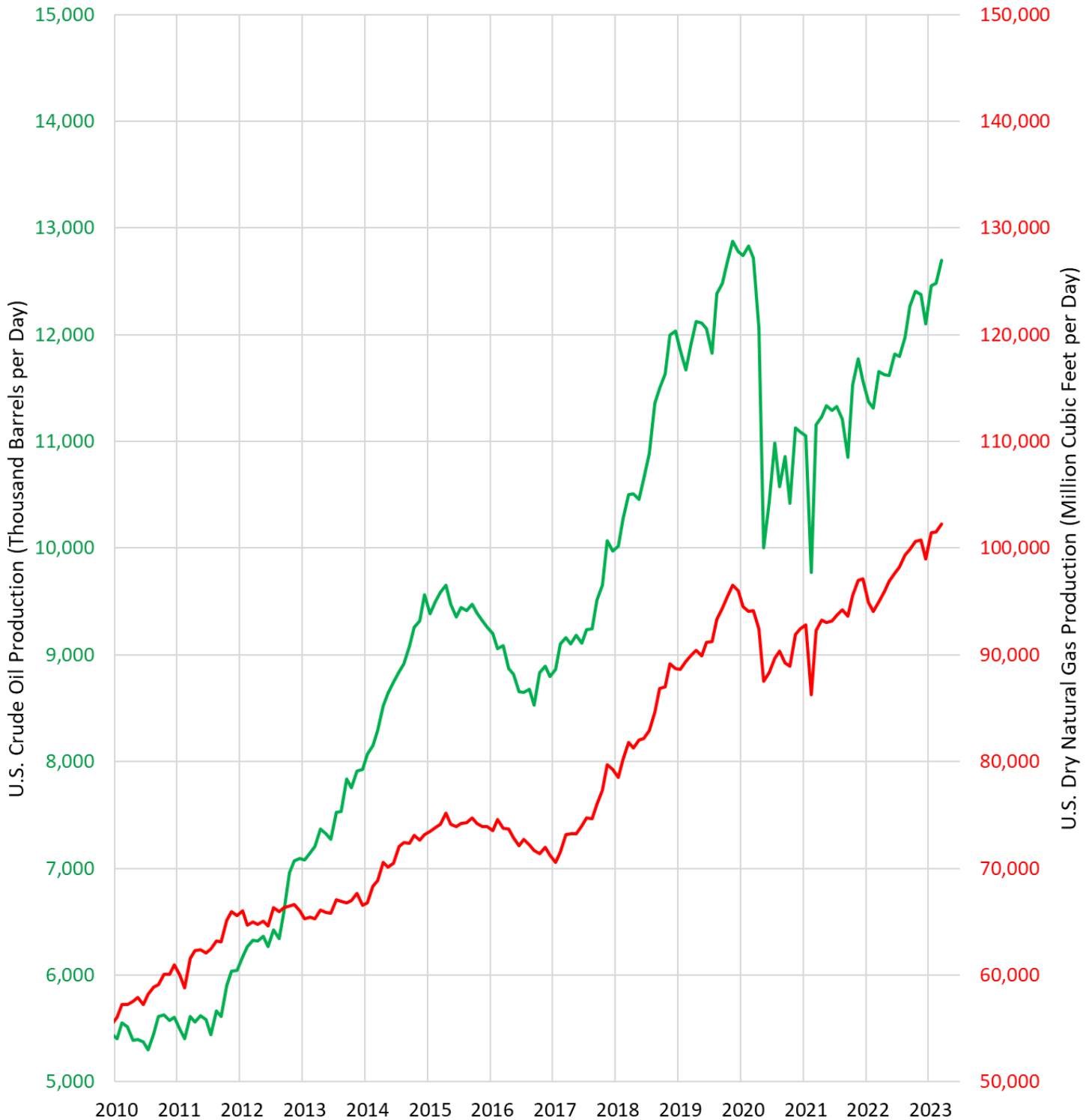
RIG ACTIVITY BY US REGION



*Source—Baker Hughes Weekly Rig Counts



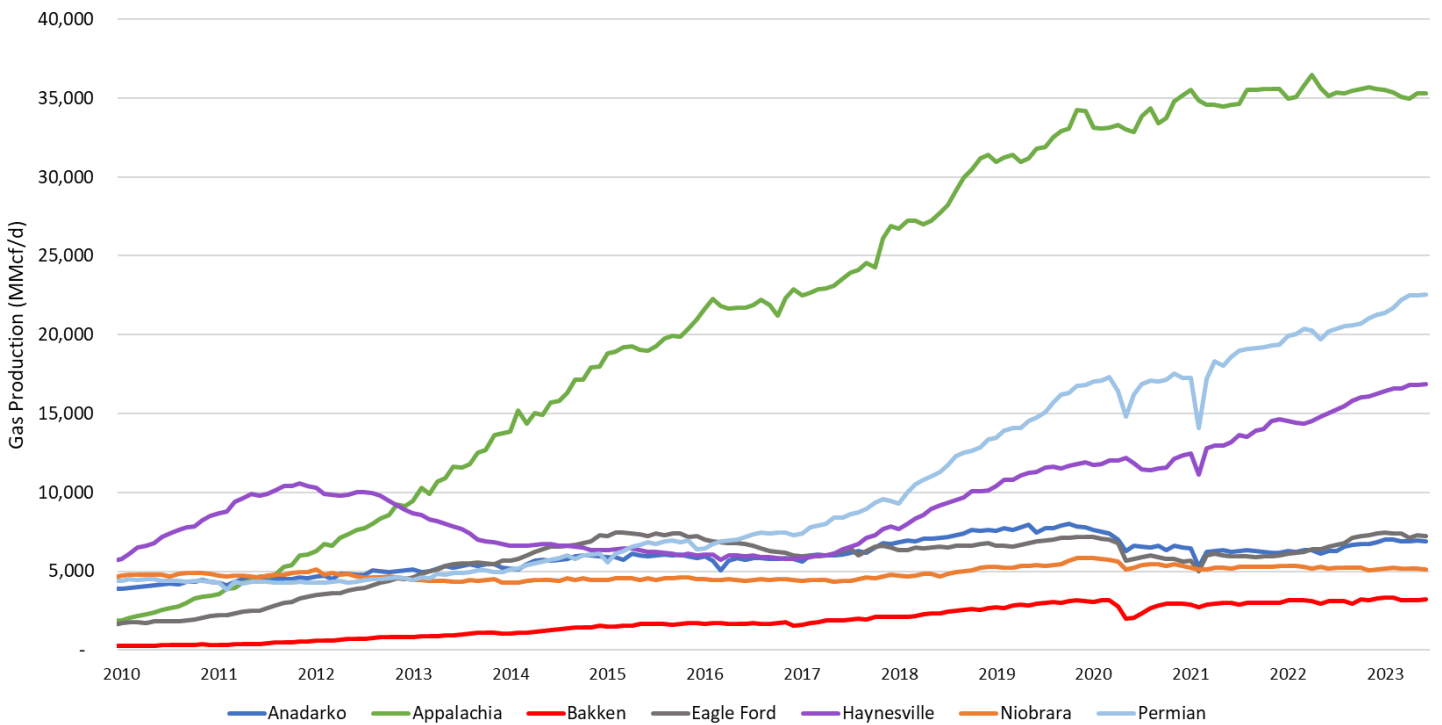
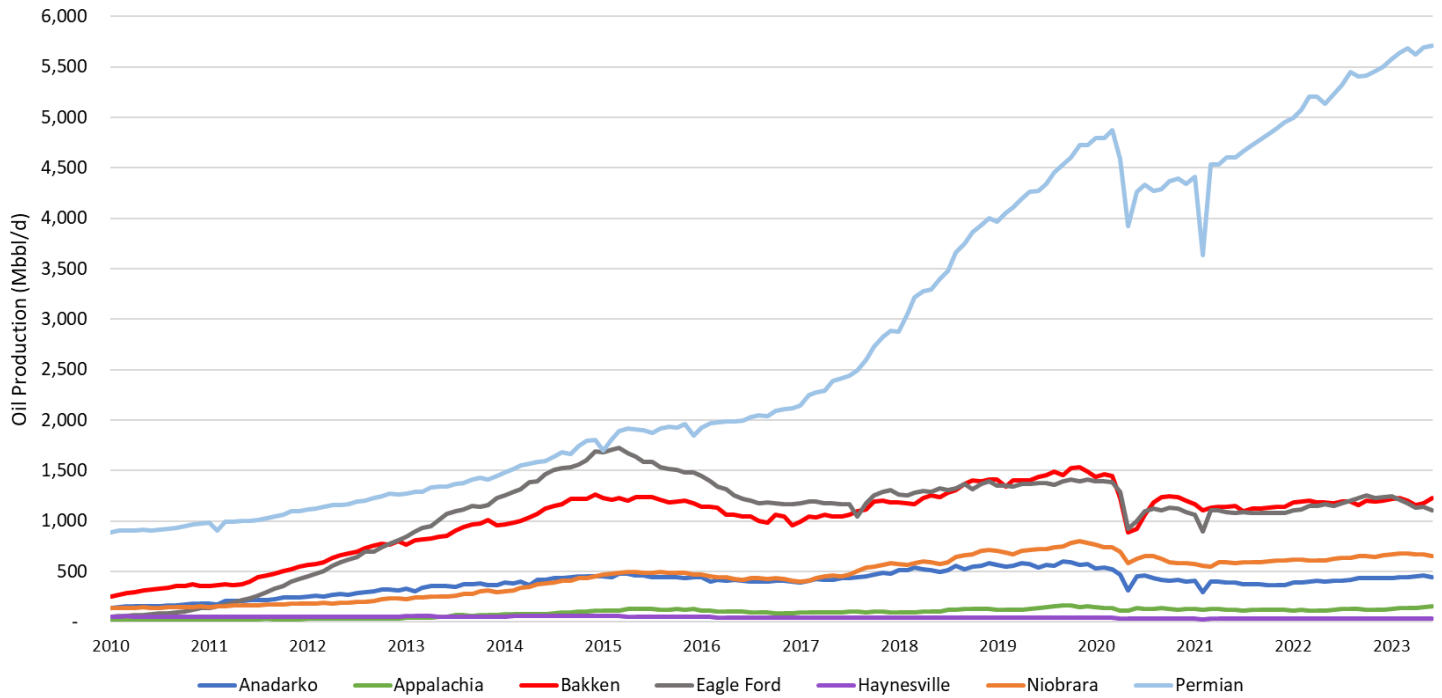
US DAILY CRUDE (MMbbl) & DRY NATURAL GAS PRODUCTION (MMcf)



*Source—Energy Information Administration, United States (EIA)



HISTORICAL PRODUCTION OF SELECTED US SHALE REGIONS



*Source—Energy Information Administration, United States (EIA)



UPCOMING EVENTS

June 2023

| | | |
|---|------------|---------------|
| <u>Unconventional Resources Technology Conference (URTeC)</u> | June 13-15 | Denver, CO |
| <u>Society Of Petroleum Evaluation Engineers (SPE) Annual Meeting</u> | June 17-20 | Newport, RI |
| <u>Salesforce For Energy (with Opportune)</u> | June 22 | Houston, TX |
| <u>Telluride Executive Series</u> | June 27-29 | Telluride, CO |

July 2023

| | | |
|---------------------|------------|------------------------|
| Banff Energy Summit | July 12-14 | Banff, Alberta, Canada |
|---------------------|------------|------------------------|

August 2023

| | | |
|--|--------------|-------------|
| <u>Enercom Denver</u> | August 14-16 | Denver, CO |
| <u>TXCPA Energy Conference</u> | August 25 | Houston, TX |

*Denotes an Opportune Sponsored Event



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 three years of reserves engineering experience in conventional and unconventional reservoirs. Before RED, David was a Petroleum Engineer at a lower middle market A&D advisory firm where he handled the technical processes for marketed assets. He began his career with an operator in Dallas, where he contributed to its engineering, operations, and A&D teams. David holds an M.B.A. from The University of Texas Permian Basin and a B.S. in Petroleum Engineering from The University of Oklahoma.

