



Weekly E&P Update

June 27, 2023

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Fuel Prices Increase on Seasonal Blend Changes

By Steve Hendrickson
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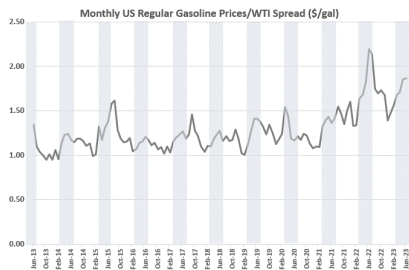
You may have noticed that gasoline prices have risen about 10% over the last few weeks and wondered why that would be when oil prices have been stable or slightly declining. Summertime often leads to increased demand for motor fuel as vacationers take to the highways and skyways, impacting gasoline prices. However, the composition of the fuel we buy in the summer also plays an important role.

"Gasoline" is a mixture of hydrocarbons that can vary depending on the refiner's and product blender's choices. The final gasoline product we use must meet two critical specifications, however; one is the **octane rating**, which measures how much compression the fuel can withstand without spontaneously detonating. This is a crucial fuel property because high-compression engines deliver more power and burn fuel more efficiently. Fuels that combust in an engine before the piston has completely compressed the fuel/air mixture ("pre-mature detonation") will cause the engine to "knock". This leads to a louder engine with increased vibration and can also cause damage to engine components.

The other important specification relates to the **vapor pressure** of the gasoline, which is a measure of volatility that quantifies how readily the fuel evaporates. Volatility is desirable in gasoline because the liquid gasoline needs to completely evaporate in the intake air in the cylinder before combusting. Excessive volatility can cause engine problems too, leading to increased air pollution, primarily ground-level ozone. To reduce this problem, the EPA limits the vapor pressure of gasoline from June 1 to September 15.

During the non-summer months, the vapor pressure limits are relaxed, allowing **gasoline blenders to add other less expensive hydrocarbons** while still achieving the octane ratings needed. Butane is often added to the blend (after ethanol to meet EPA mandates and other additives to improve fuel performance) to bring the fuel to the maximum allowable vapor pressure. In the summer months, the lower-cost components must be reduced, however, so the overall cost of a gallon of gasoline increases.

To see the effect of season blending changes, see the graph below. It shows the spread between the average price per gallon of regular gasoline compared to the price of WTI crude oil (also expressed in \$/gallon). The highlighted bands show May to September of each year. Note how in most years, the spread begins to widen ahead of the June 1 date as blenders start changing their formulation and higher-cost fuels work their way into the market.



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(Source: Federal Reserve Economic Data)

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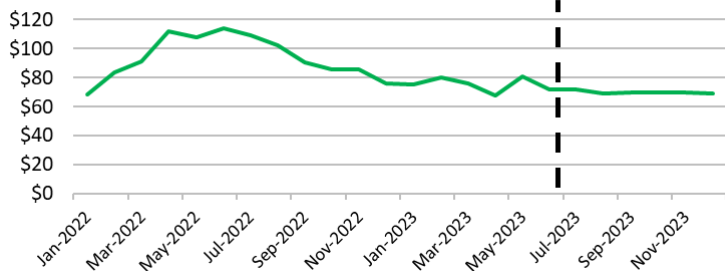
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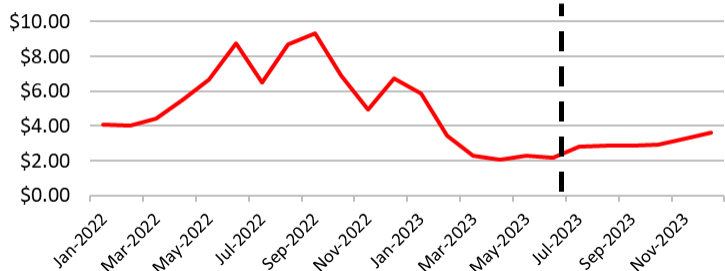


NYMEX FUTURE PRICING

WTI Spot Pricing



HH Spot Pricing



MONDAY'S MARKET CLOSE

NYMEX WTI CRUDE OIL FUTURES
as of June 26, 2023 Close (\$/bbl)

Period	Current	WoW Change	Last Week	1 Yr Ago
2023	\$69.46	(\$2.23)	\$71.69	\$87.26
2024	\$67.85	(\$1.47)	\$69.32	\$78.39
2025	\$65.01	(\$1.20)	\$66.21	\$72.33
2026	\$62.63	(\$1.12)	\$63.75	\$68.16
2027	\$60.48	(\$1.09)	\$61.57	\$65.24

NYMEX HH NATURAL GAS FUTURES
as of June 26, 2023 Close (\$/MMBtu)

Period	Current	WoW Change	Last Week	1 Yr Ago
2023	\$3.06	\$0.10	\$2.96	\$5.24
2024	\$3.55	\$0.03	\$3.52	\$4.75
2025	\$3.99	\$0.02	\$3.97	\$4.63
2026	\$3.98	\$0.03	\$3.95	\$4.63
2027	\$3.90	\$0.05	\$3.85	\$4.63

INDUSTRY METRICS—QUICK SNAPSHOT

	Current	Last Week	WoW Change	%Change
Crude Oil Near-Month Price (\$/bbl)	\$69.84	\$70.55	(\$0.71)	(1%)
Natural Gas Near-Month Price (\$/MMBtu)	\$2.76	\$2.55	\$0.21	8%
Weekly Upstream-Deal Transaction Value (\$MM)	\$4,793.50	\$1,604.60	\$3,188.90	199%
Weekly Number of Upstream-Deal Transactions	4	4	0	-
Current Total US Rig Count	682	687	(5)	(0.7%)
US Field Crude Oil Production (MMbbl/day)	12.2	12.4	(0.2)	(2%)
US Field Dry Natural Gas Production (Bcf/day)	104.9	105.7	(0.8)	(0.8%)
Commercial Crude Oil Stocks-Excluding SPR (MMbbl)	463	467	(4)	(0.8%)
Natural Gas Stocks-Working Gas Underground Storage (Bcf)	2,729	2,634	95	4%
Total Drilled But Uncompleted Wells (DUC-Last Month)	4,834	4,834	0	-

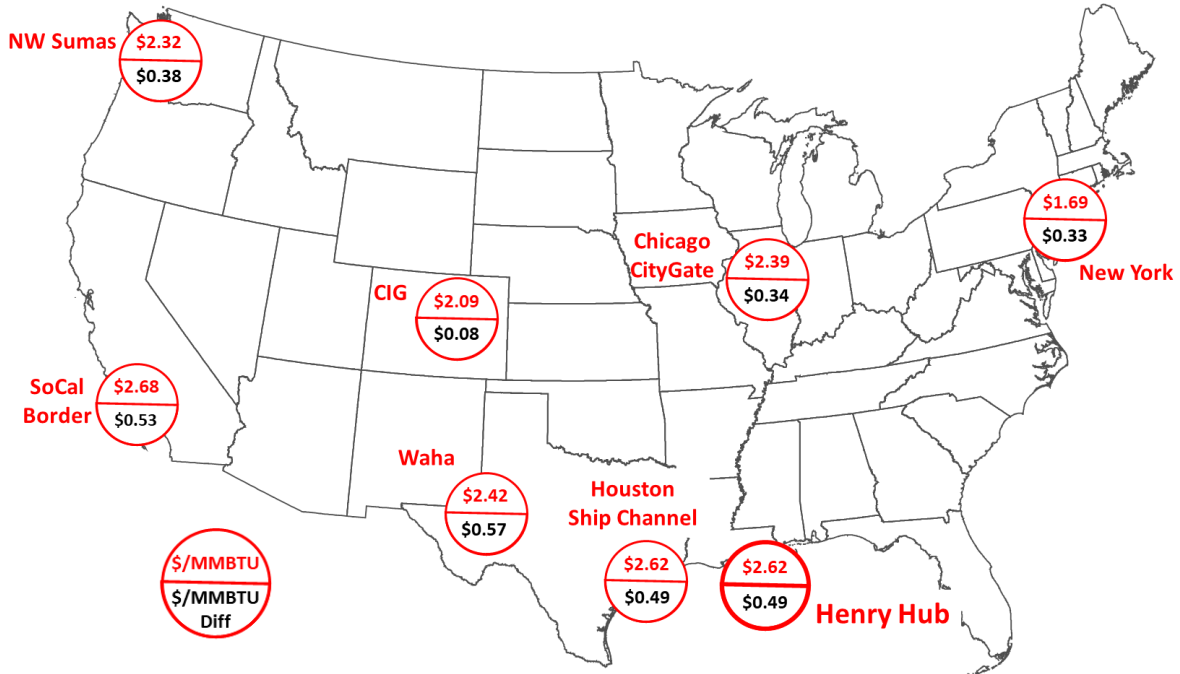
*Source—Energy Information Administration, United States (EIA)

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

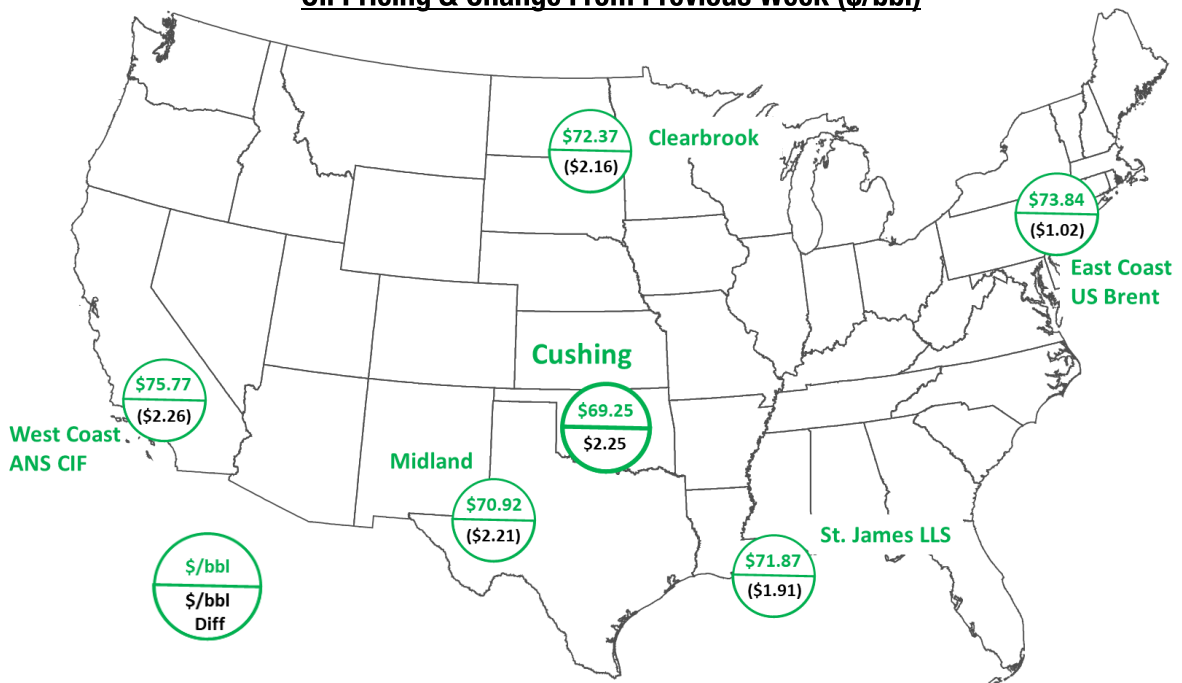


US COMMODITY PRICES CONTINUED

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



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



*Source—Bloomberg LP



SELECTED INDUSTRY HEADLINES

EI Releases Statistical Review Of World Energy

The Energy Institute (EI) has recently released its first, and the overall 72nd, annual edition of the Statistical Review of World Energy, noting five key themes to emerge from the data.

Oil And Natural Gas Prices Rise After Weekend Of Turmoil In Russia

Oil and natural gas prices climbed recently, while wheat prices briefly spiked higher, as investors reacted to the weekend's brief and chaotic insurrection in Russia.

European Gas Prices Rise as Russian Mutiny Adds to Supply Fear

European natural gas fell, reversing an earlier gain, as traders assessed whether a short-lived rebellion in Russia would have any impact on supply.

Oil Prices Edge Lower On Interest Rate Hike Worries (LOGIN CREDENTIALS REQUIRED)

Oil prices slipped recently on signals that the European Central Bank is not done with interest rate hikes, while investors awaited data that could shed light on U.S. fuel consumption during the peak summer.

Russia's Crude Oil Exports Dip By Nearly 1 Million Bpd

Russian crude oil exports by sea plunged by as much as 980,000 barrels per day (bpd) recently, although the dip was much more likely due to maintenance at a key export terminal rather than the promised cut in Russia's crude oil production.

Fossil Fuel Leaders Say Transition To "Green Future" Will Require More Natural Gas

The biggest fossil fuel players are making the message clear: the transition to a green future will require much more natural gas.

Why Natural Gas Makes the US Power Grid Vulnerable (LOGIN CREDENTIALS REQUIRED)

Natural gas generation can seize up when a climate calamity hits, endangering the country's swiftly electrifying economy due to a disproportionate share of outages when the weather gets rough.

U.S. Sets New Record In LNG Export Capacity

Amid rising global demand and increased long-term contracting, the U.S. is on track to approve a record volume of LNG export capacity in the first half of 2023, beating the full-year record of approved volumes from 2014.

Israel Reignites Debate On How Much Natural Gas To Sell Abroad

Israel should urgently examine how much natural gas the country should export to make sure it keeps enough for itself, a senior official at Israel's Finance Ministry said in a letter seen by Reuters.

Texas Oil and Gas Employment Growth in May Highest in 33 Years

Data from the Texas Workforce Commission (TWC) has shown that upstream oil and natural gas employment in the state surged by 6,900 jobs in May, the highest single month reported job growth in the 33 years of data available on TWC's website, the Texas Oil & Gas Association (TXOGA) highlighted.

Could Guyana Become South America's Wealthiest Nation

Guyana has seen its economy explode with growth due to major offshore oil discoveries, reaching 400,000 barrels of oil production per day and is forecast to overtake Uruguay as South America's wealthiest country.

Why U.S. Supertanker Rates Are Spiking

After sinking to fresh lows in the early part of the year, freight rates for U.S.-loading supertankers have skyrocketed as Asian refiners turn to the U.S. market amid production cuts elsewhere.



SELECTED RECENT TRANSACTIONS

Civitas Resources to Enter Permian Basin through Transformative Transactions

Civitas has also agreed to purchase Hibernia's Midland Basin assets for \$2.25 billion in cash, subject to customary purchase price adjustments.

SM Energy Company Announces Certain Second Quarter 2023 Activity And Acquired 6,300 Net Acres In The Midland Basin

The Company's Midland Basin assets are located in the Permian Basin in West Texas is comprised of approximately 80,000 net acres.

Riverbend Energy Group Announces Acquisition to Mark the Rebuilding of Its Non-Operated Energy Strategy

Riverbend Energy Group, via certain of its affiliates, announced today the acquisition of a sizeable non-operated working interest position in the core of the Williston Basin.

Earthstone Energy Announces \$1.0 Billion Delaware Basin Acquisition

Earthstone Energy, Inc. recently announced that it has entered into an agreement to acquire Novo Oil & Gas Holdings, LLC, a privately-held Delaware Basin focused E&P company backed by EnCap Investments L.P., for \$1.5 billion.

Westlawn Group Forms Ellipsis U.S. Onshore Holdings To Acquire Assets Located In The Delaware Basin

Westlawn Group, LLC is pleased to announce the formation of Ellipsis U.S. Onshore Holdings, LLC. Headquartered in Dallas, Texas, Ellipsis is a private energy company formed to pursue the acquisition and development of large, producing oil and natural gas assets in the United States.

Lucero Energy Corp. Announces US\$104.6 Million Asset Disposition, Revised 2023 Guidance And Normal Course Issuer Bid

Lucero Energy Corp. is pleased to announce the Company has executed and closed a definitive purchase and sale agreement with an arm's length purchaser, to divest of certain non-strategic, non-operated assets within Lucero's North Dakota Bakken/Three Forks play for cash consideration of C\$140.2 million before customary closing adjustments.

CNX Resources To Sell Various Non-Operated Producing Oil And Gas Assets Primarily Located In The Appalachian Basin

A subsidiary of CNX Resources Corporation entered into a definitive purchase sales agreement to sell various non-operated producing oil and gas assets primarily located in the Appalachian basin to a third party. The Company expects the transaction to close in the second quarter of 2023 and result in cash proceeds of approximately \$125 million.

Chord Energy Divests Permian Assets to Private E&P

Chord Energy is selling non-core acreage and wells, primarily in the Central Basin Platform, to private E&P BCP Resources, which is focused on developing and optimizing legacy assets.

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

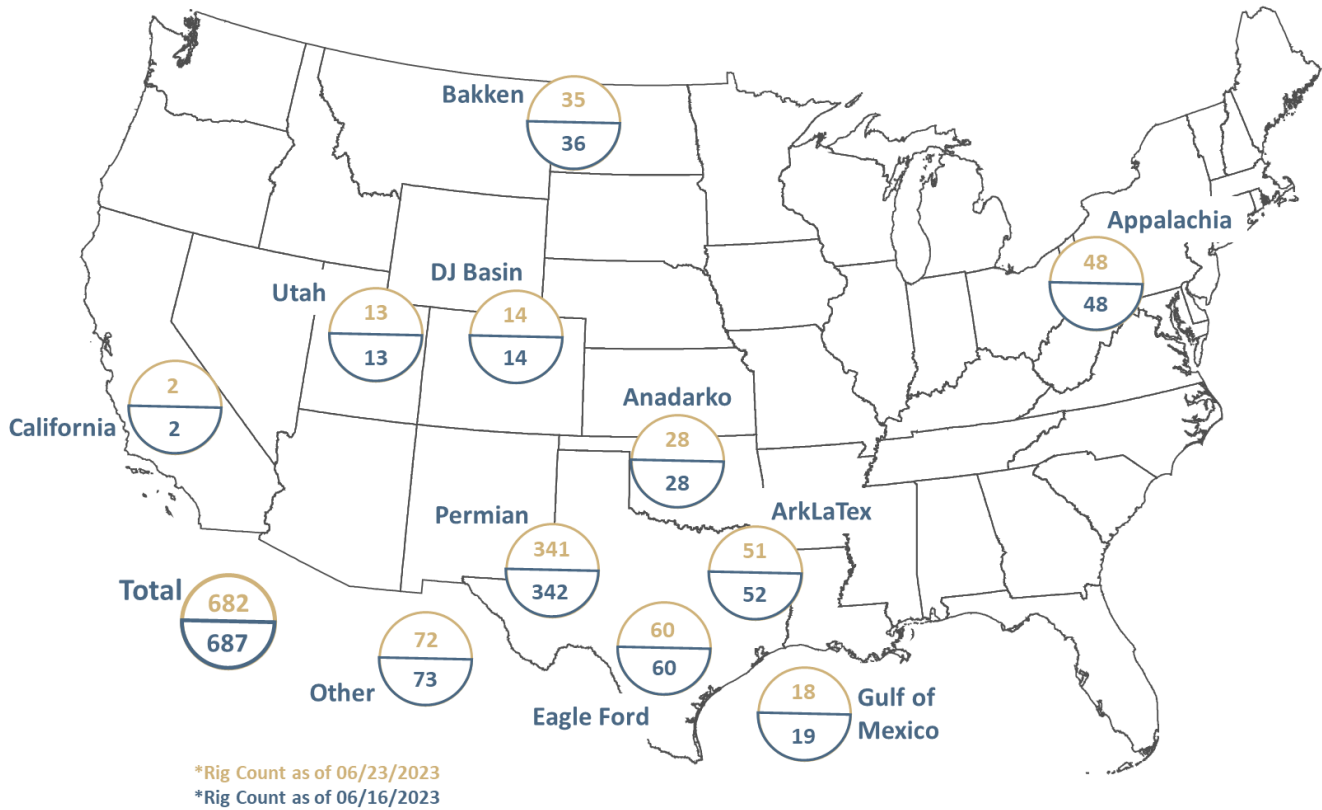
As part of their recent transaction, PureWest Energy, LLC has closed on a divestiture of producing wellbores to investment vehicles managed by Wincoram Asset Management.

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.



RIG ACTIVITY BY US REGION

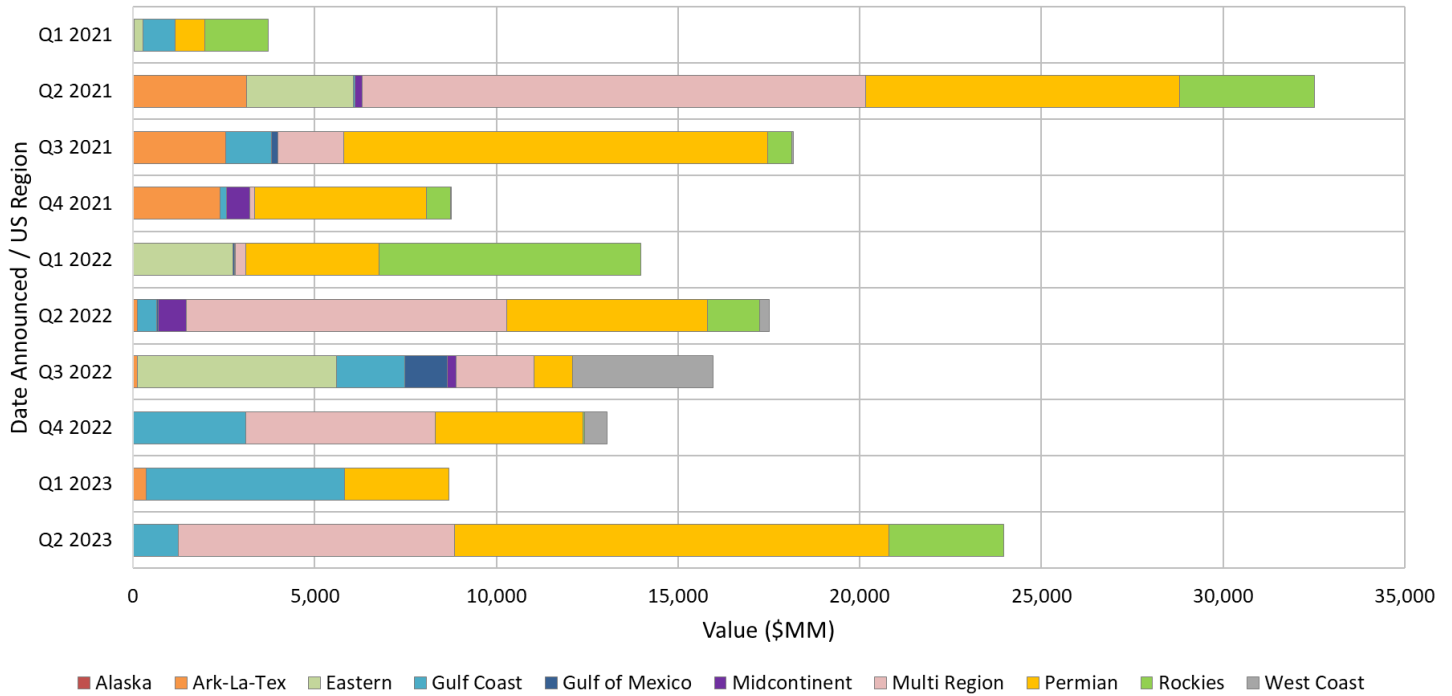


	Week Ending 06/23/2023		Week Ending 06/16/2023		Week Ending 06/24/2022
U.S. Rig Breakouts	Count	+/-	Count	+/-	Count
Oil	546	(6)	552	(48)	594
Gas	130	0	130	(27)	157
Not Specified	6	1	5	4	2
Directional	50	(2)	52	9	41
Horizontal	613	(2)	615	(72)	685
Vertical	19	(1)	20	(8)	27
Land (Inc Others)	661	(4)	665	(73)	734
Inland Waters	2	0	2	(1)	3
Offshore	19	(1)	20	3	16
US Total	682	(5)	687	(71)	753

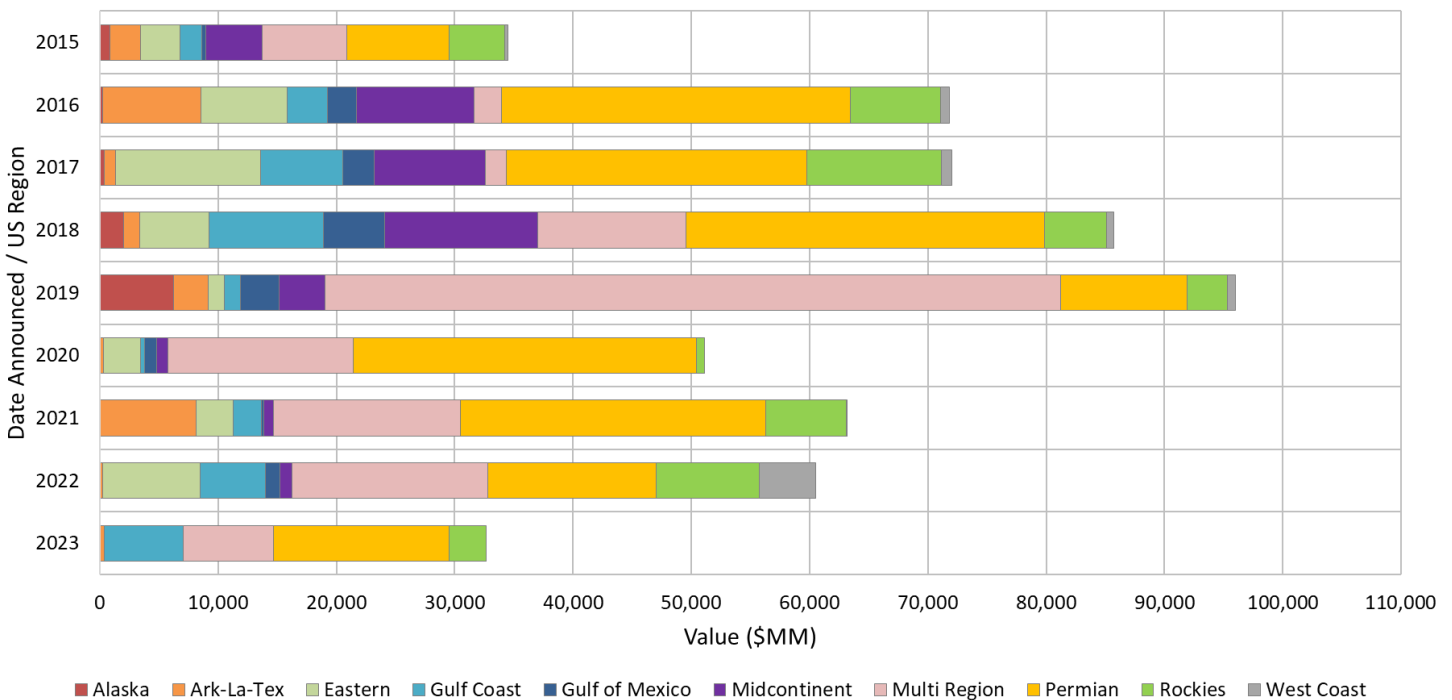
*Source—Baker Hughes Weekly Rig Counts



DEAL VALUE BY US REGION (BY QUARTER)



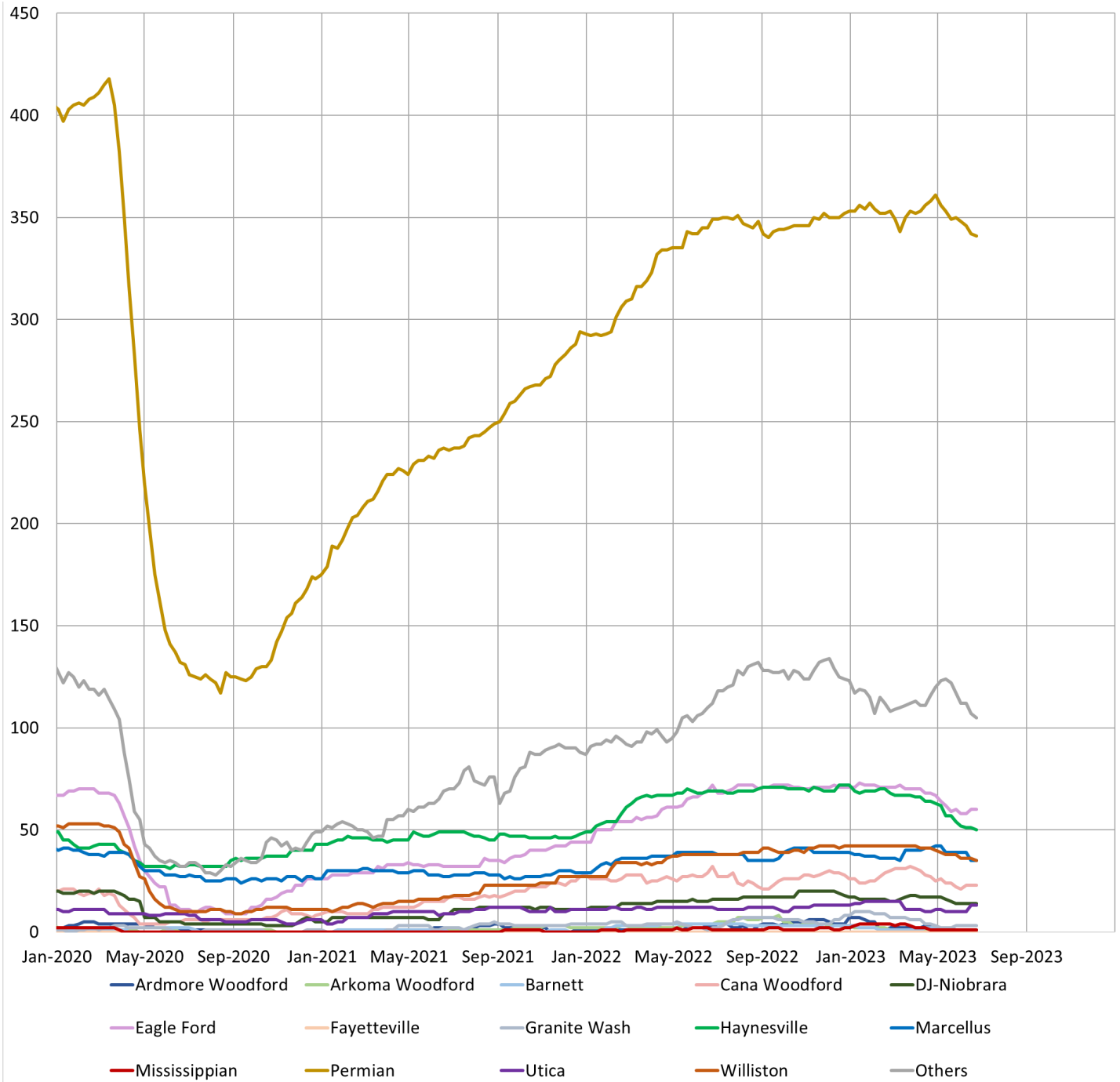
DEAL VALUE BY US REGION (BY YEAR)



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



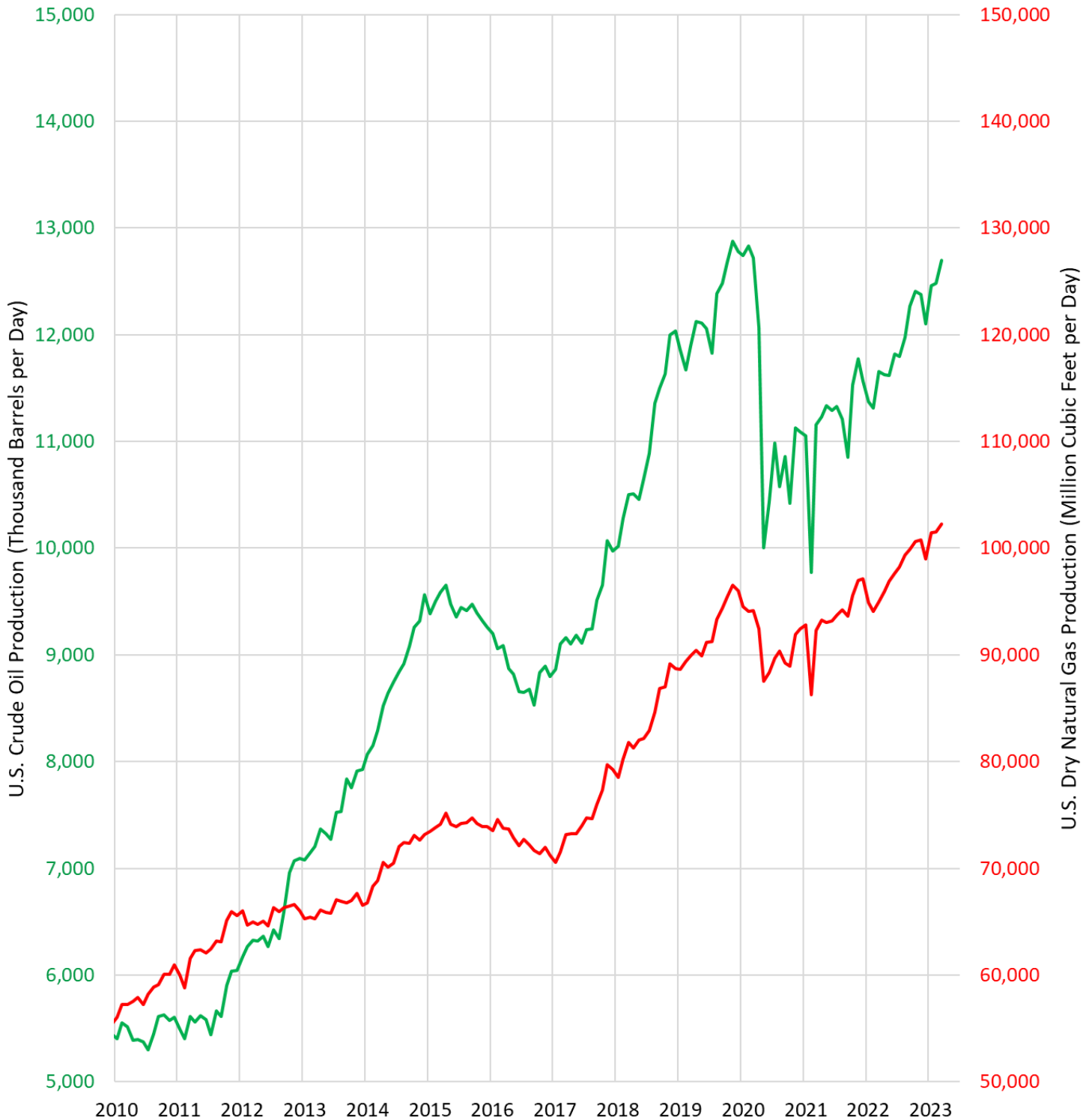
RIG ACTIVITY BY US REGION



*Source—Baker Hughes Weekly Rig Counts



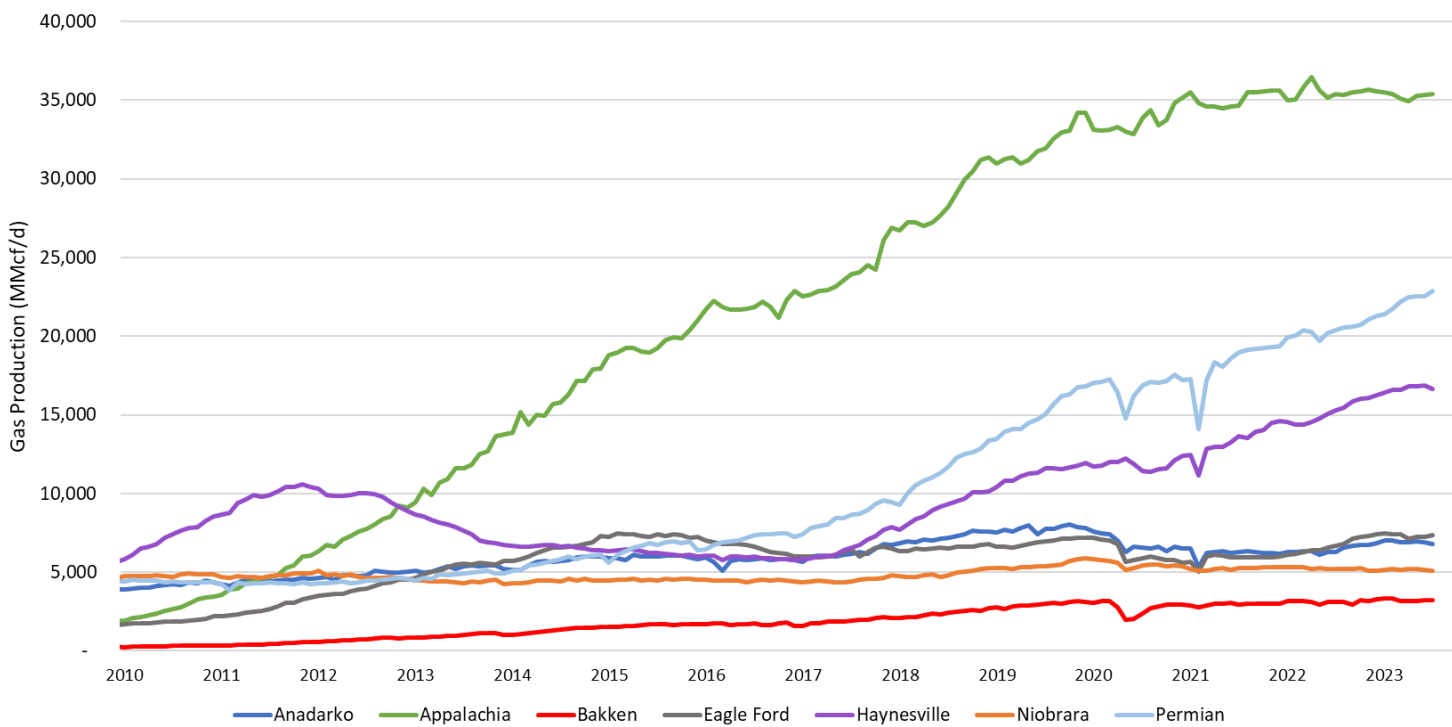
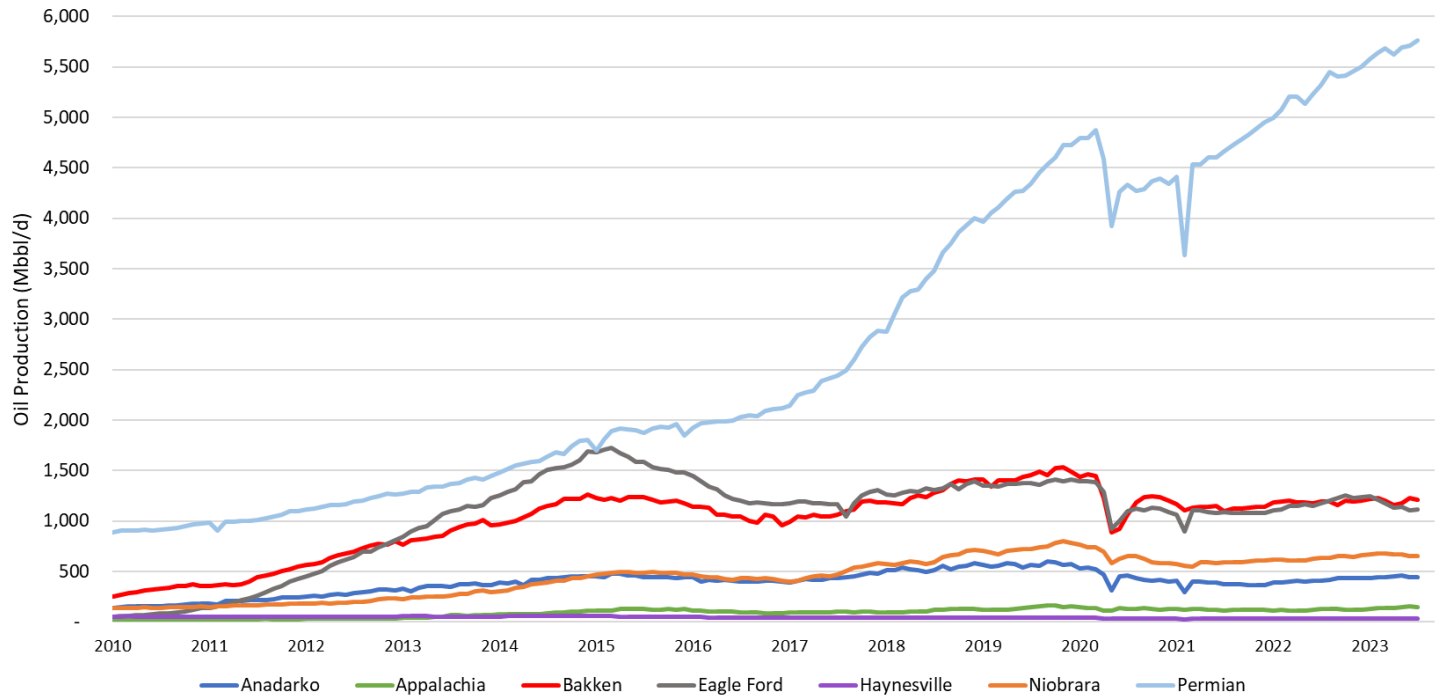
US DAILY CRUDE (MMbbl) & DRY NATURAL GAS PRODUCTION (MMcf)



*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

[Telluride Executive Series](#)

June 27-29

Telluride, CO

July 2023

Banff Energy Summit

July 12-14

Banff, Alberta, Canada

August 2023

[Enercom Denver](#)

August 14-16

Denver, CO

[TXCPA Energy Conference](#)

August 25

Houston, TX

September 2023

[Enertia User Conference](#)

September 21-22

Fort Lauderdale, FL

[HPF 29th Annual Golf Tournament](#)

September 25

Cypress, TX

[World Oilman's Overnight Poker Tournament \(WOOP\)](#)

September 28-29

Lake Charles, LA

*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.

