



LEGENDS

Leaders and Innovators Who Made This Industry Great

A Supplement To

Oil and Gas
Investor

A supplement to
**Oil and Gas
Investor**

1616 S. Voss, Suite 1000
Houston, Texas 77057-2627
713-260-6400 Fax: 713-840-8585
www.oilandgasinvestor.com

Editor-In-Chief

LESLIE HAINES
lhaines@hartenergy.com

Managing Editor

SUSAN KLANN
sklann@hartenergy.com

Editor At Large

NISSA DARBONNE

Corporate Art Director

ALEXA SANDERS

Oil and Gas Investor Art Director

MARC CONLY

Senior Graphic Designer

ROBERT D. AVILA

Photography

LOWELL GEORGIA

Production Director

JO POOL
jpool@hartenergy.com

For additional copies of this publication,
contact customer service at 713-260-6442.
custserve@hartenergy.com

Publisher

SHELLEY LAMB
slamb@hartenergy.com

Regional Sales Manager

MORGAN MASCIIO
mmascio@hartenergy.com

Regional Sales Manager

BOB MCGARR
bmcgarr@hartenergy.com

Director of Business Development

ERIC ROTH
eroth@hartenergy.com

HARTENERGY

Sr. Vice President, Hart Consulting Group

E. KRISTINE KLAVERS

Executive Vice President

FREDERICK L. POTTER

President and COO

KEVIN F. HIGGINS

Chief Executive Officer

RICHARD A. EICHLER

Copyright 2012, *Oil and Gas Investor*
Hart Energy Publishing LP, Houston, Texas

HONORING THE LEGENDS



The greatest privilege—and most fun—that any editor has is to meet and get to know the legendary executives of the oil and gas industry. Here are 48 of them, plus one bonus, George P. Mitchell, the “father” of the shale revolution now changing the industry so dramatically in North America.

These people form the backbone of the companies that have made, or are still making, a difference. They are invariably sharp as a tack, totally engaged, quick-witted and funny, and full of energy that belies their decades of experience.

Some are truly retired after having run several companies through the years. They still mentor others and do investing. But I find that most never really retire completely. They frequently serve as board members or university advisors or consultants. Some have written books following their passion for the truth about oil and gas, and the role it plays in the worldwide economy.

All give generously of their time and are great philanthropists.

You can learn a lot from them. Many have gone bust, or nearly so—sometimes more than once. I can’t tell you how many of these 48 Legends have said the main lesson they learned through the bust-boom cycles was to reduce debt, or have none at all.

I love their advice:

- Take the toughest job no one else wants and soon, management will notice you.
- Tie your shoes such that they stay tied, whether you are playing tennis or in the office all day.
- Asset allocation is the thing that will make or break you.
- Original thinking is as important as science.
- Always sit down face to face...there’s a real temptation not to.

Many of these Legends have been honored by their peers or by their alma maters, in one way or another. Some of them have their names on buildings—whether colleges or hospitals or stadiums. For *Oil and Gas Investor* and its readers, it is an honor to know them.

--Leslie Haines,
Editor-in-chief,
Oil and Gas Investor



TABLE OF CONTENTS

2008

A.V. Jones Jr., <i>January</i>	2	John Masters, <i>July</i>	10
L. Frank Pitts, <i>February</i>	3	Gene Ames, <i>August</i>	11
John Brock III, <i>March</i>	4	Jim Wallace, <i>September</i>	12
Pete Stark, <i>April</i>	6	Thurmon Address, <i>October</i>	14
Sandy McCormick, <i>May</i>	7	Jim Henry, <i>November</i>	14
Joe Foster, <i>June</i>	9	Frank Reinhardt, <i>December</i>	17

2009

Forrest Hoglund, <i>January</i>	18	Pete Matuszczak, <i>July</i>	26
Bob Wagner, <i>February</i>	21	David Griffin, <i>August</i>	28
Gene Van Dyke, <i>March</i>	22	Leighton Steward, <i>September</i>	29
Robert Hefner III, <i>April</i>	23	Kenneth Danneberg, <i>October</i>	30
Clayton Williams Jr., <i>May</i>	24	Bill Barrett, <i>November</i>	31
Marlan Downey, <i>June</i>	25	Jon Rex Jones, <i>December</i>	32

2010

Evy Goyanes, <i>January</i>	34	Ted Collins, <i>July</i>	42
Pat French, <i>February</i>	36	Carroll Suggs, <i>August</i>	45
Gene Powell, <i>March</i>	37	Hank Gruy, <i>September</i>	46
Lew Ward, <i>April</i>	38	Bill Marshall, <i>October</i>	47
George Alcorn, <i>May</i>	40	L. Decker Dawson, <i>November</i>	48
Claude Cooke, <i>June</i>	41	Walter Williams, <i>December</i>	49

2011

Lou Powers, <i>January</i>	50	Charlie Stephenson, <i>July</i>	57
Jon Brumley, <i>February</i>	51	Lowell Georgia, <i>August</i>	58
J.P. Bryan, <i>March</i>	52	Fred Julander, <i>September</i>	60
Dick Lowe, <i>April</i>	53	Charley Maxwell, <i>October</i>	63
Arlen Edgar, <i>May</i>	55	John Olson, <i>November</i>	64
David Bole, <i>June</i>	56	Curtis Mewbourne, <i>December</i>	65

Executive Q&A with George Mitchell, <i>November 2010</i>	66
--	----

A.V. JONES JR.

A.V. Jones Jr. says he is a very high-energy guy and people wonder on any given day if he is working or playing. “I’ve done this with intensity for a long time,” he says of his career as an operator, financial engineer and industry leader.

It’s in his blood. Jones’ father entered the oil business in 1932 in Albany, Texas, northeast of Abilene. He graduated from the University of Oklahoma with a B.S. in geology, as did A.V. and brother Jon Rex, both well-known oilmen. Today the Jones family still bases numerous energy operations in Albany.

A.V. has owned and operated a string of E&P companies, including Van Operating Ltd. today. But alongside the family entities, Jones has always backed young, smart start-ups in a number of venture-capital investments. These include Globex Energy Inc., an E&P firm with assets offshore Africa that was sold to Marathon Oil Co. for \$155 million in 2002; JM Petroleum Corp., a crude oil buyer run by Triton Energy’s Jim Musselman, who sold it for \$70 million; and midstream company Taurus Energy Corp.

Ten years ago, Jones co-founded private-equity firm Quantum Energy Partners in Houston with Wil VanLoh and Toby Neugebauer. Today as a special advisor, he assists Quantum with deal sourcing and is a valued sounding board on technical and operational matters.

Jones has been active in many industry organizations. He is a director of the American Petroleum Institute (API) and on the National Petroleum Council, appointed by the U.S. energy secretary. In 1975-77 he was chairman of the IPAA and is a former president of the West Central Texas Oil & Gas Association.

In 1985, he was named Chief Roughneck by the IPAA and Lone Star Steel Co.

Investor You’ve backed a lot of start-ups during the past 40 years. Why do it now through a private-equity aggregator like Quantum?

Jones We’ve always kept some Jones-oriented companies going all along, but always backed other people in various endeavors as well. We were doing as much as we could comfortably and yet knew there were other special opportunities and people out there. It’s been a tie between our own stuff and the other people we backed, in terms of money and time spent. My business life has been a pattern of finding good young people—like Wil and Toby when we started Quantum 10 years ago. They have been good partners and the results have been great.

I’d say 90% of what I do on a daily basis now is supporting Quantum Energy Partners. By the way, to be clear, I am not at all involved with Quantum Resources (the \$1-billion fund headed by Don Wolf in Denver).



We are on Quantum’s \$1.32-billion Fund IV now. There is an infinite number of opportunities and sorting through them and keeping them going is a full-time job for Quantum’s staff. Since headquarters for Quantum is in Houston, Wil does most of the heavy lifting as the managing partner, and he’s doing a fine job. That gives Toby and me time and freedom to do what we do best.

It also keeps me young. Imagine, Quantum has some \$3 billion of assets under management now. Managing that kind of money is no walk in the park, but we have a talented team of technical and financial professionals with an excellent track record.

Investor You still have Van Operating. Do you prefer drilling or backing people financially?

Jones Twenty-five years ago, I would have said there’s nothing like drilling a well yourself that could change your lifestyle. One well could change your future. It was so exciting. But I also really enjoy putting something interesting together with good people.

For instance, in Fund II we partnered with Jack Hightower and his team at Celero Energy. Together, we made two very good acquisitions of legacy assets and sold the whole package for approximately \$800 million. That’s equally exciting.

Investor No more wildcatting?

Jones You’re not going to go out and find big reserves like they did in the 1940s, ’50s and ’60s. But we’ll still have some wildcatting as long as we have an oil business. Some future breakthrough like 3-D will be the catalyst. And we’ll have more of these interesting new plays like the Barnett and Fayetteville shales.

Investor You like the shales?

Jones You bet. We’re backing Roger Biemans (former head of EnCana USA) in his new company called Vantage Energy LLC. That’s in our Fund IV and is typical of what we do in backing top-flight teams. Vantage is very active in the Barnett and other plays.

Investor What advice did your father give you?

Jones Whatever you do, don’t run out of money! Something will come along you’ll want to take advantage of. I’ve seen people get overextended by debt over and over again and have to sell at a loss. Asset allocation is the thing that will make or break you. You’ve got to have credibility, know what you’re doing and treat people right.

Investor You had to like OU this past season.

Jones Oh yes, I love the Sooners. And, every fall I go to a lot of high school games, not just in Albany but elsewhere. I love to watch them play.

L. FRANK PITTS

L. Frank Pitts has drilled more than 3,000 oil and gas wells during his lifetime, most of them in Texas. At age 97, he still gets fired up about things: the potential to drill more, and the short-sightedness of politicians who block the industry from doing so.

His frustration with limits to land access has been lasting, ever since he formed a speaker's bureau in 1975 to push for gas deregulation and to educate the American public about the benefits of natural gas. That year, the group gave more than 1,000 interviews and speeches around the nation.

He also published a map showing the basins prospective for oil and gas that were off-limits to drilling. (Most are still off-limits today.) He gave away more than 1 million of those maps.

Due to his efforts, he has been called Mr. Tipro (Texas Independent Producers and Royalty Owners Association), an oilman's oilman, and a legend by Texas Gov. Rick Perry. In 1973, he changed the Texas gas sales contract, enabling producers to receive more for their gas at the wellhead. He finally persuaded the federal government to decontrol natural gas prices in 1978.

The Dallas company he founded, Pitts Oil Co., drilled 33 wells in 2007 and plans a similar number this year. Daily operations are run by exploration manager David Martineau, who has been with the firm 35 years, and Pitts' son-in-law, William Custard, who is president and CEO. But Pitts still comes to the office three days a week to look things over and attend meetings.

Born in Copiah County, Mississippi, Pitts worked his way through two years at the local community college by selling paint. His father was a successful county politician, so at an early age, Pitts learned a thing or two about politics.

Investor Frank, what would you tell our next president?

Pitts Get as many wells drilled as you can get drilled. Offshore and onshore. On the west side of Florida, no well can be drilled. From the tip of Florida to Canada, you can't drill. Back in the 1960s, I purchased and was president of a geophysical company, Exploration Surveys Inc. We had a contract with major producers to do seismic work. I can tell you, a number of areas indicated potential. The structures were identified but never drilled. You take our west coast from California clear north—we had production there and we had to close it down. That's silly.

Investor You have always been an industry advocate.

Pitts In Atlanta once, in a single day, I gave interviews to *The Atlanta Constitution*, three radio stations and a national television station.

Investor What start-up advice would you give today?

Pitts No. 1, start small, as I did, for example. Do something that you can do yourself, personally well. Don't



have a lot of debt. I grew up in a poor family, when a dollar was worth a dollar, and I haven't forgotten that. I don't believe in borrowing money if I can help it.

Investor Should people buy or drill?

Pitts In my case, I'd rather drill. I have done both. For about 10 years, I did acquisitions with [EnCap Investment's] David Miller and those boys—they are people who know how to do it.

Investor Anything you'd do differently?

Pitts I would use more technology. I'm urging my fellas to do that. It's tremendously important.

Investor You were in the Barnett early, right?

Pitts It's fabulous. I tell you frankly, I didn't believe in it at first. I owned leases in Wise County in the early 1980s. George Mitchell wanted to drill a shale well on one of them and I wouldn't put my money in it. Now I've learned my lesson. We drilled 100 wells in Denton County in the early days. George owned the majority of it.

Investor You didn't have an oil and gas background. How did you get into this?

Pitts Because I had a cousin in Dallas in the paint business. I started selling do-it-yourself paint in Mississippi to work my way through college. Then he moved to Chicago, and he asked me to come. We opened a new paint store inside the Loop and made a profit the very first day. This was 1931. First thing you know, we had 100 individually owned stores.

Investor When did you drill your first well?

Pitts By 1940, I was president of the paint company and making quite a bit of money for a country boy, so I started drilling wells with a contractor in Illinois and Indiana. Nothing but dry holes. Then at the Chicago Athletic Club, I met head of the minerals division of the First National Bank of Chicago, and he had a man with three deals in Texas come visit me, with some leases to drill.

The first one was in South Texas. It was dry. The second, in West Texas, was dry. But the third, in Montague County in North Texas, near Bowie, was good. So that put me in the oil business, and I didn't know one dog-gone thing about it.

We opened an office in Bowie, hired an accountant and started drilling. In 1942, we drilled 40 wells in that area. I was still president of the paint company at that time, but this seemed like a good business. By 1948, I moved my family to Dallas.

Investor And you're still at it today.

Pitts I love this industry. It's not a dead horse at all. There's a lot more oil and a lot more gas to drill. Ten years ago, who would have thought we'd have all these gas wells in Denton County? In Wise County? Oh, you've got me fired up. Too bad I'm almost 100.

JOHN B. BROCK III

John B. Brock III was in the oil and gas business for nearly 50 years, building big companies and legacy assets. Looking back, he is most proud of two things.

First, the firm he once helmed, United Meridian, dared to venture offshore West Africa when other independents weren't, and when West Africa was not the hot spot it is today. It found the 1-billion-barrel Zafiro Field offshore Equatorial Guinea in 1995 as a result.

Second, but to Brock this is even more important: at least 10 of his colleagues from the United Meridian-Ocean Energy Corp. days became public energy-company CEOs and five are still CEOs of successful independents themselves. "People are always most important," he says.

Now retired, he enjoys following what these former colleagues are doing. They include Don Wolf of Denver-based Quantum Energy Resources, and Houston-based John Schiller of Energy XXI, Bill Transier of Endeavour International, Jim Hackett of Anadarko Petroleum Corp. and Jim Flores of Plains Exploration & Production Co.

A 1954 petroleum engineering graduate of Louisiana State University, Brock first worked for Humble Oil, an Exxon predecessor, and in 1956 joined what is now Chevron. Next, he worked with Quintana Petroleum, and formed Brock Petroleum Co. in 1980.

He merged it with Ensourage in 1985. United Meridian bought Ensourage in 1989 and those assets were rolled up with others to form UMC Petroleum, which went public in 1993. Denver's General Atlantic went public under Wolf at about the same time and, in 1994, the companies merged.

In 1998, UMC merged with Louisiana independent Flores & Rucks, which was later renamed Ocean Energy and then merged with Seagull Energy, whose CEO, Hackett, took that position at the combined company, Flores became chairman, and Brock and former Seagull chairman Barry Galt remained on the board.

Finally, in 2003, Ocean and Devon Energy Corp. merged, creating the largest U.S. independent at the time with an enterprise value of \$20 billion.

In addition to investing, hunting and spending time with his extended family—John VI is now six months old—Brock sits on some boards, such as at Amegy Bank. A dedicated LSU Tigers fan, he received the LSU Foundation President's Award for lifetime support at the trendsetter level and in 1994 was inducted into LSU's Hall of Distinction.

Here, he visits with Oil and Gas Investor on his observations of the energy industry past, present and future.

Investor Would you ever want to start an E&P company again?

Brock I think I've done my thing. But today it's a won-



derful world for the E&P guy. These oil and gas prices are to die for, and the capital is available. It's marvelous.

Investor What advice would you have for any one starting up?

Brock My advice would be not to be a pure exploration company or a pure exploitation company, but to have a balance of both. I think Devon is a marvelous company and it seems to me they have the perfect mix, with the Barnett shale—they have a thousand locations to drill there—and in the deepwater Gulf, where they have the most acreage of any independent. And they have some strong international assets as well.

When Larry Nichols [chairman and CEO of Devon] made the decision to sell out of West Africa, it stabbed me in the heart. Those were my deals! But in retrospect, he is doing the right thing. They can't do everything.

Investor How did the small UMC get into West Africa?

Brock I'm proud of what we did there. In the early 1990s, not that much was happening there. Everybody had dropped their acreage and left. And the U.S. industry was in the ditch. The U.K. industry was in the ditch. We just didn't see that much growth possible in the U.S.

Our consulting geologist, Ted Barr, knew about some old seismic data that Repsol had shot and Petroconsultants [now IHS] had stashed in a basement in Geneva. Ted brought the idea to UMC and we acquired the data.

I was walking by our conference room one day and heard the guys were pretty excited, so I ducked in and looked at the maps they had on Equatorial Guinea—it was the best thing I'd ever seen in my career. The acreage was open. The next flight there was Saturday. This was Thursday. I told them to get on that flight and take it all.

We turned the prospect to Mobil at the time, and lo and behold the second well we drilled was Zafiro Field, which will turn out to be above a billion barrels of oil. We also found Esmeralda there. Then, offshore Core d'Ivoire, we found the Panther, Lion, and CI-01 fields.

Investor What was the hardest decision you ever made?

Brock To give up Ocean, which was a fine company after all the acquisitions and mergers we'd made, and with its outstanding management and board. The argument was so compelling, to sell it to a company like Devon that was going to rise up. It was the right thing to do at the right time. But it was a hard decision to make.

Investor What's your outlook for the U.S. gas industry?

Brock U.S. companies have a track record of overbuilding capacity. The big issue is, what is the demand at \$7 or \$8 gas? We don't know. It won't be the U.S. that dictates prices, not even for LNG. I'm worried about that effect on U.S. gas prices—I don't think it's going to be real smooth when all that LNG starts arriving here.



PETE STARK

Dr. Philip H. (Pete) Stark is vice president of industry relations for IHS in Englewood, Colorado, the provider of global field production and drilling data. Since joining IHS in 1969, he has held several senior management positions, including marketing and international operations.

But what Stark really is is a watchdog who follows oil and gas developments globally. As such, he is the architect and moderator of IHS Perspectives programs held in energy cities, providing analysis on global energy activity and supply and demand. He is also an advisor to the IHS Expert Source Program, which is a formal thought-leadership program.

"I haven't found a lot of oil, but I have helped the people who do find it," he says, "by making a conscious decision to go into enhancing the world's oil-data systems."

Stark has written papers and spoken on the standardization and veracity of E&P databases, information-management trends and industry-data standards, horizontal drilling, U.S. natural gas productivity, global energy supply and demand, global petroleum industry trends and unconventional oil and gas resources.

He began his career as an exploration geologist and computer guru at Mobil Corp., after being a roustabout during the summers while attending the University of Oklahoma. He graduated from OU in 1958 with a bachelor's in geology, and earned his master's and doctorate in geology in 1963 from the University of Wisconsin. Recently, Wisconsin's Department of Geology and Geophysics honored Stark's contributions to the university and profession with a Distinguished Alumni Award.

Investor Pete, you've been tracking macro-data for the world for a long time. What do you make of \$100 oil?

Stark I was surprised, because in our data at IHS on basic supply and demand, we do not see a severe supply crunch at the moment, or in the near term, to support this level of anxiety.

Investor You don't buy a supply crunch?

Stark No, not during the next decade. We do a bottom-up assessment of all announced major liquids projects in the world, assuming normal business conditions and that these projects will be completed at the volumes those companies or countries have promised, and supply looks adequate through 2017 and likely beyond. By the way, that includes oil, gas and NGLs. We do not have a shortage of oil resources, but unpredictable geopolitical factors could inhibit the progression of these projects.

Investor There's a problem with reserves data too.

Stark We analyzed official country reserves data (2P) as reported for 98 countries for 2004-05. It was amazing. Essentially, 39 countries had not changed their reserve number for five years—and 17 of them had not changed their data in 15 years!



One African country had reported the same reserves for 12 years, even though its annual production had grown to a level 10 times larger than the official reserves! A Middle East producer reported the same reserves for 15 years even though it produced more than 10 billion barrels in the period.

This lack of transparency in official reserves gives rise to uncertainties and anxieties that drive today's high oil prices and doubts about future supply.

Investor What about unconventional gas in the U.S.?

Stark It's going to be absolutely critical for U.S. gas supplies. Consequently, I'm not sure why natural gas is so overlooked from a policy point

of view. Politicians want to deny access to domestic gas resources and they want to tax clean natural gas to subsidize alternate energy sources.

Investor What about the U.S. gas picture concerns you?

Stark Last fall at an energy conference at Louisiana State University, I documented that the Gulf Coast region (onshore and offshore) had lost almost 8 billion cubic feet (Bcf) of daily production during the past eight years. That appears to be offsetting all the increased gas production we see from the Rockies of about 5- or 6 Bcf a day, and from the Fort Worth Basin. Recent developments like the Independence Hub have come onstream, adding about 1 Bcf a day to Gulf production.

Unless major new high-volume plays like the Pinedale Anticline develop, or breakthroughs in recovery technologies come along, more gas wells must be drilled every year to sustain U.S. gas supplies, and I don't know if government regulations will allow it.

Our data show that, at the end of 2007, about half of daily U.S. gas consumed was coming from wells drilled during the past 40 months. In 2006, we had to drill almost 30,000 gas wells to finally boost U.S. gas production to the 2002 level.

This is basic, but startling, information for us to swallow. Hopefully, our policy-makers will not overreact to the challenges of balancing energy security and climate-change concerns.

Investor Do you follow alternative energy?

Stark Yes. It is clear that alternative energy must be part of our evolving energy security and carbon-reduction plans. But without dramatic technology breakthroughs, it will be difficult to achieve some of the lofty perceptions.

There's a lack of appreciation for the scale of energy we need, in the minds of the politicians and the public, to replace the amount of oil, gas and coal needed to drive the U.S. economy.

I'm very concerned about the gap between political rhetoric and the energy and carbon-reduction realities that must be addressed.

SANDY McCORMICK

Sanford E. McCormick is back, this time as chairman of Rimrock Energy LLC in Denver. After more than 40 years in the oil and gas business, including heading up public and private E&P companies in the 1970s and '80s, he had more or less retired a few years ago. But shales, other unconventional plays and new technologies have lured him back.

McCormick, along with wife Barbara, Rimrock's corporate secretary, joined chief executive officer Terry Dobkins and chief financial officer Wallace G. Wilson, contributing their own equity, and raising \$250 million from Bear Stearns Merchant Banking (BSMB) and Natural Gas Partners (NGP), to form Rimrock in August 2007. The company also has an office in Fort Worth.

Through networking at NAPE, McCormick hooked up with Dobkins, formerly with Antero Resources Corp., a highly successful Barnett shale player. They are assembling a world-class team that includes George E. King as senior vice president, engineering. King is an SPE Distinguished Lecturer.

McCormick came out of retirement because he loves the cutting edge. He founded McCormick Oil & Gas Co. in 1964 and listed it on the American Stock Exchange. From 1970-82, it conducted one of the industry's most successful public drilling programs. In 1976, it discovered Oak Hill Field in Rusk and Panola counties, East Texas. It has reserves of more than 1 trillion cubic feet of gas and still produces today. At Oak Hill, McCormick conducted the first hydraulic frac stimulation that used more than 1 million pounds of sand.

From 1982-85, McCormick rolled up the drilling partnerships to form the second upstream public MLP ever, after Apache Corp.'s. He sold it in 1985 and formed privately held McCormick Resources Inc., which led a six-company consortium to try horizontal drilling in five basins where it had never been tested. Throughout the 1990s, McCormick focused on international coalbed-methane opportunities. In the latter part of the decade, he and Wilson secured financing for Output Exploration Inc., a pioneer in the application of 3-D seismic.

A Phi Beta Kappa history graduate of Yale, and a grad student at the Sorbonne in Paris, McCormick entered the oil business in 1956. His first job? Entry-level landman in Midland, Texas, for Zapata Corp., the oil firm headed by future U.S. president George H.W. Bush.

He is a member of the All-American Wildcatters Association and numerous industry boards. He also was a director for Continental Airlines, Rensselaer Polytechnic Institute and the Joffrey Ballet, among many other business, arts and charitable organizations.

He last appeared in Oil and Gas Investor in 1990, when McCormick Resources was on its way to drilling



500 CBM wells in the Black Warrior Basin in under 24 months. (See "Alabama Coal Beds," Oil and Gas Investor, April 1990.)

Investor What led to Rimrock?

McCormick I had retired because I couldn't find anything that interesting to me at the time. There was no new technology and the industry was picking over old bones. But now is such a fun time. I decided I wanted to get back into unconventional gas—you know, I was there before it was chic.

Investor In the Black Warrior Basin, right?

McCormick Yes. In the 1980s when we were there, horizontal technology was just Stone Age. But we drilled 500 CBM wells with Transco providing financial assistance and they also built a pipeline to us. That got me interested—how do we get gas out of these deeper coals and other shales? When the shales came along, it's like God has said to the industry, "I gave you 140 years of drilling in traditional, easy reservoirs, and now let's give you something new."

Every one of these shale plays started out as a dog, and now some of them are going to be very big.

Investor How did you get money from BSMB, and has that been affected now?

McCormick We didn't have a big money-raising effort. Because of my personal contacts in the financial community, we had the good fortune of dealing with only BSMB (which is a stand-alone entity separate from Bear Stearns) and NGP.

We had the idea for Rimrock and had identified several large prospects; we just needed a CEO with the proper experience. Terry Dobkins wanted to run his own company, and the people at BSMB and NGP liked him. He had the perfect dossier in tight gas and shales.

Investor You've always tried new technology.

McCormick I have as little technical ability as anyone. My friends joke about it—they say I can't even run my own computer. But I've had an ability to spot new trends in technology. My companies were among the first to be in tight sands, CBM and horizontal drilling. I always said, "Why not try it?"

It's absolutely fascinating what they can do today with these frac jobs. If there is an economic carrot out there, this industry will figure out a way to do it.

Investor What lessons from the old McCormick days apply to Rimrock?

McCormick First, you absolutely have to have a fully rounded, extraordinary, technical staff. Each of the shales and tight sands presents a unique challenge.

Second, you have to demonstrate expertise to attract sufficient capital. You've got to have a lot of money or you'll be a spectator, because these unconventional plays require far more money than conventional plays do.



JOE FOSTER

Joe Foster is chairman of TPH Partners LLC, the new subsidiary of the energy investment bank Tudor, Pickering, Holt & Co. Securities Inc., in Houston. It focuses on private investment opportunities.

No stranger to the private-equity world, Foster founded Newfield Exploration Co. in 1989 as a private start-up with \$9 million of equity capital from university endowments, Warburg Pincus and other sources. In 1993, he took the company public. Newfield's recent market cap was more than \$6 billion.

Foster was chief executive officer until he retired from active management in 2000, and remained chairman until May 2005. Prior to founding Newfield, he was chairman of Tenneco Oil Co. and executive vice president and director of its parent, Tenneco Inc.

Thanks to his distinguished 51-year career, this Aggie is a go-to guy. Prior to launching TPH in January 2008, he compiled an impressive resume, heading up companies in upstream and oilfield services, as well as being on the boards of Valero Energy and Dual Drilling.

In 2000, he was interim chairman, president and CEO of Baker Hughes Inc. In 2001-02, he was independent trustee for a large portion of Texaco's refining and marketing assets, which were required to be divested in the course of the Chevron-Texaco merger.

Today, Foster sits on several boards, including Targa Resources Inc., Chroma Exploration & Production, Memorial Hermann Healthcare System and the YMCA of Greater Houston.

He is also chairman of Houston A+ Challenge, an organization aiming to improve public schools in the Houston area.

Foster graduated from Texas A&M University in 1957 with a B.S. in petroleum engineering and a bachelor's of business administration. In 1997, he was named a Distinguished Alumnus of A&M—and the Joe B. Foster Chair in Business Leadership was established in the Mays College of Business in 2002. In 2006, Foster was inducted into the Texas Business Hall of Fame.

Investor Why come out of "retirement" to join TPH?

Foster I was impressed with the firm Bobby Tudor has put together. Second, I've been making private-equity investments of my own since I retired, so I know something about it. A few have returned three or four times cash on cash and a few didn't do as well. One was a write-off.

I'll help the folks decide which investment opportunities they might want to be in and participate on some boards. I'll help them raise some money, but even more, I enjoy building companies.

Another reason was that I had forgotten how much I missed being in an office where I enjoy all the give and take. I'm having fun as long as I feel I'm contributing.



Investor What lessons do you bring from Tenneco and starting up Newfield?

Foster From Tenneco I learned "don't get too far in debt." Tenneco had so much leverage that when it hit a cash-flow problem, it had to sell assets. I learned that you need to plan for the downside. I learned a lot about risk management and risk tolerance. Second, I learned the importance of focus. I've learned that again and again. Entities with a high degree of focus are the winners.

Even at Newfield, in all the areas it is in today, there is focus. The Rocky Mountain and Midcontinent teams are just as focused as the Gulf of Mexico

team was when I founded it and that was all we had. It's "focus by team."

And, culture is very important. At Newfield, we started a culture from scratch that survives today. That includes trust, openness and teamwork. I know it sounds cliché but culture is what causes a company to function at a higher level.

Investor How should CEOs handle \$125 oil?

Foster I never thought I'd see it. But everybody has to be prepared to exist at \$75. I'd have a business plan that says that, if oil is \$75, we're okay.

Investor Who were your mentors?

Foster A big influence was my Spanish teacher in high school. I was a good student and a fair athlete, but I wasn't a leader. She goaded me to make lists, talk to people—heck, I realized I could get things done through other people. The next year, I was student body president. It was my senior year.

Little things like that have a more dramatic effect on your life than you expect. I guess I've been a leader ever since.

Investor Who in the industry has impressed you in the past few years?

Foster Chesapeake has impressed me. I remember when, in 1994 or 1995, they were darn near bankrupt...but they survived. I don't know Aubrey (McClendon) well, but he has been ahead of the curve on gas prices.

I think Larry (Nichols at Devon Energy) has been ahead of his time, methodical and persistent, and done a great job melding several corporate cultures.

Closer to home, I think David Trice has been outstanding in transforming Newfield from mostly the Gulf of Mexico to a firm not just in the Gulf, but in the Midcontinent, the Rockies and several overseas areas

Investor What about the Woodford shale?

Foster I studied it when I was at Tenneco years ago, and we looked at it as a source rock. No way was it a reservoir. It's a good thing I was not CEO at Newfield when they started in on that because the guys never would have gotten that by me. (Laughs.)

JOHN MASTERS

Oklahoma-born, Yale and Colorado University graduate John A. Masters moved to Calgary in 1966 as president of Kerr-McGee Canada. But he left Kerr-McGee later, and formed Canadian Hunter Exploration Ltd. with fellow geologist Jim Gray in 1973.

In 1974, the young company drilled 84 wells. Rapid growth followed, but the best was yet to come. In 1976, it found and confirmed the Elmworth Field on the Alberta-British Columbia border. It is still one of the largest gas discoveries in the Western Canadian Sedimentary Basin, with more than 30 trillion cubic feet of reserves.

It was Masters who coined the term “deep basin” to describe this prolific area, which grew into a huge gas play 250 miles long and 40 miles wide, still one of the most heavily drilled plays in Canada today.

Canadian Hunter was acquired by Burlington Resources in 2001 for \$3.3 billion.

Supposedly retired and now living south of Denver, Masters at age 80 is still practicing geology, his first love. In 2006, he went to Saudi Arabia to do some brief consulting, about which he prefers to be circumspect.

Now he is working on some big oil prospects in New Mexico, Utah, Idaho, Nevada, Wyoming and Montana.

In his 1980 book *The Hunters*, he recalls how he created Canadian Hunter and found Elmworth. It's full of lessons about managing people, growing a company and believing in the power of the mind. Masters says, “Oil is found with ideas. So far, no oil basin in the world has yielded all its oil. But many have lain dormant for long periods, waiting for someone to achieve a new concept.”

Masters has always been a bit of a contrarian. He's made a list of breakthrough ideas that people at first thought were crazy, impossible or useless. “Why would anyone ever need a telephone?” people asked Alexander Graham Bell in 1876.

“Part of the definition of a new idea is that it will be rejected at first,” Masters says. “Evolution teaches us that most new ideas don't work, so we learn to be against them. Big ideas do not come from groups or committees. Throughout history they have come from individuals...and ‘normal’ people almost never recognize the importance of the idea until much later on.”

Masters invented the “resource triangle” and published it in *AAPG Explorer* in 1979. It's now the classic way to show the distribution of natural resources—oil and gas or lead, zinc, silver and gold. The best-quality resources that are in the smallest supply are always at the very top of the triangle. Now he wants to pursue those kinds of reserves again.

Investor John, what are you up to these days?

Masters I am trying to start a new E&P company and raise some money. It will aim to find what I think are some very big reserves, that have lesser porosity and permeability than what most companies look for in the U.S. Rockies.



Investor What do you mean?

Masters I think probably two-thirds of the hundreds of geologists in Denver spend all their waking hours on the Denver Basin. It's a pretty good basin, but it's been drilled to pieces. There's a whole world of other basins out there.

Investor What are you looking at?

Masters Go west of the Overthrust Belt in Wyoming that separates the Rocky Mountain geosyncline from the Cordilleran geosyncline in western

Wyoming, Utah and further west. Thousands of wells have been drilled on the eastern side of that line. But west of the Cordillera geosyncline relatively few wells have been drilled.

Investor Where would you like to drill?

Masters Eastern Idaho, the northwestern half of Utah, and a fairly large piece of Arizona and Nevada, and westernmost Wyoming and Montana. This is a huge area. The striking thing is, only a few wells have been drilled, and the other striking thing is, it's got five to 10 times as much sedimentary thickness as the eastern areas of the Rockies.

Investor What about Covenant oil field that was found in Utah a few years ago?

Masters Covenant is like the new fields I expect to find in the Cordilleran. In the west, you do not see hundreds of companies working like those on the eastern side of the Rockies. I have more than 20 sizable prospects—I never reached that number up in Canada. Elmworth was a great discovery, but I think I see more opportunity down here than I had in Canada in the 1970s!

Investor Tell us more about Elmworth.

Masters We worked for 20 years to develop that field and figure out where it would extend. It ended up something like 250 miles long and 30 to 50 miles wide in places. The most amazing thing is that the majors had drilled 93 dry holes in the region, and they decided there wasn't a chance of finding oil there.

Back then, gas had no value and if they found some, they did not drillstem-test it. A brilliant log analyst named Lloyd Fons (who lives in Houston now) looked at those dry holes for us. In all of them, he saw bypassed gas pay on the logs. It was a revolutionary judgment...no other professional log analyst in Calgary would have dared to tell those majors they had missed that gas pay.

Investor Original thinking is as important as science?

Masters That's exactly the point. The person with insight and determination to recognize something contrary has to fight not only the science, but public opinion. People think you are crazy or stupid. They make fun of you or fire you. For a while there, Canadian Hunter was made fun of for two or three years—then Exxon bought a 12.5% interest in the field for \$250 million!

You've got to have guts and brains.

We have such high commodity prices now, you can make so many things economic. And I intend to.

GENE AMES

Eugene L. Ames Jr. is the grandson of an oilman and his children are in the business too. Sons John and Gene III are independents.

The Ames family has been wildcatting since 1913, when Ames' grandfather drilled his first oil well in Oklahoma's famous Cushing/Drumright Field. The family moved around with the booms and busts from Oklahoma to Arkansas to East Texas. This Ames was born in Gladewater in the heart of the East Texas oil boom in 1933, where his father and grandfather ran a small "teapot" refinery, and held interests in hundreds of oil wells.

Later, as chairman of the Independent Petroleum Association of America in 1992, Ames fought for the very issues IPAA still faces today: land access for drilling and fair tax treatment. He was named the organization's "Chief Roughneck" in 1995.

A geology graduate of the University of Texas at Austin in 1955, he joined his father in the business soon after. In 1986, he began assembling an exploration team, which is still together today generating prospects.

He is still chasing oil and gas, claiming he was inoculated with the oil business at birth, just like his grandfather. Here, he visits with Oil and Gas Investor on his experience in the independent oil and gas industry.

Investor You say the expanded Yegua Trend in the Upper Texas Gulf Coast is a dynamite play that remains unrecognized. Why is that?

Ames I think it's partly because so many people are focusing on these unconventional plays today, and while the Yegua is a great play, some people do think it's erratic. But it works with 3-D. The deep Yegua is rich in gas condensate, and is a high-quality downdip deltaic sand that goes around the coast from Orange in East Texas down to Victoria. Excellent production has been found.

Some wells in Orange and Jefferson counties produce 30 million cubic feet of gas per day, more or less, with little decline over the first two years.

It's a very high-quality play that could exceed 1 Tcf. Our group has had success there over the years. We're producing about 125 million cubic feet equivalent per day. We feel we know it better than anyone else, which is what you have to do when you are an independent.

Investor You won't ever retire, will you?

Ames No, because I don't think I will ever get all the wells drilled on my old prospects that still need to be tested and have great potential. The big resource plays are incredible, but believe it or not, I think there is still conventional oil and gas to find, and we have some of that in mind, hopefully, in another "dead" area.

I am also active in several areas other than the "expanded Yegua," from the Cotton Valley on the Sabine Uplift to the Woodford shale. We are in the research phase of some exciting out-of-the-box new play ideas that have come to fruition because of technological ad-



vances and higher prices. As my granddad said about himself, I was inoculated with the oil business when I was born.

We don't work as a company. We are a team of individuals who are prospect generators (geologists, geophysicists and landmen) working together. This same team has been in place for 22 years. We don't operate, but our prospects are developed by other operators.

Investor What do you make of these high oil prices?

Ames You have to think we're in a spike and there will be a correction, but I don't think it'll ever get back to low levels. Certainly these levels are too high. No one could have predicted this.

When I was the chairman of IPAA in 1992, I made a speech at the National Press Club and I said that, by 2010, we will have \$5 gasoline and be importing more than 60% of our oil, if the government doesn't wake up and open up access. We've been saying this for years. We couldn't even get the Republicans to support us. They told us the oil industry had to improve its image and get the public on our side. It's happening now.

And they also said we'll never do anything until there's a crisis, and now there is a crisis. Now everybody's getting on board that we have to drill.

The Republicans finally have the political cover to support drilling and a strong domestic industry because the public now sees that we need to drill—\$4 gasoline is the crisis needed to wake up the public and the politicians. But how do you explain Nancy Pelosi and the Democrats?

Investor Has the industry learned more about PR and lobbying since then?

Ames Absolutely. The majors finally woke up and realized they must sponsor a public-information program.

Investor Are you still collecting old petroleum-history books?

Ames Yes. I have over 200 volumes of oil history and biographies of wildcatters, and maybe 50 old maps. One of the oldest is a scientific report, Silliman's study of rock oil, done for the Pennsylvania Rock Oil Co in 1855. This report was used to promote the money to finance Colonel Drake drilling the first oil well in 1859. It's in my safety deposit box.

I once saved the original surface geological map of the Yates Field in West Texas from being discarded by Marathon. I was assembling my collection of old geological maps and I asked Marathon chairman Vic Beghini (at the time) if they had any original maps that led to that discovery. Their Midland office couldn't find any, then they looked in some old storage boxes they were getting ready to throw out, and found that old map.

My call saved that map! I now have a copy of it.

JIM WALLACE

Denver independent James B. Wallace is one of four founders of BWAB Inc. and Brownlie, Wallace, Armstrong and Bander Exploration Inc., both Denver-based E&P companies long active in the Rockies and Midcontinent regions. Partner Joe Bander is deceased, but Wallace, Ray Brownlie and Jerry Armstrong—with five decades in the business—still keep their hands in oil and gas, usually by taking nonoperated working interests in a variety of plays.

Wallace served on the Tom Brown Inc. board when it was sold to EnCana Corp. in 2004, “back when these resource plays were just getting started,” he says.

A stalwart of the Denver independents, today Wallace is on the boards of publicly held Delta Petroleum Corp. in Denver (of which his oldest son, John, is president); private start-up Savant Resources; and Ellora Energy in Boulder, which is to go public later this year.

Born near Los Angeles, he remembers seeing oil derricks not 100 yards from his parents’ porch in Long Beach. He is a 1951 graduate of the University of Southern California, where he obtained a B.S. in business administration. In 1953, after serving in the U.S. Marine Corps during the Korean War, he and Brownlie entered the oil business in West Texas, joining a college friend who was in the business there.

He lived in Abilene for 17 years, working as an independent oil operator in partnership with Brownlie and Armstrong. In 1970, they decided to move the partnership to Denver, where Bander joined them soon after. The quartet was active in most of the main plays in the Rockies throughout the 1970s and 1980s, often generating prospects and leasing acreage, sometimes operating. They held some of the original acreage in the giant Anschutz Ranch East Field along the Rocky Mountain Overthrust, one of the region’s largest fields, discovered in 1979 by Amoco (now part of BP).

Among other kudos, Wallace was recognized as Wildcatter of the Year in 1986 by the Independent Petroleum Association of Mountain States (IPAMS), and is also a member of the All-American Wildcatters group and the Twenty-Five Year Club of the Petroleum Industry.

Currently, he is working with three of his four sons on various ideas—the most promising is finding a way to buy, transport and sell CO₂ to producers throughout the Rockies, Texas and Midcontinent. At 79, he thinks the idea of carbon sequestration helping the environment—and reviving old oil fields—is the wave of the future.

Investor Jim, what are you working on these days?

Wallace I think I got into this business 10 to 15 years too early, but I’m still in it now. We had a pretty good-size staff of around 120 back in the ’70s and ’80s, but we are down to the three of us, and two admins. We haven’t operated for quite a while, but we are drilling new wells on old assets we’ve had for long time.



Investor Are you involved in any of these resource plays?

Wallace I’ve got 55 years in the business, and it’s all been interesting. But to me, the most interesting things have happened in the last half-dozen years. These source-rock plays will be a big bonus for our country in the long run. The majors will probably end up owning all these assets when all is said and done, but the independents are who have been in there first.

But we were in the Bakken 25 years ago, along with Canadian Hunter Exploration, and we had some Mondak pro-

duction up there with Tom Brown Inc. We missed this “new” Bakken play. We’re drilling some wells there now in the Muddy Ridge area in Wyoming, where EnCana determined we didn’t drill enough to get all the gas out. Tom Brown had those properties since the 1970s. We were developing Muddy Ridge on 40-acre spacing, but we’ll end up on 20s.

Investor In addition to your long-held interests, now you are pursuing CO₂.

Wallace One of the things I’ve been doing for close to a year now—and it’s a puzzle to me why more people haven’t caught onto this—is looking at tertiary-recovery operations in the Rockies. All of it involves CO₂. We’re trying to get into the business as a pipeline transporter and vendor of CO₂ for the big producing fields in Wyoming.

Most people are thinking of it just from the producer’s point of view. Ultimately CO₂ is an application that should be pervasive in the Rockies and Midcontinent. We are doing it with my sons, and with (former U.S. Commerce Secretary) Don Evans (whom I’ve known and worked with for more than 30 years since his Tom Brown days) and some other investors.

The challenge is building all the infrastructure—it could take \$500 million to \$1 billion just in Wyoming.

But here are some facts. Conventional domestic reserves are 22 billion barrels of oil remaining in the Lower 48, but if you put CO₂ in these great old oil fields, you could produce another 89 billion barrels! That’s from Advance Resources International and the DOE. Heck, even if we recover half that, it would go a long way. These politicians keep talking about wind farms and solar projects, but to me, this old oil is the greatest unrecognized energy resource that exists in this country. It’s mind-boggling to me.

About 1.4 Bcf (billion cubic feet) a day of CO₂ is being injected into 58 Permian Basin fields. It absolutely works. We think this ought to be available and utilized in dozens, if not hundreds, of other fields in the Rockies and the Midcontinent.

If CO₂ were broadly available, we could really turn around our reliance on imported foreign oil. This should be the cornerstone of anybody’s energy policy.



THURMON ADDRESS

Thurmon M. Address is one of those people who just may know everyone in the oil patch, at least in Texas. And no wonder. For decades, he's been a deal-maker for both public and private E&P companies and partnerships.

"I would say my No. 1 job is to be a rain-maker—to make things happen," he says. That's his job description at publicly held BreitBurn Energy Co. LP. He's been a managing director in the master limited partnership's (MLP) Houston office, and board member of the parent company, since 1998, when the parent merged with Address Oil and Gas Co., the private Houston E&P he founded in 1990. He was president and CEO.

BreitBurn's operations are primarily in California, Texas, Wyoming, Florida and Michigan.

Other E&P companies have also benefited from his expertise. He's been on the board of Edge Petroleum Corp. since 2002. The latter agreed in July 2008 to be sold to Chaparral Energy Inc. And since 2006, he has been a director of EPE Holdings LLC, the general partner of Enterprise GP Holdings LP, a midstream MLP.

Address obtained a B.S. in geology from Texas Tech University but also attended Texas Christian University (TCU) for a time. A self-professed jock, he heads the annual World Oilman's Tennis Tournament held in Houston, the industry's largest tennis event. He was inducted into the All-American Wildcatters in 1996.

Oil and Gas Investor caught up with him recently to learn more about his background and what's next.

Investor How did you get into the oil and gas business?

Address I was a total jock in high school and ended up going to TCU on a partial baseball scholarship after hurting my knee in football. I didn't know what I wanted to do, but took a geology course as an elective. I knew immediately this was for me.

Also, I grew up in Breckenridge, Texas, which sits directly on top of the old Breckenridge Caddo Field, so it was a natural for me to like the oil business.

On graduation, I spent seven years with Sun Oil Co. in Texas. But my friend, Jake (Jakie) Sandefer, and I always wanted to have our own company someday. His dad was a successful independent, and when Jakie hit a nice field, he said, "I will grubstake us; quit your job and let's open an office." I never regretted it.

Investor What did that first company do?

Address We would put drilling deals together in west-central Texas, sell interests and get a carry (carried interest). Oil was \$3 a barrel and if you could sell the gas, you were paid 6 cents (an Mcf). We were fortunate to get the Tom O'Conner family in Victoria, Texas, to become our partner. We enjoyed this relationship for 17 years.

We formed Sandefer & Address Inc., which operated in West Texas, Alabama and Florida, and Mellon Energy Co., operating in South Texas and the Gulf Coast.

Investor What happened to those companies?



Address We sold them both in 1979 to Howell Petroleum Corp. (acquired by Anadarko Petroleum Corp. in 2006). Jakie and I are still great friends to this day. You know, in 17 years as partners, we never had one thing in writing between us and never had a disagreement. A handshake was all we ever needed.

Investor You were a serial entrepreneur, right?

Address When we sold in 1979, the industry was peaking, and people said oil was going to \$100 a barrel. I wanted to start another prospect-generating shop and persuaded some top generators to

come with me. I formed Address Oil & Gas Co., and we sold our prospects to industry partners.

Investor And you had a public company too.

Address During the sale to Howell, I met Darby Sere and was impressed. In 1982, just before the downturn, we rolled up 25 private partnerships and traded the partnership for public stock for their production and were taken public. I contributed some properties too.

It was a difficult time to go public. Oil was \$28 a barrel. We went public as Bayou Resources Inc. on Nasdaq for \$3 a share. We drilled 17 straight successes at Mestena Grande Field and had a nice Louisiana property. We sold the company in 1987, in a down market, to Patrick Petroleum Co. for \$8 per share, when oil was \$12 and gas was \$1.61.

Investor How was financing during that time?

Address The young bucks today would not understand how hard it was to raise capital back then. There were no EnCaps or NGPs (private-equity sponsors EnCap Investments or Natural Gas Partners). When we went public in 1982, it was almost impossible to obtain public money.

Before Jakie and I were backed by the O'Connors, we raised money almost any way we could. We tried Hollywood with little success. We got a small amount from Rock Hudson. We sold interests to business people. We had Ben Hogan in a few wells, with some other golfers.

Investor How did you hook up with BreitBurn?

Address During the 1990s, I did several exploration joint ventures, primarily offshore on the shelf. After King Ranch Oil & Gas sold, the CEO, Roger Jarvis, and I agreed to continue our offshore JV. I then visited with EnCap about it... They introduced me to BreitBurn.

I ended up opening a Houston office for BreitBurn to look for acquisitions, and sold Address Oil & Gas to them in 1998. It was a great choice... I've watched it grow from three to more than 50 people in Houston.

Investor What do you think of this shale mania?

Address When Jakie and I were wildcatters, we probably drilled 40 wells in Palo Pinto, Jack and Throckmorton counties in North Texas, and we cussed the Barnett shale every time we drilled through it, because it gave us a kick and messed up our mud system.

JIM HENRY

Jim Henry, a long-time member of the Midland, Texas, oil fraternity, sold Henry Petroleum Co. to Concho Resources Inc. this past July. He and his wife, Paula, have already started their new venture, Henry Resources LLC, with 30 employees and a budget of about \$40 million. The focus will remain the Permian Basin, where Henry has operated for about 40 years, and where the company was instrumental in starting the Wolfberry play. (See “Deep, Tight Gas,” Oil and Gas Investor, January 2008.)

The son of an engineer, Henry loved math. He graduated from Oklahoma University with a master’s degree in petroleum engineering in 1958. During college he roughnecked, but his first oil-field job came earlier, in 1952, “swatting flies around Wichita Falls, Texas. I was a ‘jug hustler’ (setting up geophones for a seismic crew).”

He served two years in the Air Force as a research engineer in Dayton, Ohio, working on liquid-hydrogen projects, and later worked for Humble Oil & Refining Co. and Skelly Oil. After going to Humble’s reservoir school in Houston, he was transferred to Midland.

In 1969, Henry started his own E&P company and, ever since, has also been active in the Midland community. About 20 years ago he founded the Forum for E&P, a monthly networking event for small independents, service companies and bankers.

In 2000, he helped form the Applied Petroleum Technology Academy (APTA), a non-profit charged with exporting to the world the enhanced-oil-recovery technology widely used in the Permian Basin.

We asked him about the thinking behind his new company, and his initiatives with the technology academy.

Investor The sale of Henry Petroleum was unanticipated by many. Why did you sell and why now?

Henry We considered a combination of factors. One of the more important ones was the chance to do something special for our employees while oil prices were at an historic high. Today there’s an outstanding environment for start-up firms to form companies, develop assets and then sell them. Often, the principals involved do quite well financially, but we wanted to extend that model to the rank-and-file employees...and share with them a substantial amount of the financial gain.

Investor Were there other reasons to sell?

Henry There were. Structuring the sale the way we did allowed us to take advantage of the capital-gains tax structure as it currently exists, with the thought being that capital-gains tax rates could go up substantially over the next few years. Another was the oil price. We have never been good at timing the market, but there is some comfort in selling when oil prices are at an historic high.

The sale also allowed us to gather what had become a fairly diverse and complex portfolio of assets and to refocus a little. Finally, we knew Concho shared our val-



ues and was committed to keeping the employees in Midland. We were prepared not to sell if we could not meet these conditions.

Investor And you are not retiring?

Henry We unequivocally plan to continue. We never really stopped. The new company, Henry Resources, is in the same building, with the same phone number. We already have more than 30 people, have two operated drilling rigs running and are considering adding a third. While many experienced employees went to Concho, we were able to take a very strong team with us.

Investor What will you focus on?

Henry The Permian Basin, because that’s where our expertise lies. Henry’s niche has always been as a low-cost developer of reserves, and we plan to continue that. We have a wide range of experience from unitization and secondary recovery to tertiary experience. Initially, we’ll focus on the Wolfberry, but on different acreage that hasn’t been developed. In some areas, it’s been proven, but in others, such as the eastern edge of the basin, the industry hasn’t quite figured it out yet.

We will spend more than \$40 million over the next 12 months from identified opportunities.

Investor Are you seeking partners?

Henry We’ll generate many of our projects internally, but we also hope to expand our participation with other companies. We do plan on being pretty aggressive, by stepping up the percentage of any given project we take. We started with 25% interests when we entered the Wolfberry play, but now we’ll retain a higher average, 50% or 75%, and in some cases, even 100%.

Good partners can be of great benefit because they bring a different perspective to the table along with different skillsets. Some of our recent partners include Chuck Rubins and his local team at Chevron in the Wolfcamp. Tony Best and Newt Newton have partnered with us multiple times, including now in their new roles at St. Mary Land & Exploration.

Investor What lessons do you bring to the new firm?

Henry One is how much value we can gain by treating our vendors as partners rather than just suppliers. This lesson did not come easily or naturally to us, but once we started to treat these contractors with the respect they have earned, our successes really started to multiply.

I’ve been in this industry for 45 years, and I absolutely love it. I want there to be a Henry company employing people in Midland long after I am gone.

Investor Tell us about CO₂.

Henry In the Permian Basin, we are further along in CO₂ recovery than anywhere in the world. We’ll host a Chinese delegation in the next few weeks, and we’ve had people in from Russia. Australia is interested. We want to help other nations and benefit from an exchange with them.



FRANK REINHARDT

Francis J. Reinhardt Jr. is an institution among petroleum analysts. After more than 50 years in the business, he is still on the go, an energetic and outgoing man who attends many investment conferences and other analysts' events around the world. In 2007, he visited the prolific Buzzard Field in the North Sea with Nexen Inc. and went on an analysts' trip to Vietnam with Talisman Energy Inc. Earlier this year, he went to Trinidad with Canadian Superior Energy Inc.

At press time, he was at an analysts' reunion in the Great Smoky Mountains of North Carolina. He still covers the U.S. and Canadian independents and regularly talks with the E&P company chief executives.

Reinhardt graduated from Seton Hall University in New Jersey and has an MBA from New York University. He is a past president of NAPIA (the National Association of Petroleum Investment Analysts) and the Oil Analysts Group of New York, and is a member of the New York Society of Securities Analysts.

In 1956, he joined Carl H. Pforzheimer & Co. to work in back-office operations and, about a year later, he switched to being an equities analyst. In 1966, he made partner and made his first trip to Calgary. From there, he perceived a lot of potential growth in the Canadian energy sector, which developed into one of his areas of expertise.

In 2005, after 49 years at Pforzheimer, he left with partner Al Anton to join Burnham Securities Inc., a unit of Burnham Financial Group in New York that has corporate finance, research, asset management, brokerage and four mutual funds under its title.

At Burnham, he is a managing director who, he jokes, neither manages money nor directs people. But he and Anton provide research and advice to institutional and high-net-worth clients. In light of the energy-equity meltdown and extreme market volatility, Oil and Gas Investor sought out Reinhardt for his long-term perspective.

Investor Frank, in this crazy market, what are you telling your clients?

Reinhardt Unless they absolutely have to sell something, stay with it. The companies we're recommending are all good companies and they will survive this meltdown. I don't know where the bottom of this market is, although I think we are close—it's the worst one I've ever seen.

But I am buying some things myself. There are some really cheap stocks around, and I don't think it has anything to do with the oil and gas companies themselves. Whether it is Wellington or T. Rowe Price or Vanguard, they have all had huge withdrawals out of their funds due to cash calls because people want out of the market. In addition, margin calls have really affected stocks severely. To margin anything in this market is the kiss of death.



Investor What kind of research reports are you writing these days?

Reinhardt There's not so much writing. I do a lot of e-mailing and talking with people. I'd rather have discussions with investors one-on-one. And I continue to attend a lot of meetings with the companies I cover.

Investor Based on that, what intrigues you lately?

Reinhardt I'm following this Blackbeard well (in 70 feet of water in the Gulf of Mexico and operated by McMoRan Exploration Co.) with a lot of interest. It may be the biggest discovery in 40 years.

The K-2 Field that Anadarko Petroleum found in 2002 has become the model they're looking at.

It's been drilled to 32,997 feet below the mudline, the deepest well ever below the mudline. That's more than six miles deep! It actually takes three days just to get the drillpipe out of the hole, a day to check the blow-out preventer and three more days to go back in the hole—so every two weeks, they lose a week, because the (Minerals Management Service) requires them to check the BOP every two weeks. It's an unbelievable well. It truly is history-making.

Investor What's your outlook for 2009?

Reinhardt I guess I'd say I'm sanguine. I am somewhere below optimistic and a bit above miserable. (Laughs.) I don't think the price of oil and gas can stay down for long. I would avoid refinery stocks though. There's going to be a lot of new refining capacity coming on in Asia next year. But I don't know why good E&P companies can't have several more good years. We just got too far ahead of ourselves with those high commodity prices. It was destroying demand. We need to be at a level that permits the world's economy to thrive.

Investor What's your commodity-price outlook?

Reinhardt I personally think we're going to end up in the \$80 to \$90 range because, with the 9% decline curve worldwide (and the 20% decline in North America), these low oil prices can't be sustained. Oil has to remain at a level the country can live with, and one that doesn't destroy demand, but encourages drilling.

The amazing thing to me is that almost 33% of the gas production in the Gulf of Mexico is still shut-in after Hurricane Ike, yet gas prices refuse to go up. I was talking the other day to Jim Bob (Moffat, co-chairman of McMoRan) about it and he can't figure it out either. The present gas price is ridiculous. I don't believe it can stay at its present level of just over \$6 for long.

But until this banking situation gets completely resolved, these companies are scared, so they are staying as liquid as possible, even though they may have a strong balance sheet and plenty of cash. It's a case of survival and a strong balance sheet.

FORREST HOGLUND

Many a retired executive stays busy with philanthropy and other pursuits, and Forrest Hogleund is no exception. He jokes, “My mother must have raised a dummy—I have three non-paying jobs right now.” He divides his time between Dallas and Houston.

He was, until May 2008, the chairman of Forest Oil Corp., helping to engineer the Denver company’s recent strategic turnaround. To this, he brought experience as the former chief executive officer of a large independent, Texas Oil & Gas Corp. (known as TXO), and later as chairman and CEO of Enron Oil & Gas Corp. When the latter was spun off by its parent and renamed EOG Resources Inc., he left to “do a bunch of different things versus being involved primarily in one company.”

Today he heads up a \$155-million fund-raising effort to build the Perot Museum of Nature & Science in Dallas, which will include “the best ‘energy hall’ in the world.” Ground-breaking is planned for 2009 and completion in 2011. It will enable visitors to go down in a horizontal Barnett shale well while it is fraced. Hogleund succeeded in a similar campaign when he headed the committee that built and funded the Weiss Energy Hall in 1995 at Houston’s Museum of Natural Science.

The University of Kansas grad is also vice chairman of a Houston group that has developed a “fun, animated, Internet-based math program called ‘Reasoning Mind’ for third- to sixth-graders that is getting dramatic results.”

But natural gas is always on his mind. He was head of Arctic Resources, which, as he explained on “60 Minutes” in 2003, wanted to build a gas pipeline offshore Alaska, from Prudhoe Bay to the Mackenzie Delta, to hook up with a proposed Canadian pipeline. Both pipelines are yet to be built. Now, a liquefied natural gas project is on his mind as co-founder, chairman and CEO of Sea One Maritime Corp.

Investor Tell us about your LNG endeavor.

Hogleund We’ve developed new technology to make LNG offshore, which we think will open up lots of opportunities—first, to bring smaller volumes of gas to market, and eventually bring larger volumes at less cost.

Investor How is it different?

Hogleund Instead of building a huge liquefaction plant onshore—that is very expensive—we use a barge offshore to clean the gas, then we use propane as a solvent and cool the gas to -40 degrees, under pressure. We then fill a ship that is essentially a floating pipeline with the resulting mixture of natural gas, liquids and propane. We call it “LNG Lite.”

Investor What are the advantages?

Hogleund When you get it to market, you only need another barge with a gas plant on it, to separate the gas and liquids from the propane, sell the gas and liquids, and re-



cycle the propane. Compared with a traditional liquefaction plant, it costs about half as much and you use only a third as much energy to make the LNG Lite. It has tremendous flexibility—just move the barge and ships to the next source of gas when you’re finished.

We have ABS approvals in principal, and we should send out for bids on the FEED (front-end engineering and design) in 2009. I kiddingly say this effort is somewhere between a giant sinkhole and a great success. We’re in that first stage of spending the money now—it’s all private funding at the moment. People are very

interested because they like the low-cost and efficient aspect of it. It’s the green answer for moving gas today.

Investor How did you come up with this idea?

Hogleund In our prior work on the Alaskan gas pipeline project, we had a eureka moment. This technology was mentioned in the scientific literature but it had not been patented yet, and evidently nobody put any commercial value to it.

Investor Don’t you worry about a gas glut in North America?

Hogleund We’re most likely not going to be bringing this gas into the U.S. This will be more international—to Europe, South America or Asia.

Investor The Alaskan-pipeline project failed to take off. Do you think anything else will ever get done?

Hogleund There is no question that the route we were pushing was best, offshore ANWR and picking up Canadian gas, and it did not cross any mountain ranges. But nobody was willing to buck the state of Alaska. Now the higher-cost, \$30-billion route south through Alaska is being talked about. I don’t think it’s going to be built for a long time. There is no market for high-priced gas.

Investor So it’s on to the shale plays?

Hogleund Gas from shales is a big deal. If these work as people think they will, there’s going to be a lot of gas and a lot of players. The majors probably will try to get a piece of it. But it probably takes a bit higher gas price than we have now. We’ve survived low gas prices before, but it’s different this time because we’re having the worst worldwide economic reaction ever—at least in my lifetime. When the gas-rig count comes down—and it will—and you have a 50% decline rate in gas wells, the market will correct itself fast.

Investor Ever wish you were still drilling?

Hogleund Yes and no. I took over as chairman of Forest Oil in 2003 and we did quite a turnaround—we got the stock up fivefold at one time. But I left in May 2008 because I had to spend more time at Sea One.

At this stage, I’ve reached perfect balance in my life. I spend half my time working for non-profits. As for the other half, half may turn out to be not for profit, but the other half is doing quite well.





BOB WAGNER

For more than 40 years, Robert D. Wagner Jr. has been an energy banker. There is probably not much he hasn't heard before, and he is on his third major industry downdraft.

Wagner graduated from College of the Holy Cross with a BA in history, and served with the U.S. Marine Corps in Vietnam in 1965 and 1966. He then began his career at Bankers Trust in New York, and received an MBA in finance from New York University. He moved to Houston in 1974 to ride the energy boom, and in 1981 became head of energy lending for First City Bancorporation, then the primary bank for energy in Houston.

Then came the bust. He built a loan-workout team for First City when the oil collapse gave way to wholesale deterioration in loan quality from 1983 to 1986.

After a stint at Bear Stearns, he returned to Bankers Trust to organize its energy equity research program from 1993 to 1995, in support of its entry into the public equity markets. Wagner helped rebuild the bank's oil and gas corporate finance activities in the Southwest, resulting in 20 new clients and some \$4 billion in transactions through 1998.

From 1998 to 2001, he was in early retirement. He next worked for Arthur Andersen & Co., leaving before the firm went out of business.

Today, he divides his time between old energy haunts in Houston and his retirement home in California. He is an advisor to Rivington Capital Advisors LLC, the boutique energy-investment firm his son, Chris, co-manages in Denver and Houston. Last year he received an MA/PhD in mythology from the Pacifica Graduate Institute in California.

One of his favorite sayings, from Charles Darwin, applies to these challenging times: "It is not the strongest of the species that survives...but the most responsive to change."

Investor How does this financial crisis compare to what you saw in the 1980s?

Wagner One difference is that now we have private equity available, which didn't exist for energy in 1986. Back then it was either bank debt or public equity, and there was no high-yield market either. Today the industry is much more resilient and responsive.

Investor What was that downturn like?

Wagner The E&P companies suffered, but almost to a man they survived. But on the service side, those companies were heavily leveraged and had to have workouts. We were kind of inventing the wheel then because there were no workout bankers around—after all, Houston had had a good economy for 30 years.

Investor Your advice for E&Ps?

Wagner Manage for near-term cash. Hedging may help, and operating expenses may also decline, but it's unlikely they'll come down anywhere near the level of the



ultimate declines in revenue. It requires an aggressive ordering of priorities: 1) operating/production expenses; 2) core overhead; 3) taxes; 4) interest on debt; 5) PDNP development; 6) other development; 7) exploration.

The uncertainty of oil and gas prices, well costs and the availability of equipment and services requires a "go slow" approach on anything that will not yield immediate increases in cash flow.

Depending on the amount of debt and the priorities, measured against projections of revenue, the result might be substantial expense reductions, even staff cuts. The resulting organization and

2009-10 budgets should be focused on staying as lean as possible. I'd advise people to husband their cash. The mindset that grows a company is radically different than the mindset when it is shrinking. Banks are going to want debt to be reduced.

Investor Do you see strong companies poised for acquisitions?

Wagner The experience of the last three to five years is very similar to 1979-81 and 1996-98, when high prices and the availability of relatively inexpensive capital resulted in an explosion of drilling, development and acquisitions. In the aftermath of these "booms" we saw a significant contraction in activity, a wholesale reduction in valuations, and the ultimate liquidation of many companies and project structures.

Current conditions will result in many companies and asset bases going on the block, whether by design, by forming new alliances, or in a restructuring process that involves potentially painful negotiations with creditors.

Investor What's your outlook for capital?

Wagner Capital will be very tight for the foreseeable future, except for the most attractive and lucrative of asset purchases and projects. But as the price outlook begins to stabilize, and restructuring of the most-leveraged or problematically structured projects begin to advance, new investors can come in and buy things at a discount. Some of the biggest fortunes in this business have been made coming out of the troughs. Wealth can be built dramatically in relatively short periods of time.

Investor The 1980s bust lasted a long time. How long do you think this could last?

Wagner Oh, it'll be a lot shorter this time. For one thing, you don't have the big gas bubble of the '80s. It lasted about a decade, from 1983 to 1993. Yes, you have the shales, but their decline curve is quite steep. With the cuts in drilling, I think you'll see supply diminish faster than demand. It may take a year to work off.

The booms are a fantasy time where crazy people show up. Times like this are the most interesting, because it's real life. When you sit down with people to figure out what to do, you form life-long friendships.

GENE VAN DYKE

TTrue wildcatters never retire, and they never give up hunting for that elusive, final elephant that will be the capstone of their career. Houston's Gene Van Dyke is no exception. After successes in the U.S. and in the Dutch North Sea decades ago, for the past decade he has pursued wildcats offshore Africa, from Morocco to Namibia and Madagascar, and in the Black Sea offshore Ukraine, under the banner of privately held Vanco Energy Co.

Vanco's E&P niche is to do the science and develop prospect leads, secure the concession or production-sharing agreement with a government, then bring in a major or two as partners to get a well drilled.

Last August, Vanco Ghana Ltd. and partner Lukoil Overseas Ghana Ltd. secured a deepwater drillship to test the first exploratory well on the Cape Three Points deepwater block offshore Ghana in the Tano Basin. The ship's retrofit is done and the well, Dzata-1, is supposed to spud later this spring. Vanco holds 28.34% interest in the block. Lukoil holds 56.66% and the state oil company of Ghana has a 15% carried interest.

Van Dyke is used to getting his feet wet. In the summer of 1947, he worked for Kerr-McGee Corp. on the barge rig that drilled the very first well out of sight of land, offshore Morgan City, Louisiana. He was a mud engineer for about three months. The well was a discovery.

"I had no idea, of course, that I'd be involved in the offshore business like I am today," he says.

After graduating from the University of Oklahoma in 1950 with a degree in geological engineering, he worked for Kerr-McGee again for a short while, then moved to North Texas to work for a small independent. He lived in the YMCA in Wichita Falls that year. Today, however, he lives in the Houston mansion built by Walter Fondren, son of one of the founders of Humble Oil (now known as ExxonMobil).

Van Dyke went independent early in his career, in 1952. He used to hitchhike to Fort Worth and Dallas to put deals together. In the morning, he worked up the geology. After lunch, he'd be in the county courthouse researching title for the land involved. After dinner, he'd drive out to the country to negotiate leases with landowners and ranchers.

It's a different story today. In 1958, he moved to Houston and through the 1960s, explored the Texas and Louisiana coasts. And at one time about five years ago, he had more acreage blocks offshore West Africa than any company—even more than the majors.

Between his trips to London and speech-making at industry events, such as in Cape Town, South Africa, Oil and Gas Investor visited with him at Houston-based Vanco's headquarters, which is decorated with an noteworthy collection of African art, masks and mineral specimens.



Investor From time to time you've talked of going public. What are your thoughts on it these days?

Van Dyke We considered going public on the London AIM market but, in the end, I decided not to. I'm very independent and would prefer to run my own show. The problem is, sometimes we get into projects that are so big, they require a lot of money.

Investor Thus, your partnerships with majors.

Van Dyke Yes. I've always had a very good geology staff. We get out ahead of the majors and look for potential. If we

like what we see, we put together leases with the governments, then bring in big oil companies to drill. On a much bigger scale, I'm doing the same thing today that I did in Texas and Louisiana in the 1950s and '60s.

Investor When did you go to the North Sea?

Van Dyke 1973. We bought out Tenneco's interests there. And since then I haven't done anything in the U.S. We spent 15 years in Holland and discovered a few oil fields.

Investor Why Africa?

Van Dyke In the mid-1980s I became intrigued with deepwater exploration and FPSOs (floating production, storage and offloading vessels), but they said we couldn't use them in the North Sea because of the harsh weather; they would bounce around too much. So I looked for a place with better weather. In 1996, I started looking at West Africa. The first block we got was off Gabon.

Investor And what happened?

Van Dyke In 1997, I had a sealed-bid auction on that acreage and Total made the best offer. I walked away with a lot of money that enabled me to get more leases off Africa, and hire more people. At the height, I had about 20 million acres, but I have relinquished a lot of that since then. In 2004, we drilled a wildcat off Morocco with CNOOC and India as partners, but it was dry. I drilled a well off Cote d'Ivoire and it was bone dry.

Investor Why do you like the Black Sea?

Van Dyke When Ukraine became independent I bought some good seismic that Western Geco shot there in 1991. There are a lot of big structures similar to the Caspian Sea. The deepwater portion of the Black Sea is the only basin in the world that hasn't been drilled. It took 18 months to work with the ministries to get the license, then the government changed two months later. Now I have to renegotiate with the new prime minister. If we could just perform on the license we were awarded...

Investor Do you get discouraged?

Van Dyke No. I haven't found any major fields, but we are not playing little step-outs. We're looking for 500-million-barrel-type fields. I'm looking for home runs. That's what turns you on when you are an explorationist.

ROBERT A. HEFNER III

Ever since geologist and natural gas advocate Robert A. Hefner III “saw a world in a drop of pond water” at age 15, he has been fascinated by science, energy and the big picture. His heroes include Darwin and Einstein. He has traveled the world to meet with energy experts from Singapore and China to Cambridge, Massachusetts, and has testified in Washington. Along the way, he developed a world-class Chinese art collection.

Hefner is a third-generation independent oilman who prefers natural gas. Armed with a geology degree from the University of Oklahoma, he worked in Phillips Petroleum’s economic analysis department in the 1950s. In 1959, he started his own outfit, The GHK Co., with two partners. It still drills today, focusing on deep- and shallow-gas plays, mostly in Oklahoma. He says today’s gas price is below replacement cost.

It’s an old problem. Gas prices were regulated and very low in the 1950s and 1960s, and gas was considered a nuisance. But not to Hefner, who believed early on that there are vast untapped resources of gas worldwide, and that gas would become the fuel of choice.

Hefner pioneered expensive, technically challenging and ultradeep wildcats in Oklahoma’s Anadarko Basin in the 1960s and 1970s. “We drilled many deep, world-record wildcats while always struggling to make payroll,” he says. One, the #1 Green, drilled in 1969, was at that time the second-deepest, and the highest-pressured, well in the world. It has since produced about 21 billion cubic feet, but when it was completed, gas sold for only 17 cents, so it was an economic failure.

Today, Hefner believes 21st century energy technologies will be the world’s biggest business and are something young people should pursue. And, he believes gas should be the major energy source for some time to come.

To that end he has just written *The GET: The Grand Energy Transition*. The book’s roll-out in Washington was planned for shortly after this interview.

Investor You’ve fought for gas-price deregulation and market share for 50 years. Why write this book now?

Hefner I wanted to share my life’s work about America’s abundance of gas and its importance in our energy future, because I don’t want to see America make the same mistakes we made in the 1970s. Then, all the big oil companies testified we were running out of gas. They were supported by the coal industry, and our government accepted the idea for years. Carter-era legislation actually prohibited using gas for power generation. Those 30- or 50-year mistakes put an extra 15 billion tons of CO₂ emissions into our atmosphere.



Investor What is your thinking behind GET?

Hefner GET is short for Grand Energy Transition. It’s the evolutionary transition from unsustainable, high-carbon solids and liquids to sustainable energy gases: natural gas, wind, solar and hydrogen. We have been decarbonizing our world for 100 years, moving from wood to coal to oil, and now natural gas—and away from high-carbon, complex molecules. The simpler the molecule, the cleaner the fuel: it’s more efficient and better environmentally. Gas is a big step forward, with only one atom of dirty carbon and four atoms of clean hydro-

drogen.

When we moved back to coal in the 1970s, we slowed that process and other countries followed our lead. Increased carbon use since the mid-1970s correlates to increases in world surface temperatures.

Investor How much natural gas does America have?

Hefner In the early 1990s, I predicted 3,000 trillion cubic feet. That’s probably equal to Russia’s gas supplies, but for some reason, we believe in Russia’s gas potential, not our own.

Investor You had this huge number before the advent of shale gas?

Hefner I did. Even in 1978, I thought it was 1,500 or 2,000 trillion.

Investor What direction should the U.S. take?

Hefner Many say use every fuel source, but I’m against that because we’d diffuse our talents and money and slow our environmental progress. The GET shows us the way forward. Solid fuels like coal are the past. Liquids like oil are on their way out.

Investor No biofuels?

Hefner No. They are an attempt to stay linked to our liquid past. What we should do is simply change the tanks in our cars to hold natural gas instead. Civilization can’t be sustained using biofuels for transportation. The origin of both oil and coal is a narrow window of temperature and pressure, but methane gas is created everywhere.

Investor What would you tell President Obama?

Hefner The fastest way to make enormous leaps forward is to make full use of our 2.2-million-mile gas grid that connects to 63 million homes, where about 130 million cars reside, or half the U.S. fleet. Let’s retrofit them to natural gas. That will create thousands of new jobs, spark billions of capital expenditures and keep millions at work in the automobile industry.

We should retool like we did during World War II so that over the next five years, we could eliminate half of our oil imports...and eliminate trillions of dollars paid to foreign oil producers.

We won’t diminish our use of coal and oil until consumers start paying the real price.

CLAYTON WILLIAMS

Clayton W. Williams Jr., chairman, president and chief executive of Clayton Williams Energy Inc. in Midland, has been a wildcatter for more than 50 years. Known as Claytie by one and all, the affable Williams rolls the dice in an industry full of risk-takers, having won and nearly lost several fortunes. He is also known for his candor, broad grin and stream of witty sayings. He loves to laugh at himself.

Colorful is but one of his claims to fame. When his daughter was born in the 1980s, he flew a pink flag from atop his office building in downtown Midland—replacing, temporarily, the Texas Aggie flag that normally flew there.

His passions? Big game hunting all over the world, world-class Brangus cattle ranching, and anything to do with Texas A&M University. His airplane and his tuxedo are both Aggie maroon.

Williams is a serial entrepreneur who preaches the gospel of free enterprise at his beloved alma mater, A&M, which he graduated from in 1954 with a degree in animal husbandry. He is a self-made leader who has founded 26 companies, built and sold numerous oil and gas companies, a major gas pipeline, a bank and real estate developments. He's won most of the awards the oil industry, A&M and Texas business community can give. He failed, however, in his 1990 attempt to win the governor's mansion in Austin.

He's a man of action. In 1982, when he needed to tear down an old drive-in theater in Midland to make way for ClayDesta, his new office park, his ranch hands on horseback pulled the screens down. Some 46 people have been with him for at least 20 years, so he jokes that either he pays them way too much or they can't find jobs elsewhere.

Williams once began his testimony at a Texas Railroad Commission hearing on the poor state of the industry by entering on a stretcher, bandaged and carried by a bevy of nurses. In 1991, when his private oil company was hours from having to file bankruptcy, he balked, deciding to keep going. With great effort, he paid back every dollar owed. In his 2007 biography, Claytie, he says it's how a man handles failure that determines his eventual success.

The current downturn is not his first rodeo. "I've seen all the ups and downs, but I'm a wildcatter—I'm addicted." Once again, Claytie is reinventing himself to survive. We caught up with him in Midland.

Investor Claytie, how are you coping with this latest downturn?

Williams Well, \$50 oil doesn't multiply as good as \$100 does—even an Aggie can do that math. But this



time, we wonder, how many other shoes are going to fall? Here we are now, worried about all the banks. What in hell is a subprime loan? In October, I had 13 rigs running, then I read in *The Wall Street Journal* that the banks would not even lend to each other. I said "holy mackerel," and I pulled back on my drilling.

I don't want to burn through these locations with the low prices. I'm being real conservative right now—I'm only drilling one well, and it's a \$15- to \$18-million wildcat in South Louisiana with BP. It works at \$3 gas. It's 20,000 feet deep.

You know, it takes time to explore. It's not a quarter-to-quarter thing. I once tried drilling some

wells in Argentina and got handed my hat, so I got my Aggie self back to the U.S.

Investor You've been through this before. What lessons can you give us?

Williams Don't sell anything at low prices—I learned that in the fifth grade. But, in 1981, I owed \$500 million. By 1982, I had sold my oil production to Petro-Lewis. I was cutting down because I knew I needed to. Then, in 1985, the Saudis opened the valves and oil was dropping by a dollar a day. I still owed about \$300 million and I figured we only had 11 days left! I woke up one day with a migraine headache, but I called it the "Oh, ****, I'm going broke" headache.

You know, debt is good, but it's also bad.

Investor What other advice do you have?

Williams There is no long run in this business until you have a short run first. If you don't like this business, you'd better get out of it.

Investor And now you're trying to form a service company?

Williams The business model at Clayton Williams is broken. We always shot a lot of 3-D, drilled one good well and one bad one. The frac ended up costing as much as the well. We tried some Chinese rigs, but that equipment didn't speak English. Pipe doubled, tripled. How much can you spend buying all the things you need to get ready to drill?

So I've got a new unit called Little Dog Drilling. If you don't have rigs at the start of the next upturn, you'll miss out, so I'm preparing.

We're trying to streamline the company, cut costs, train people on the rigs, even acquire some frac trucks if I can. The next boom begins whenever oil and gas supply falls.

I don't feel like I'm earning my keep unless I'm doing something—but that attitude can get you in trouble, too. You've got to be patient.

MARLAN DOWNEY

This month, the American Association of Petroleum Geologists will give its highest honor, the Sidney Powers Award, to Marlan W. Downey, the renowned geologist, professor, author and consultant who led two major, international oil companies, and still is chief executive officer of his family-owned E&P company.

Raised in Nebraska during the Depression, Downey entered local Peru State College at age 16 and received a bachelor's in chemistry in 1952. After a U.S. Army stint in Korea, he entered the University of Nebraska and earned bachelor's and master's degrees in geology. He began his career at Shell Oil Co. in 1957 and, in 1969, became Shell's youngest chief geologist. He retired after 30 years, serving by 1987 as president of Pecten International, a Shell unit.

In 1987 he formed Roxanna Oil Co., the Dallas-based family company that is still involved in U.S. and international exploration. It consults to private and major E&Ps. Downey has been following the gas shales—both here and in Europe—with a lot of interest.

In 1990, meanwhile, he joined Arco, rising to president of Arco International. After retiring a second time in 1996, he was the Bartell professor of geoscience at the University of Oklahoma and chief scientist at the University of Oklahoma's Sarkey Energy Center, stepping down in 2002. He found time to be president of AAPG in 2000-01.

Today he divides his time between a home in Dallas, a ranch north of the city, and Cornwall, England. He is a licensed blacksmith with forges in Texas and Cornwall. "I took it up because, as a CEO, a lot of your work involves people's foibles and problems...but pounding iron is therapeutic." Recently he forged a pair of spurs for another legend, Herbert Hunt, at whose ranch he speaks during an annual, no-holds-barred private conclave of 20 energy experts. One of their conclusions: The U.S. needs to incentivize people to use natural gas vehicles.

Downey has not slowed down. He teaches every other semester at Southern Methodist University in Dallas, is on the board of the AAPG Foundation and consults to municipalities on how they can secure low-cost, local energy from sawdust, landfills or other alternative sources. He is on the board of privately held Object Reservoir, Foundation Energy and Matador Resources. "This isn't too busy if you're having fun," he says. "I don't answer any phone calls until 9:30 a.m., and that's what I call retirement."

Investor Tell us about your debate in London in March.

Downey I was at the so-called Barbican energy conference that's held every four years. Peter Gaffney (CEO of Gaffney Cline & Associates) and I debated:



Are national oil companies (NOCs) the future of the petroleum industry? Peter, an accomplished debater, spoke for the international oil companies (IOCs) but was kind enough to allow me to take the easiest side, the NOCs.

They have nearly all the reserves now. It used to be that the IOCs had all the talent, the capital and the technology, but that's no longer true. Petrobras doesn't need to go to Shell to handle deepwater technology. Abu Dhabi is awash in capital. Many great engineers are available. The world has changed and all we can do is wish

them well—we helped them get to this point. We had our turn.

Investor What is Roxanna focused on?

Downey I am "the gray eminence" in the background. I have a tremendous president in my daughter, Julie, who left Marathon after 22 years to run it. We drill a few wells a year and we do a fair amount of consulting. As far as I know we are the only consulting firm that, when we recommend a deal, takes a working interest alongside them if they take it, on the same basis as they do. We hold small interests in 600,000 acres, including the Barnett, Woodford, Marcellus and some other plays.

I see 1 quadrillion cubic feet of recoverable gas from shales in the U.S. and, given time, we could probably double that with better technology. But my main interest recently is to look at the economics and the reality of unconventional energy supplies.

Investor What do you conclude about alternatives?

Downey It's pretty tough. If you want to invest in something that doesn't need a government subsidy, you'd have a heckuva time. I'm looking now at local solutions, for a small city or county.

For example, I went to Lexington, Kentucky. I said to them, "Why don't you look at ways to produce your own low-cost, local electricity or natural gas...such as from sawdust mills or waste or landfills?" A few cities have put in sewage plants that extract methane. San Antonio makes \$10 million a year of cash flow from tapping sewage gas. Why aren't more cities doing this? They can take some control of their energy supply. I can't fix the world and I'm not going to be around to see nuclear fusion...but, on a local basis, we can do many things now without screwing up the economy. Start small, do well and then do it bigger.

Investor What do you worry about most?

Downey Government is well-meaning; those people are smart, but policies may be enacted where they have no idea of the unintended consequences. One stupid committee passing a law could wipe out an industry and the American economy. The essence of wisdom is listening and thinking about consequences.

PETE MATUSZCZAK

One day in the late 1960s, Amoco Production Co. petroleum geologist Roger A. (Pete) Matuszczak was sitting with his feet up on his desk in Denver, staring intently at four base maps of eastern Colorado's Wattenberg area. Next to them he had glued small-scale electric logs for the few wells that had been drilled to that point in the area, data on cores and drillstem tests, and a J-Sandstone isopach. He also ruminated on the Amoco seminars he had attended on the Mississippi Delta and Mesaverde sandstones, which compared modern and ancient deltaic environments.

Amoco had plenty of leases in the Denver-Julesburg Basin. Now, the pressure was on to turn them into production—in an area of only small fields, with “dinky” production.

“I stared and stared at the wall,” recalls Matuszczak, “and what finally hit my brain was that this was a delta-front sandstone with reservoir quality similar to Basin Dakota Field (in the San Juan Basin). I realized it was all one big prospect.”

Big indeed. Today Wattenberg Field has produced more than 3 trillion cubic feet of gas and 400 million barrels of oil (see cover story in this issue). It is the eighth-largest gas field in the U.S.

Matuszczak, a native of Wisconsin, served in World War II in the 77th Infantry Division on Okinawa. He attended the University of Wisconsin on the G.I. Bill, earning his bachelor's and master's in geology. “I wanted something that would get me out of the office at least part of the time,” he says.

His first job was with Stanolind Oil and Gas Corp., the E&P arm of Amoco, in Casper, Wyoming. After three years of wellsite and surface geology he was assigned to the D-J Basin. Stanolind had acquired leases across Wyoming, Nebraska and eastern Colorado following the Ohio Co. discovery of oil near Sidney, Nebraska. Stanolind started a program of support wells and opened a small district office in Denver, which Matuszczak joined in 1954.

Matuszczak left Amoco in the late '70s and worked for Edward (“Tiger Mike”) Davis, the colorful founder of Tiger Oil Co. After its bankruptcy in the late-'80s, Matuszczak operated a bar in a Denver suburb with a fellow geologist for more than a decade. Several years ago, Tiger Mike called and suggested he return to work for the reorganized company. At 84, Matuszczak still heads to downtown Denver several days a week to work on prospects.

We talked with Wattenberg's founder about the early days of the field, his wife's reaction to his find, and the biggest thrill he got from his career.

Investor What was Amoco's reaction when you presented your concept for Wattenberg?



Matuszczak I had made cross-sections and assembled reservoir-quality data on Basin Dakota Field, and proposed a leasing area of more than 100,000 acres. When I finished, geologist Bill Smith, vice president in charge of the division, turned to Don Hembre, the district geologist, and asked, “What do you think?” Hembre said, “I think he's right.”

Investor How did the first wells do?

Matuszczak At the time we had a 60-well support program with Tom Vessels, and I asked Tom if I could move a few of the locations into the Watten-

berg area based on an idea I had. The well logs fitted the delta-front idea, and Amoco put eight rigs to work chasing the J-Sand. The discovery, made in July 1970, was the Tom Vessels #1 Grenemeyer in Adams County; its initial potential was 485,000 cubic feet of gas and 10 barrels of oil per day.

Investor How did some of the shallower formations emerge as producers?

Matuszczak A couple of years later, I had another idea, based on my experience in 1954 with Professor W. O. Thompson, head of the geology department at the University of Colorado. I had assisted him in mapping the outcrop of the Hygiene sandstone along the Front Range. A producing well in the Pierre-Black Hollow area in the outcrop had found several minor oil seeps. With not much to go on, I went back to the committee and made a case for gas-detector units on the eight-rig program to check the Hygiene sandstone for shows. I made a map based on highest gas units, which is a pretty shaky basis for drilling a test well. I had five high gas units on the map and I got five air-drilled wildcats.

The first four were dry holes. The fifth was the discovery that found the shallower Sussex/Shannon that overlies the J-Sand.

Investor What were the economics at the time?

Matuszczak The play was based on gas at 25 cents per Mcf. We knew there were shows in the Niobrara-Codell formations, but at the time they were minor to the main play.

Investor What was the reaction of your family?

Matuszczak (Laughs) When I came home after they okayed the play, I told my wife, Iris, “I think I've found a big gas field!” She barely looked up from her grocery list! So much for being a hero!

Investor What was the most rewarding aspect of your work?

Matuszczak Bringing up one of those cores from 6,000 or so feet below the earth's surface, holding it in your hands, seeing the oil shows or fossils, and knowing that other than God, you were the only person to have seen it.

—Susan Klann



DAVID GRIFFIN

David G. Griffin is coming up on his 50th year in the oil and gas business, having graduated in 1960 from what is now known as Oklahoma State University, which he attended on a basketball scholarship. The Midland-based mechanical engineer (petroleum option) has drilled from North Dakota to South Louisiana to East Texas; he even worked offshore for a short time. His career has taken him from Amerada (now Hess Corp.) as a green engineer in North Dakota to the presidency of NRM Corp., one of the early public drilling income funds in the late 1970s and early 1980s. He and some friends also bought and took private a penny stock E&P called Merit Energy Co. in the late 1980s that had included John Wayne and other movie stars as investors.



“I’m an old-school, free-enterprise guy who likes hard work so you can guess how I feel about entitlements and handouts. But it’s a mystery to me and all who know me how I’ve lasted this long in the oil business,” jokes the native of Hope, Arkansas.

Griffin has been chief executive of Griffin Petroleum Co. in Midland since 1983 (he has also been its president). The private company generates prospects and operates in the Permian Basin and elsewhere. It now includes his son, also a petroleum engineer.

“He and I run the company. He’s a good hand and everybody marvels at how good he turned out given I’m his daddy. There must have been a genetic cycle skip,” the older Griffin quips. *“He has worked his way up to partner and president of the company and now he’s trying to skid my rig to low-paying ‘advisor’ with no authority.”*

That sense of humor has enabled him to weather all business cycles. Meanwhile, Griffin has co-authored SPE papers, served on the National Petroleum Council from 1990 to 1993, and was named Permian Basin Engineer of the Year in 1997 by the Texas Society of Professional Engineers, among his many other professional activities and honors. Also active in several Midland charities, he’s currently chairman of the board for High Sky Children’s Ranch.

A talk with Griffin gave us a portrait of how private independents are faring in the Permian Basin.

Investor How have lower oil prices affected you?

Griffin If prices go back up, we have probably 50 to 75 wells (PUDs) to drill on nonoperated Wolfberry projects, but the costs are not down enough just yet. We’re not drilling but we are getting warmed up. We could do okay with \$65 or \$70 oil, but we’d like to see \$75-plus to really sleep better at night. In the Wolfberry, we’re talking about \$1.2- to \$1.4 million for drilling and completion costs currently and it needs to be lower.

Casinghead gas is an important part of the cash-flow stream on Wolfberry wells (about 15%-20% now) and

the price of natural gas is adversely affecting the economics.

We will drill some moderate-risk San Andres/Clearfork prospects on the Central Basin Platform later this year, plus continue to develop our shallow production in Pecos County, Texas, with the goal of waterflooding at some point.

Investor What philosophy has kept you going through the cycles?

Griffin “There’s never been a horse that ain’t been rode, and never been a cowboy that ain’t been thrown.” That keeps me grounded when I think I’m gettin’ it all know’d up. I have a motto for our crew: Honesty, integrity, fair play and social responsibility—plus, add value as you go. And don’t forget to have fun.

(Famed college basketball) coach John Wooden is one of my heroes. One of his sayings that I use to inspire our group is: “The player that makes the team great is better than a great player.”

Investor What lessons do you draw on?

Griffin The last hiccup in prices didn’t teach me anything new I hadn’t already experienced. I already knew not to get too “chesty” when oil prices run high—don’t run up a bunch of debt. Money is a lot easier to borrow than it is to pay back.

Nowadays one of the many buzz phrases is “keep your powder dry,” but I’m giving a talk soon on “How to survive with wet powder.” Costs have always lagged product prices both going up and coming down and they haven’t gone down enough yet to send us back drilling some of our resource-play acreage.

Here’s another major-league key to victory: Operations, operations, operations. Our folks know how to get things done in the field and keep costs down.

Investor Has your focus changed over time?

Griffin I’ve never been smart enough to know where I shouldn’t be. I’ve always said that with the right people on the ground, in this day of high-speed communication, we can operate literally anywhere in the U.S. other than offshore and on the “Left Coast”—too many greenies there. We even have leases in South Dakota, so we’re not afraid to wander from our home base.

Investor I assume you’re never going to retire?

Griffin This business is so infectious and doing deals is exciting. I always think the “big un” is just around the corner. I don’t fish or garden and physically can’t play golf every day, so I like to try to pull my weight. We’ve got 155-plus years of experience covering every discipline, and we all share ownership in the deals we do.

I also want to finish my book, “Working Without a Net,” which is how I’ve felt most of my career. And I have a book of poems that’s been in the works a long time. Some of ’em even rhyme.

LEIGHTON STEWARD

Geologist, author, environmentalist and energy executive Leighton Steward is still following his passions. This time, he's researching carbon dioxide as it intersects with climate-change policy. The former chairman and chief executive of Louisiana Land & Exploration Co. may be retired in Cody, Wyoming, but he's about to launch a website, plantsneedco2.org, which goes with his new foundation, started with Houston friend Corbin Robertson, head of Quintana Minerals.

Separately, he is on the board of EOG Resources, the Southwest Research Institute and M. D. Anderson Cancer Center in Houston. He is also chairman of the Institute for the Study of Earth and Man at Southern Methodist University, Dallas, where he obtained a master's in geology in 1960.

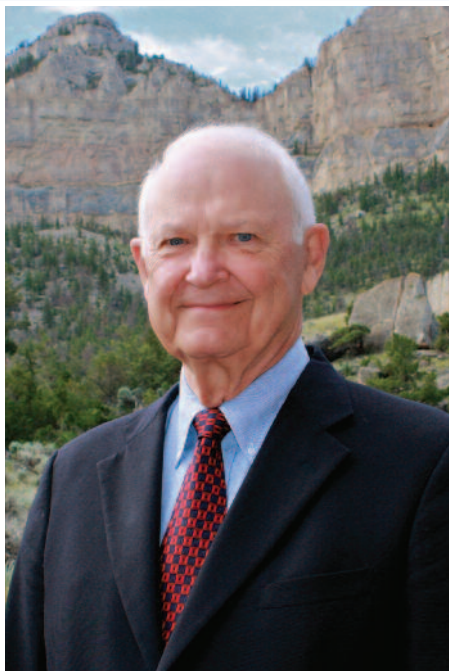
After time in the U.S. Air Force, he joined Shell Oil Co. in 1962 in Houston, later becoming manager of Shell's Gulf of Mexico operations out of New Orleans. While there, Shell discovered the prolific Cognac and Eugene Island 230 fields. He worked with Shell colleague Mike Forrest to prove the latter's discovery of bright spot technology for hydrocarbon indicators, today a standard tool used by geologists worldwide.

Steward later became the head of New Orleans independent LL&E, which was the largest owner of coastal wetlands in the Lower 48. Concerned that they were sinking, he self-published a 26-page booklet, "Louisiana's National Treasure," that explained why, and what might be done about it. Twice he was chairman of the Audubon Nature Institute and he chaired the National Wetlands Coalition for 10 years.

LL&E was acquired by Burlington Resources Corp. in 1997 for \$3.2 billion, creating one of the first super-independents and the third-largest holder of U.S. gas reserves (now part of ConocoPhillips).

To the public, Steward is best known as lead author of 1995's *Sugar Busters*, which sold more than 4 million copies and spent 16 weeks at No. 1 on the *The New York Times* bestseller list. It gave still-popular weight loss and diabetic advice.

He has won awards for leadership from the American Petroleum Institute, the Independent Petroleum Association of America and the American Association of Petroleum Geologists. Steward is past chairman of the United States Oil & Gas Association, All-Ameri-



can Wildcatters and the Natural Gas Supply Association. He represented the industry on Republican and Democratic presidential missions to the former Soviet Union, Turkey and Pakistan.

His latest project? Researching the agricultural benefits of increased airborne CO₂, while countering what he calls "the misplaced blame on CO₂ for causing global warming." Steward is now revising his 2008 book on the topic, *Fire, Ice and Paradise*, for a second edition.

Investor How did the wetlands book come about?

Steward My wife says everybody has a book in them. I guess no one had really explained all this before in simple language, so I did. The booklet caught on quickly—we gave away 110,000 copies. It even focused our Louisiana congress-

sional delegation at the time. Sadly, I'm afraid the wetlands are still sinking.

Investor Your third book may be the most important of all.

Steward This climate thing came about after I retired. Even as a geologist, I wasn't aware of the effects of carbon dioxide, so I started documenting it. Did you know that CO₂ levels used to be 10 to 15 times higher than they are now? And that ice cores show that temperatures rise before CO₂ does, with CO₂ lagging by an average 800 years?

The U.K., Germany, Russia, China, all agree...It was shocking information to me...a cause does not follow an effect! But some high-profile people are trying to stiff-arm scientists who believe this, and they want no debate on it.

Investor What is the agricultural angle?

Steward The more CO₂ in the atmosphere, the lush the vegetation. If the world's population is going to 9 billion, we can't feed them all on the existing arable land without converting wildlife habitat to farm land. Experiments show that CO₂ has a dramatic impact on plant growth. If CO₂ levels nearly double, barley would grow faster by 41.5%...rice growth goes up 34.3%. This is from 152 studies!

I challenge you to find where CO₂ is a pollutant. We all breathe it in, then out—even into someone else when we do CPR! U.S. submarines let CO₂ go to 8,000 parts per million—way above what climate-change advocates say is safe to allow. It's in our soda pop and in dry ice. The public is not aware of this, that the science is definitely not settled on this. I am excited about this—it is highly documented and I'm not afraid to talk to anybody about it.

KENNETH DANNEBERG

Last month, Kenneth I. Danneberg was inducted into the Rocky Mountain Oil & Gas Hall of Fame, along with 39 other distinguished oilmen from the region, at a Denver gala hosted by the Independent Petroleum Association of Mountain States.

The 1948 University of Kansas graduate has worked in the oil industry for more than 50 years in the U.S. and internationally. Mostly retired now, he still manages his private investments: U.S. production and two waterflood projects in Alberta, Canada, where he is a partner with Hunt Oil Co.

While in school, the Missouri native roughnecked for two summers for Phillips Petroleum Co., catching the oil bug early.

Later, he did post-graduate work at the U.S. Naval Academy in intelligence. He served in World War II in the Navy and in Korea as a lieutenant in the Naval Reserve, ending his service in 1953. He still finds international relations and intelligence a fascinating field.

In 1956, Danneberg was a founding partner with Henry (Hank) Zoller in various Zoller and Danneberg partnerships and operating companies; later he co-founded Zoller and Danneberg Exploration Ltd., which offered public drilling partnerships in the 1970s. They focused on the Julesburg, Paradox and Anadarko basins, and also owned Oil Creek Drilling Co., which operated eight rigs and had offices in Houston and Oklahoma City.

After Zoller sold his interests, Danneberg formed Premier Resources Ltd. in 1971, a public Denver E&P of which he was president and chairman for nearly 20 years. He sold it to German investors in 1988, but retained interests in about 100 properties in Texas, Oklahoma, Wyoming, Alabama and Alberta.

After “retiring” in 1990, Danneberg consulted for an international shipping group and international banks, and assisted in the creation of companies in the Middle East. He was retained to do an oil and gas feasibility analysis of Turkey, Kazakhstan and Azerbaijan, leading to the formation of DanOil LLC, which operated a coalbed-methane project in the region.

In Denver, he has been active in Republican causes, and is an honorary division chief in the Denver Police Department, thanks to 20 years on the executive committee of The 100 Club. He also served on the board of The International Bank, based in Denver.

Investor How did you first get into the oil and gas business?

Danneberg I went to KU Law School for a year, but quit when I was offered a job buying royalties in North Dakota for a Tulsa company. This was when the Williston Basin was kicking off, in 1954. In 1955, I joined a small drilling company and in 1956, we formed Zoller and Danneberg partnerships.



Investor Would you join the oil industry if you could do it over?

Danneberg I don't know, to be honest with you. When we were young, it was six and seven days a week. We just started hustling. I talk to these young people today and they have so much more technical background than we did at their age. It's fantastic what they can do.

Investor What was the best advice you ever received?

Danneberg The greatest thing I've learned is that this business is always going to be cyclical. This is the third major downturn I've seen in 55 years. Everybody has to start thinking it's going to settle down soon, but I don't think natural gas will recover any time soon. I don't know how we'll ever get back to \$10 gas until we figure out how to market it all. For oil I see a more solid market.

I'm on the board of a small Denver company called Blue Creek Energy Inc. that has coalbed properties in Wyoming, with financing out of New York. But the gas price is just killing them. They are netting less than \$2. There are going to be a lot of horror stories out there and if you are sitting on a lot of cash, you'll be able to buy at the bottom of the market.

Investor How did you get involved in Turkey?

Danneberg That was a project of Fred Hamilton, A.J. Miller and myself. We formed DanOil and took a big coalbed-methane license. But a lot of things went sour on us. We had done engineering and geological work, but the international situation wasn't good. We were there around the time of the first Gulf War, in 1991, and someone set off a bomb near our office building in Ankara. We shut the company down in 2000.

We had drilled a couple of wells that had problems. There was not enough good equipment there and I had to bring a rig over from Houston. We didn't have the right people. It turned out Turkey ended up being a place to drop a wad of money.

We did identify a lot of natural gas potential though, and that sort of set up Toreador Resources to go there later on. (Editor's note: In recent months, Toreador has pulled out of Turkey after finding gas reserves on the Black Sea shelf. See *Oil and Gas Investor*, February 2008.)

Investor Do you still have contacts in the Middle East?

Danneberg I stay in touch with some former Turkish employees and government representatives. Uncle Sam tried to get me to go over to Kirkuk in 2008 to help set up the way they do farmouts in northern Iraq, but I said no. After all, I had just celebrated my 81st birthday. That's going to be an interesting play, though. There are some fantastic opportunities, but you've got to be prepared for anything.

BILL BARRETT

William J. Barrett is a legendary hydrocarbon finder credited with discovering oil and natural gas in several Rocky Mountain basins. Among his finds are the Wind River Basin's Madden Field, which contains up to 4 trillion cubic feet of gas, and Highlight Field in the Powder River Basin, which holds several hundred million barrels of oil. And, he brought gas drilling in the Piceance Basin to the forefront.

"Exposure is the name of the game. I always believed in growth through the drillbit and if you don't take a swing at the big reserves, you won't find 'em," he says.

He founded Bill Barrett Corp. in Denver in 2002 but retired in 2006 as chairman and chief executive officer. This, his second public E&P, has amassed more than 800 billion cubic feet equivalent of proved reserves in the Rockies. It is wildcatting in the Mancos, Cody, Gothic, Cane Creek and Hovenweep shales.

This is after selling Barrett Resources Corp., which he founded in 1983, to The Williams Cos. for \$2.8 billion in 2001. That company had assembled 2.1 trillion cubic feet equivalent of proved reserves in the Rockies and Gulf of Mexico.

Barrett explored the Rockies for nearly 50 years, beginning in 1957, when he received a master's degree in geology from Kansas State University. At El Paso Natural Gas Co., his first assignment was as a research-lab stratigrapher in Salt Lake City.

"I got to run the lithology on all of El Paso's wells in the Rockies, primarily wildcat wells, identifying the porosity and permeability and various geologic characteristics of rock samples from Utah's Uinta Basin, Colorado's Piceance Basin and Wyoming's Greater Green River Basin," he says.

Later, he joined Amoco Production Co. in Casper, Wyoming, and then Wolf Exploration as chief geologist. Barrett talked Wolf into keeping a quarter interest in the prospects it sold. Turns out it was a good move: on those leases, Barrett found two major Wyoming oil and gas fields. "We went from zero production to 10,000 barrels of oil equivalent per day."

Barrett and colleague Chuck Shear formed B&C Exploration, also Rockies-focused, and then merged with Rainbow Resources. Rainbow was sold to Williams in 1978. After a noncompete expired, Barrett formed Barrett Resources, which Williams bought in 2001.

In 1998, he received the Wildcatter of the Year award from the Independent Petroleum Association of Mountain States. In 2003, Barrett's career was recognized for its many exploration successes by the American Association of Petroleum Geologists. His company's multi-Tcf West Tavaputs gas discovery in



the Uinta Basin won Oil and Gas Investor's Discovery of the Year Award for 2005. And in 2004, he received an honorary doctorate in petroleum engineering from Colorado School of Mines. (For more on Barrett, see "He Rocked The Rockies," Oil and Gas Investor, June 2006.)

Investor Bill, there have been so many changes in recent years, what do you hang your hat on, in geology?

Barrett The principles and concepts of geology aren't going to change. I've

never seen a period where there haven't been opportunities for a geologist to find hydrocarbons. And with the advances in geophysics and completion/frac technology that have occurred over this time, the whole industry has been able to move into many projects that just weren't economical earlier in my career. If necessity is the mother of invention, then technology might be the father.

Investor What makes a good oil and gas finder?

Barrett There are several things that make a good exploration geologist, but they apply to engineers, landmen, almost anyone...First is the love of the chase. (I love subsurface geology—you always learn something new.) Second is wisdom—knowing what to do and understanding the risks. Oil and gas finders are leaders, not followers, and they have the ability to think outside the box. They are doers. You can't simply have a vision, you must have the ability to sell it.

It's the work and not the clock that tells you it's quitting time. You have to be a hard worker with common sense. The harder you work, the luckier you get. Details make all the difference...Prepare relentlessly...

You have to be patient, persistent and above all, accountable at all times. You have to be your own man and listen to your gut, trust your instincts, and pound the table for what you believe.

Investor Are we blurring the conventional and unconventional plays?

Barrett Our job is to make the unconventional conventional and we're doing a pretty good job. Technology helps with that. Right now shale gas is at the forefront, and with good reason. There are 25 to 30 shale-gas basins in the U.S. The USGS thinks there are 600 to 1,200 Tcf. Just the Marcellus covers 30 million acres. It is flat amazing.

Investor What do you make of shale potential in the Rockies?

Barrett We are a bit behind here, but the Bakken is already there. Recent studies indicate there could be 3.6 billion barrels of recoverable oil. It's a great play. But there are a lot of other potential shales here in the Rockies. The Pennsylvanian Gothic, the Hovenweep and Cane Creek, the Cody. These are real. It's made a believer out of me.

JON REX JONES

Jon Rex Jones is one of those always cheerful, productive people who motivate others by sharing their enthusiasm and knowledge. He says he spends more time with Houston-based EnerVest Ltd., of which he is chairman and co-founder, than he does with two family-owned oil and gas businesses. One, Van Operating Co., in Albany, Texas, is operated by his brother, A.V., who was profiled in this space in January 2008. He is also chairman of Austin, Texas-based Jones Energy Ltd., operated by his son, Jonny.

But that's not to say Jones isn't involved. This second-generation oilman knows the business from top to bottom. During summers in high school and college, he worked in his geologist father's business, where he helped lay flow lines and learned to read old well logs, looking for bypassed pays.

His first job out of the University of Oklahoma in 1957 was as a toolpusher on his father's two rigs back in Albany, a town of just 1,800 people. (He served as mayor from 1975 to 1978.) But armed with his University of Oklahoma degree, Jones also "sat the wells" as the geologist in charge of examining well cuttings. Although he was doing two jobs, "They didn't pay me double," he jokes.

He has been active in numerous industry groups through the years, including the National Petroleum Council, and was chairman of the Independent Petroleum Association of America from 1983 to 1985. He is a founder of OU's Sarkey's Energy Center, and in May 2008, the university awarded him an honorary doctorate in humane letters.

EnerVest has launched fundraising efforts for its 12th private-equity fund, aiming for \$1.5 billion from institutional investors to invest in the most favorable oil and gas acquisition market in a decade. At press time, the company had just closed an acquisition from Exco Resources Inc. for \$145 million, including shallow Clinton and deeper Knox gas formations in Ohio and Pennsylvania. EnerVest now operates nearly 16,000 wells in 12 states, and is the No. 1 producer in the Texas Austin Chalk play.

"We like to operate," says Jones. "You can control your costs and you have a better relationship with your investors if they know you are operating and in control. They trust you."

Oil and Gas Investor caught up with Jones at the IPAA annual meeting, which he's been attending since the 1960s, to get his perspective on the industry and his businesses. He was named IPAA's Chief Roughneck in 1998.

Investor EnerVest has been named a Best Place to



Work in Houston several times by various media. How do you motivate your employees?

Jones I am a real cheerleader because I believe enthusiasm is catching. John Walker (EnerVest chief executive officer) and I started this company in September 1992, and right from the start we talked about employees as much as we did which basins to go into. It's a family-type relationship, which I know is a worn-out phrase, but it's true. At EnerVest we celebrate birthdays, holidays, deal closings, Halloween, successful wells, etc.

We have an open atmosphere where everybody knows what is going on in the company, and everybody benefits with bonuses. Employees have the opportunity to speak their feelings about what we are doing. It's a fun place to work, but challenging, as we constantly buy, exploit and sell assets. It's a very active place.

Investor What is your role?

Jones I give advice and counsel as opposed to picking out things to buy. We have a great team for that and most of them have been in the business for a long while. John Walker does a great job of mentoring them. Cheerleading is what I do best, not second-guessing.

Investor How has the oil business changed?

Jones It's changed in two ways. One is that technology has taken such a leap forward and you see it every day. The other thing that's new is we have an administration that is very unfriendly to our industry. Sure, this business has been a whipping boy for years, but this time they are really after us. I haven't seen this kind of attack before, and I go way back.

Investor What was the big issue in 1983-85?

Jones When I was president of IPAA, we nearly lost the percentage depletion allowance. The IPAA general counsel told me it was gone, on a Friday. I came home to the Houston Galleria that weekend and had 30 black T-shirts made saying, "Save Depletion!" I went back to Washington on Monday and made all the IPAA staff wear those shirts. I told them we were going to fight this with all we had and spend all our political capital if that's what it took. We saved it. Now it's under attack again. If we lose that, and intangible drilling costs, that would take 20% to 30% out of our capital to drill.

Investor Your best advice?

Jones It's all about costs. You can take a No. 2 pencil to calculate the decline curve anywhere in North America. But the important thing is costs. If they get away from you, you're dead in the water. In costly times, the only thing you can do is increase efficiency.



EVVY GOYANES

In April 2009, long-time energy banker Everardo Goyanes stepped down as president and chief executive of Boston-based Liberty Energy Holdings LLC, which invests in oil and gas exploration, development and acquisitions through direct working interests and private-equity investments.

He has a new role as chairman of Liberty Natural Resources, which has added mining investments to its portfolio. He still advises the upstream investment committee during its decision-making process.

The parent company is Liberty Mutual Group, a Boston-based, diversified global insurer and the sixth-largest property and casualty insurer in the U.S. In December 2008, Liberty Mutual had \$104.3 billion in consolidated assets.

An economics and international finance graduate of Cornell, with an MBA from Babson Institute, Brooklyn-born Goyanes began his career at the old Chase Manhattan Bank at Rockefeller Center in 1967. He spent 10 years there, working with large multinational customers all over the world, and was the sole relationship manager for Exxon at that time.

Seeking a change of pace and less world travel, he moved to Denver in 1980 to become chief financial officer of Forest Oil Corp., one of the bank's clients. "It seemed like a good idea at the time, and then prices went south. You remember the '80s. We had to cut G&A in half. It was brutal."

Goyanes returned to New York in 1989 to lead ING Capital's new energy group started by Dutch bank and insurer ING. In its heyday in the 1990s, ING was one of only two or three entities providing mezzanine funding for oil and gas. Later, ING added most other kinds of financing for energy as well.

He joined Liberty in 2000 to help it begin nontraditional energy investing. "It's been a lot of fun and we had exquisite timing," he says. "We did not flip investments, we held them. And, we stayed close to the resource itself, close to the small-cap companies that we were building up. There are E&P guys we've been involved with through four iterations.

"We don't have the same liquidity concerns as some others, so we can be extremely long-term players. That makes us a good partner to have, and people like that." Liberty funded Petrohawk Energy Corp. and Energy Transfer Partners before they were public, and private E&P Laredo Energy, among others.



Oil and Gas Investor caught up with Goyanes in Houston where he was attending a board meeting of Plains All American Pipeline LP; he heads its audit committee.

Investor Why the job change at Liberty?

Goyanes There was a natural point of transition given the maturation of the oil and gas operation, so now I have more flexibility to do more of my fine-art black-and-white photography, see more of my family — and catch more fish!

Investor There's not a lot of oil and gas in Brooklyn.

Goyanes It's amazing where I've ended up. Exxon was the largest energy client in the Chase Manhattan branch where I worked at

that time, and we did a lot of business with them. In 1974-'75, I moved out of Rockefeller Center and joined Chase's head office petroleum department (in another branch) and started traveling the world.

Investor You head the audit committee at Plains.

Goyanes Yes, and it's not a lot of fun. That's hard work and it puts a target on your back. But our board works very hard and knows what's going on, and Plains' management tells us everything. That's the answer to everything.

Investor How has energy banking changed?

Goyanes The '70s were so far away from what we have today. Back then it was all new and we made it up as we went along. That was the time of the first nonrecourse project-finance loans. We had one Exxon project in Malaysia that took us five years to do. It was fun though.

Investor Would you still recommend banking as a career for young people?

Goyanes Yes. The whole concept of a free banking system allocating capital, while deciding what makes a good project, is the essence of capitalism. It has a practical value and a philosophical value. It can be hard work, but a lot of fun for young people.

Investor What advice do you have for young bankers?

Goyanes You can't divorce yourself from whatever Washington is going to do. The other thing I'd say is, specialize in an industry; tie your finance knowledge to one specific industry. You've got to know finance, but just understanding money isn't enough. The third thing I'd say is your reputation is everything: be honest, be fair. Try to strike a win-win deal. If both parties are winning, something good will happen. If not, something will go wrong. There are no secrets.



PAT FRENCH

Even in Texas, it is surprising how poor the energy industry's image can be. That's why Pat French is using his trade association experience to get the word out, as president of the Foundation for Energy Education, an affiliate of the 3,300-member Texas Alliance of Energy Producers. Based in the group's Houston office, French leads a multimedia campaign to teach children, train educators, and inform the public about the key role oil and gas plays in the Texas and national economies.



These efforts grew out of a 2005 survey that documented some alarming public attitudes. More than 50% of respondents thought the Texas oil and gas business was under-regulated, and 70% wanted to give surface owners supremacy over the rights of the mineral estate. The Lone Star energy industry, French says, has to confront the fact that it has lost its traditional rural base of support as more people are urbanized. Too, newer residents who have moved to Texas in the past three years have a much different, and less positive, attitude toward oil and gas than longtime residents do.

Clearly, a new, more precise message has to be sent.

French knows how to get a message across. A 1975 graduate of the University of Maryland with a B.A. in government and politics, he began his career on Capitol Hill in 1977 with the finance committee of the Republican National Committee, supporting fund-raising for candidates for office. Next, he served 12 years with the U.S. Chamber of Commerce as a liaison to Fortune 500 companies, with assignments in Chicago, Dallas, San José and Washington.

In 1991, he became a senior partner with The Association Development Group, a Washington consulting firm that helps national business/trade associations. There, he was first exposed to the oil and gas industry through major clients such as the Independent Petroleum Association of America and the American Gas Association.

In 2000, he came to Texas and joined the Texas Alliance of Energy Producers, recruited by its president, Alex Mills, a friend from IPAA days. Today he is senior vice president of the alliance and president of its Foundation for Energy Education.

French, a former board member of the Global Energy Management Institute at the University of Houston, is currently on the advisory boards of the National Corrosion Center at Rice University and the Houston Committee for Foreign Relations.

We talked with French about the foundation's ad campaign, which this year goes live on CBS Internet radio in Dallas and Houston. A broader public effort begins in March with an interactive Internet program

prepared in conjunction with new videos from Schlumberger at the foundation's website. These programs, and more, are meant to repair the "huge disconnect between how the public perceives this industry, and how it perceives itself," says French.

Investor What did you glean from your time with the Republican National Committee?

French I learned a real appreciation for the party's emphasis on business and the economy, and their importance to the nation as a whole. It made a big impression on me. I've been with business

lobbies ever since.

Investor What are the alliance's main activities?

French Our government-relations efforts were rebuilt from the ground up in 2000, when we merged the West Central Texas Oil & Gas Association with the North Texas Oil & Gas Association. This includes direct, personal lobbying, building those critical relationships with legislators. Second, we have focused on coalition building with other oil and gas groups and even non-industry groups. Third, we have developed a major grassroots capability. Finally, since Texas is home to the largest number of independents in the U.S., we decided we needed a Washington presence, so in 2007 we hired former Democratic representative Charlie Stenholm. He knows the congressional leadership and can provide that all-important access.

Two things are important to us: to be substantive and to be effective. We want to show measurable results. A large membership base is important because it translates to a stronger voice and greater political influence.

Investor In 2010, what will be the focus for the Foundation in Energy?

French We have four initiatives: one is a broad media campaign to educate the public about oil and gas. Then we have a program for teachers and students, as well as a media campaign specifically about the importance of natural gas, and finally, a program we call The Citizen Partnership.

Investor What is this partnership?

French It focuses on building better community relations. We provide an Internet clearinghouse or link to factual information where people can go for answers. There will be interactive video added to our website, which is being developed by Schlumberger and should be ready by March. It will address leasing, drilling, safety issues, pipelines and the environment, among other topics.

There's finally a consensus in the industry that public perception affects the bottom line. There's no question that if you can change public attitudes toward the industry, you can change public policy.

GENE POWELL

Michael E. (Gene) Powell Jr. is editor of the Powell Barnett Shale Newsletter in Fort Worth. As such, he tracks everything in the play: rig count, leasing and production trends, regulatory challenges from municipalities, even poor media coverage. That attention to detail has led to coverage of other shale plays, including more than 200 proprietary reports.

Powell didn't start out as an editor and publisher. Both of his grandfathers and two uncles were oilmen. He did stints at a forerunner to ConocoPhillips and with famed independent Sid Richardson before becoming an independent and royalty owner himself. That evolved into consulting.

Powell is credited with discovering 10 oil and two gas fields. He is chairman and chief executive of Powell Royalty Inc.; president and chief executive officer of Powell & Co., an oil and gas consulting and research firm; and partner in Shale Ventures LLC, which has owned and published the weekly newsletter since 2003.

In 1983, he posed with his Rolls Royce in front of twin pumping units on one of his locations in Runnels County, Texas. "People saved my business card because that photo was on the back of it," he says.

His education includes Texas Christian University, 1956-1958, pre-law and geology; Baylor University, 1960-1963, more pre-law, business and geology; and the Massachusetts Institute of Technology (MIT), 1966, case study courses and corporate planning.

Oil and Gas Investor talked with Powell about his business and the Barnett.

Investor How did you first get into the newsletter business?

Powell When Powell Royalty picked up some leases in the Barnett in 2003, I started analyzing the area. We ran a considerable number of programs to get EURs (estimated ultimate recoveries) and peak-month production data. I found a real correlation between EURs and the peak-month recovery, which usually occurs in the second month of production. This works in the Barnett, but we don't have enough production history yet to determine if it works in other shales.

My consulting clients kept asking for this kind of information and I started e-mailing it to them, and through word of mouth it started getting around. Before too long, I made it into a newsletter and about a hundred people were getting it. Eventually we had about 4,000 people on our list.

Investor Do you think the Barnett rig count will ever recover from its 2009 lows?

Powell It peaked in September 2008 at 194, then



dropped to a low of 61 in September 2009, but in 2010 it's been running between 79 and 83. People are drilling now to hold leases.

Investor Do you think it is because they believe other shales are better?

Powell No, I do not. It depends on the price of gas.

Investor What about lease bonus trends?

Powell I think \$32,500 an acre, with a 28.5% royalty, was as high as it got. Now we're down to \$2,500 to \$3,000 an acre, sometimes \$5,000. I don't think in my lifetime we'll get back to the highs. That was pure competition for the best part of the Barnett.

Investor What's your take on whether these shales are economic?

Powell I don't think we're going to see the iron pick back up much until we see \$6.50 or \$7 gas for at least two months in a row. People need confidence that we have a use for this gas and not a surplus. If we don't start building more gas-fired power plants or get the manufacturing plants back up...we need more industrial demand.

Investor Can Barnett production get back to what it was?

Powell The peak was about 5.1 billion cubic feet (Bcf) per day, based on IHS data, but it was around 4.7 Bcf as of November. I don't think there's any doubt we can get it back to 5 billion a day—there are about 600 wells drilled but not yet completed. But, you've got to have more rigs running to offset the first-year decline.

Investor That's the big question—what is the decline?

Powell There are so many variables: the size of the primary proppant in fracs, the length between frac stages, the county you're in. Up until three years ago, it was widely accepted that the first-year decline was about 58% in Tarrant County. Companies that use 100 mesh sand as their primary proppant find they get much bigger flows, which gives them more production in the first six months. But that sand is so fine, when the fractures start closing, the proppant isn't big enough to keep them open, and so you get a bigger decline the first year.

Investor Did you ever think you'd see drilling under DFW Airport?

Powell No, never. Most of us in the industry thought it was too far east toward the Ouachita Front to be commercially productive. Chesapeake was right on that one. Last time we looked, those wells were averaging about 1.8 million a day in the peak month, which compares favorably with the average for Tarrant County of about 2.2 million per day in the peak month.

LEW WARD

Low natural gas prices have caused privately held Ward Petroleum Corp. to hit the pause button on deep-gas drilling in the geologically complex Anadarko Basin in western Oklahoma. But chairman Lew Ward isn't one to sit still for long in Enid, where he founded the company with his geologist wife, Myra, 47 years ago.

They met on a blind date at Oklahoma University, where he studied petroleum engineering and she majored in geology. After graduating in 1953, he went to Dallas and Delhi Gas, and she left for Tulsa to work at Oklahoma Natural Gas Co. They married in 1955 and in 1956, moved to Enid to join her oilman father, Carl Gungoll. In 1963, he and Myra formed L.O. Ward Operations, predecessor to the current company.

Ward Petroleum has drilled more than 800 wells, some to 23,000 feet. At one time, it had 300 employees and well-service, trucking and gas-marketing subsidiaries, but in the middle 1990s he sold these to focus on deep-gas exploration.

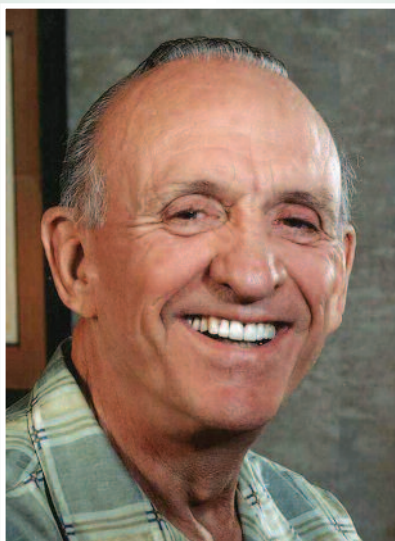
Ward has never had a layoff, and several employees have been with him 20 years or more. Three times, Inc. has named Ward Petroleum to its list of America's fastest-growing private companies.

Son Bill, a petroleum engineer graduate of the Colorado School of Mines, took over daily operations in 1996 and runs the company from Fort Collins, Colorado. Daughter Casidy also has a degree in petroleum engineering. And a grandson is currently researching biomass and wind opportunities.

Ward has been active in many national oil and gas organizations and numerous civic and charitable ventures in Enid. In 1996 he became chairman of the Independent Petroleum Association of America and in 1999 was honored with its Chief Roughneck Award. In 2009 he received the Trailblazer Award from OU, given to exceptional individuals in the energy industry. He is on the board of The Nature Conservancy, the National Petroleum Council, and the Institute of Nautical Archaeology, which is finding shipwrecks offshore Turkey. And he chairs the Cherokee Strip Regional Heritage Center, which honors the pioneers who, through hard work and hope, settled northwest Oklahoma.

Investor Lew, how did you start your business?

Ward Myra's dad offered us the opportunity to join him. I was doing engineering, but while working with him, I also learned how to buy and sell leases. We bought a lease one time that she had mapped, an outcrop of the Chester formation...no one wanted it until



someone else drilled a good offset well nearby. We decided to drill the lease ourselves on Myra's geology, and we made a well—that gave us our start.

Investor As chairman of Ward Petroleum, what is your role now?

Ward I'm there to ask the right questions (mostly about my great-grandchildren!) and get answers if anybody else has a question.

Investor What projects are you involved in?

Ward We have one rig drilling. Normally we're drilling three or four deep-gas wells at a time, but the decline in gas prices pretty much represents the decline in our drilling budget, since we drill on cash flow.

Investor Are you in the wash plays?

Ward Yes, we're looking in the Granite Wash, and the Tonkawa sand is responding well to horizontal drilling.

Investor You've always focused on gas, but what about oil plays?

Ward We're trying to find good oil prospects, but where we've typically been working is deep, so most of it is gas. We are casting a wistful eye on the Bakken...and we are buying some acreage in the Niobrara play in northern Colorado. Our guys there are listening to what is happening in that play. They are well-positioned and have the thrill of the hunt—and that is good hunting ground.

Even though there's a generation gap, there are a lot of 25-year-olds coming up, and all of them are bright.

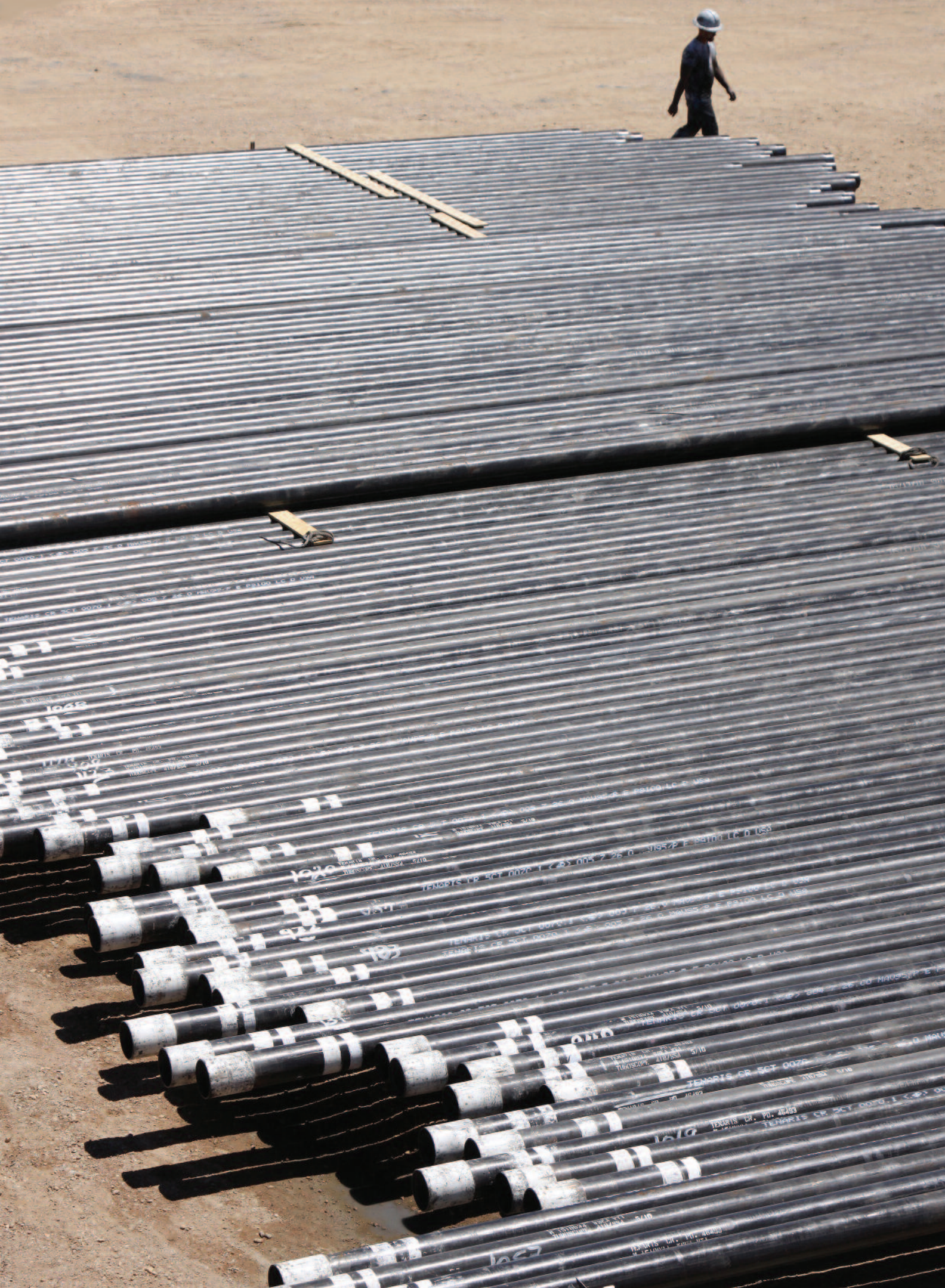
Investor What advice did you give your son and others starting in the oil business?

Ward One thing I emphasized is, there are many opportunities out there, and to turn stumbling blocks into stepping stones.

Investor Did you have to do that?

Ward Yes. One stumbling block we had in the 1980s was a real enigma: We had drilled several significant gas wells and had a large volume of gas...but we ran out of drilling partners because we couldn't sell the gas. We had to find a group that had a market and needed the gas, otherwise, our partners would not come in (we usually took 20% working interest in all that we did).

We found a group with a market and they furnished half the money, we furnished the gas and the other half of the money, and we jointly built a pipeline to the marketplace. We were able to sell not only our gas, but other companies' gas, too. That was the start of Ward Gas Marketing Co. It has morphed into a partnership with Frontier Gas Services.



Worker in a white hard hat and dark clothing walking in the background.

1068
1070
1072
1074
1076
1078
1080
1082
1084
1086
1088
1090
1092
1094
1096
1098
1100
1102
1104
1106
1108
1110
1112
1114
1116
1118
1120
1122
1124
1126
1128
1130
1132
1134
1136
1138
1140
1142
1144
1146
1148
1150
1152
1154
1156
1158
1160
1162
1164
1166
1168
1170
1172
1174
1176
1178
1180
1182
1184
1186
1188
1190
1192
1194
1196
1198
1200
1202
1204
1206
1208
1210
1212
1214
1216
1218
1220
1222
1224
1226
1228
1230
1232
1234
1236
1238
1240
1242
1244
1246
1248
1250
1252
1254
1256
1258
1260
1262
1264
1266
1268
1270
1272
1274
1276
1278
1280
1282
1284
1286
1288
1290
1292
1294
1296
1298
1300
1302
1304
1306
1308
1310
1312
1314
1316
1318
1320
1322
1324
1326
1328
1330
1332
1334
1336
1338
1340
1342
1344
1346
1348
1350
1352
1354
1356
1358
1360
1362
1364
1366
1368
1370
1372
1374
1376
1378
1380
1382
1384
1386
1388
1390
1392
1394
1396
1398
1400
1402
1404
1406
1408
1410
1412
1414
1416
1418
1420
1422
1424
1426
1428
1430
1432
1434
1436
1438
1440
1442
1444
1446
1448
1450
1452
1454
1456
1458
1460
1462
1464
1466
1468
1470
1472
1474
1476
1478
1480
1482
1484
1486
1488
1490
1492
1494
1496
1498
1500
1502
1504
1506
1508
1510
1512
1514
1516
1518
1520
1522
1524
1526
1528
1530
1532
1534
1536
1538
1540
1542
1544
1546
1548
1550
1552
1554
1556
1558
1560
1562
1564
1566
1568
1570
1572
1574
1576
1578
1580
1582
1584
1586
1588
1590
1592
1594
1596
1598
1600
1602
1604
1606
1608
1610
1612
1614
1616
1618
1620
1622
1624
1626
1628
1630
1632
1634
1636
1638
1640
1642
1644
1646
1648
1650
1652
1654
1656
1658
1660
1662
1664
1666
1668
1670
1672
1674
1676
1678
1680
1682
1684
1686
1688
1690
1692
1694
1696
1698
1700
1702
1704
1706
1708
1710
1712
1714
1716
1718
1720
1722
1724
1726
1728
1730
1732
1734
1736
1738
1740
1742
1744
1746
1748
1750
1752
1754
1756
1758
1760
1762
1764
1766
1768
1770
1772
1774
1776
1778
1780
1782
1784
1786
1788
1790
1792
1794
1796
1798
1800
1802
1804
1806
1808
1810
1812
1814
1816
1818
1820
1822
1824
1826
1828
1830
1832
1834
1836
1838
1840
1842
1844
1846
1848
1850
1852
1854
1856
1858
1860
1862
1864
1866
1868
1870
1872
1874
1876
1878
1880
1882
1884
1886
1888
1890
1892
1894
1896
1898
1900
1902
1904
1906
1908
1910
1912
1914
1916
1918
1920
1922
1924
1926
1928
1930
1932
1934
1936
1938
1940
1942
1944
1946
1948
1950
1952
1954
1956
1958
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000

GEORGE ALCORN

Houston independent George Alcorn Sr. grew up in the oil patch. His father, Charles, started a drilling company in 1935, and in 1938 moved to Houston, where George grew up.

Thanks to his father, Alcorn lived next door to a chairman of Exxon, and met the likes of Pierre Schlumberger, Erle Halliburton and other prominent industry executives.

“To me this industry is a family affair,” he says. “My grandfather and father were in the business. When I first went independent, my older brothers Chuck and Fred were also independents. My son, George Jr., and I worked together for many years, and my pup, my youngest, Avery, graduates in May from the University of Texas in geology.”

Alcorn Sr. graduated from UT in 1955 with a business degree, served in the U.S. Army and realized he wanted to be an independent, not a drilling contractor like his father. He attended the University of Houston to earn his geology degree in 1960, taking the first course ever offered on television by a U.S. university.



When you're an independent, you don't have to retire, and when you love it like I do, you don't want to.

“I worked for my father during the day and went to school nights and weekends. I had to take 100 extra hours because all the business courses I took didn't count for geology...but I'm glad I did it.”

Alcorn went independent in 1961, and put together deals in Texas, Louisiana, Arkansas and Mississippi. In 1973, his brother Chuck drilled the discovery well for Giddings Field in central Texas. Two years later, the three formed Alcorn Brothers.

Today he is president of Alcorn Exploration Inc. and with his partner, Richard Beard, continues to work the Gulf Coast region.

Active in Republican circles, Alcorn is a longtime friend of former President George H.W. Bush and other GOP luminaries. He is on the board of the National Petroleum Council, the Natural Gas Council and Linn Energy, and has been on EOG Resources Corp.'s board for 10 years. Because of the latter, Alcorn elected not to pursue shale plays, to avoid a conflict of interest.

He joined the Independent Petroleum Association of America in 1975 and was named chairman in 1993. Lone Star Steel gave him its prestigious Chief Roughneck Award in 1997. He is especially pleased to have been elected an All-American Wildcatter in 1995.

Investor Tell us about the time you met Howard Hughes.

Alcorn It was in 1950, the summer. Dad called to say we were going on a trip...we went out to what is now Hobby Airport, to see this World War II-era twin engine that had been converted, that was the fastest prop plane in the world at that time. A man came from the front of the plane and Dad said, “George, this is Howard Hughes.” We played three-handed gin rummy with him all the way to Casper, Wyoming. He was funny and engaging. He told us Hollywood stories about a recent movie he had made, *The Outlaw*, with Jane Russell. Some fun.

Investor What was your first deal like?

Alcorn It was a deep Tex Miss play in Matagorda County, drilled to around 16,000 feet. We put the acreage together and showed it to, among others, Conoco, but their world-class exploration manager turned it down...We finally drilled it ourselves and found 250 feet of sand. That was a good early lesson for me. Nobody knows it all.

Later, as Alcorn Brothers, we put together tens of thousands of acres in the Austin Chalk trend. That was our cornerstone. At one time we had offices in Giddings, New Orleans, Shreveport and Jackson, Mississippi. We had a lot of fun, did a lot of good, and some of those properties still produce after 35 years.

Investor Are they prospective for Eagle Ford?

Alcorn That would be nice. The Eagle Ford is going to be a huge deal; maybe the biggest field in the country, and with the added attraction of an oil leg.

Investor You've had a lot of adventures.

Alcorn In 1987 we drilled a well literally two hours before the lease expired. It's produced 40 Bcf so far. At one time it was the top gas well in the Gulf Coast, producing 10 million a day, and it's still producing. Wow.

Investor What else have you been doing lately?

Alcorn We are Gulf Coast guys. We just generated 14 prospects in Newton County, Texas, and we're leasing them now. We also have a package of 12 wells in two parishes in Louisiana.

The State Department recently had me host a delegation from Slovenia that was doing a documentary on the U.S. energy industry. They interviewed me and my partner, Richard Beard...and we had an interesting session with EOG's Mark Papa (chairman and chief executive officer). Lamar McKay (chairman of BP America) arranged a visit to BP's alternative-energy center here in Houston. Again, some fun.

Investor You see any reason to slow down?

Alcorn When you're an independent, you don't have to retire, and when you love it like I do, you don't want to. It keeps reminding me I am truly blessed. Are other industries like this? I doubt it.

CLAUDE COOKE

Dr. Claude E. Cooke Jr. is the unrecognized father of modern ceramic proppant, the tiny beads used in fracturing wells, including shale wells. He and two colleagues were named inventors on Exxon Production Research Co.'s 1978 patent for a "hydraulic fracturing method using sintered bauxite propping agent." He introduced the proppant to the oil and gas industry in a 1976 Society of Petroleum Engineers paper.

During the 1970s, he worked on hydraulic-fracturing-fluids technologies at Exxon's Houston research lab, and published many technical papers. He holds 28 patents, the most recent one granted in August 2009.

After 13 years of service, he retired this past year from the board of Carbo Ceramics Inc., the world's largest manufacturer of these proppants.

Cooke worked for ExxonMobil Corp. for 32 years, until he went into law in 1986. Today, he is a partner and patent attorney for Bursleson Cooke LLP, a Houston law firm he founded with partner Rick Bursleson in 2005. They recently open an office in Pittsburgh to serve clients in the Marcellus shale.

Cooke grew up in Arkansas, where his father worked as a mechanic, maintaining oil wells operated by Magnolia Oil Co., which later became Mobil Oil Corp. Years later, after earning a PhD in physics at the University of Texas, Cooke himself was employed by the former Humble Oil & Refining Co., now Exxon, which later merged with Mobil.

Oil and Gas Investor asked him about those early days of invention and proppant's role today.

Investor How did you get into the industry?

Cooke After I got out of grad school, I had a natural leaning toward the oil industry. I interviewed with several non-industry companies and three oil companies, but I knew I'd go into the oil industry. I got on with Humble in 1954. I was a scientist/engineer in their research lab and spent 32 years there, with the exception of one year when they sponsored me to do post-doctoral work at Columbia.

Investor But you are a lawyer, too.

Cooke When I turned 40 I decided research wasn't the optimum place to be as you age, so I decided to go to law school at the University of Houston. We had kids in high school at the time. I had always been interested in the law, even though I was always fascinated by science. I did not retire from Exxon right away. I did some litigation work after hours and continued working at Exxon on the research side. It was unusual that they let me do that.

Investor How did the invention of proppant come about?



Cooke Exxon needed a high-strength proppant, but they did not want to manufacture it. It was my idea to use ceramic proppant, which was made of bauxite ore. We went to the Carborundum Co. in Niagara Falls and asked them for 35,000 pounds of it to do a field test, and that blew their mind—they were only making smaller amounts used in grinding wheels.

Investor Where was the first field test?

Cooke On the King Ranch in South Texas, where Exxon had leased most of the ranch, or all of it. I actually still have the log of that job at home. The well was drilled to about 10,000 feet.

Investor Why did you need a new

kind of proppant?

Cooke In those days, people used sand, or glass beads, but the industry wanted to drill deeper and deeper, to 15,000 feet. The deeper you drill, the higher the temperature and pressure, and the proppants that industry was using didn't work. We found in our research that the glass beads lose their strength after you get to about 7,000 or 8,000 feet. The water in the reservoir makes them ineffective.

Investor How did that first test go?

Cooke Very well. We knew we had a successful new technology, but then, it was a matter of getting enough ceramic proppant. It took the industry years to build enough plants. Last year it produced about 2.5 billion pounds. Proppant is produced all over the world now, in Russia, China and Brazil.

The industry goes from bottleneck to bottleneck. High-strength proppant was very important for the economics of deep gas drilling, and now, the shales.

Investor How do you like being a lawyer as opposed to doing R&D?

Cooke I do patents, license agreements, various kinds of business arrangements, some litigation. I call it technology law. It really is fascinating. We never seem to get to the point where somebody doesn't have a new idea.

Investor What else does the industry need?

Cooke Industry is looking for a low-density, high-strength proppant material. A variety of ideas have been advanced but none is adequate yet. The other thing we'd like is a better method of determining where exactly the proppant goes in the formation after we've done the fracture treatment. We'd like to have what people are calling "smart proppant."

We're just getting the easy problems solved now. The Earth is very complex, and there's a whole new set of problems related to producing shale gas.

TED COLLINS

This past spring when Encore Acquisition Co. was sold to Denbury Resources Inc. for \$4.5 billion, you would think that left Encore board member and longtime Midland independent Ted Collins Jr. with not much left to do. Hardly.

For one thing, he is also on the board of Energy Transfer Partners LP, which is building Haynesville take-away capacity with its Tiger Pipeline through northern Louisiana.

Then too, on the day we spoke, he was in and out of a data room, aiming to sell some Wolfberry properties in the Permian Basin owned by Patriot Resources Partners LLC, where he is chairman and chief executive. At the same time, another partnership in which he owns an interest, Rubicon Oil & Gas LLC, was selling some New Mexico production. It is partnering with Concho Resources Inc. in the Abo play in Eddy County, New Mexico, as is Collins as an individual.

The son of the late C.O. (Ted) Collins, one of Fort Worth's pioneer oilmen, he left the University of Oklahoma in 1960 armed with a degree in geological engineering. It was 50 years ago this month that he settled in Midland. He started his career with Pan American Petroleum Corp., a forerunner of BP America. At the time it was the largest producer in New Mexico and second largest in West Texas.

By 1963, Collins had gone independent. Through the years he has started and sold numerous independent companies, invested in others started by friends, and has otherwise been involved in a dozen partnerships, owning leases, mineral interests or working interests.

Among other claims to fame, he was involved with the discovery well on the Rocky Mountain Overthrust in Summit County, Utah. It turned out to be 40-million-barrel Pineview Field. Still producing, it was drilled by American Quasar Petroleum Co., which he co-founded in 1969 with Fort Worth's Dick Lowe (now head of Four Sevens Energy LLC). Collins was executive vice president until 1982.

From 2000 to 2006, he was president of Collins & Ware Investments Co. of Midland; today he is a partner in Fort Worth's Collins & Young LLC. The latter partnered with Chief Oil and Gas early in the Barnett shale play.

In 2006, he received a lifetime achievement award from the American Association of Professional Landmen (AAPL), for his promotion of the value of land professionals. Last year Collins was inducted into the Permian Basin Petroleum Museum's Hall of Fame for his lifelong contributions to the West Texas oil patch. We caught up with him between data rooms.

Investor Ted, how did you first go independent?



Collins I sold a few drilling deals and then Robert E. Tucker and I formed Collins & Tucker to do deep gas drilling and leasing in the Delaware Basin in 1967. In 1969, we co-founded American Quasar with Dick Lowe, and Herb Ware and I ran the exploration arm out of Midland. At one time Quasar was one of the largest sponsors of public drilling partnerships. But then in 1982 when Reagan changed the tax laws, there were no more public drilling partnerships.

That's when I was asked to become president of HNG Oil Co. (part of Houston Natural Gas). That eventually became what is now EOG Resources.

When my contract was up in 1988, Forrest Hoglund came on board to take it public.

Investor Then what?

Collins We started Collins & Ware in January 1988 and built it up to 95 employees. We had nearly 1 Tcfe (trillion cubic feet equivalent) and operated about a thousand wells. But we sold it to Apache for about \$312 million in July 2000.

Investor You've done a lot in the shales.

Collins I sold Continental Resources their first Bakken acreage in Montana in 2002 or 2003. They took three-fourths interest in 19,000 acres we put together in Richland County, and we kept 25%. It was early in the Bakken play. We showed it to Harold Hamm, but he didn't want it, saying there were too few reserves and well costs were too high. But during a bird hunt in South Texas we met again and I asked him to reconsider. He flew out to Midland the next week, we met at the airport and shook hands on a deal. It turned out pretty well.

That's what I like about the business: You can shake hands with a guy and know it's a good deal.

Investor You're still in the Barnett too.

Collins Right. Collins & Young (partner George Young Jr.) still has some acreage there and we're in some wells with Devon because we had been partners with Chief Oil & Gas when it was bought by Devon. And, we were also part of that deal under the Alliance Airport, with Ross Perot (Hilcorp) and Chief. That production was sold to Quicksilver Resources Inc. for \$1.3 billion in August 2008.

Investor You're quite the deal-maker.

Collins Well, I'm a small operator but I'm in a lot of deals. I've been around for 50 years, so that's where it starts. People see me at the (Midland) Petroleum Club or on the street and they call me with new ideas. Every time you think the party's over in West Texas, there's a new play. This basin keeps surprising me; it always comes up with something that gives it new life. Its long-lived reserves stick with you. I'm lucky to do something this much fun. I love the activity.





CARROLL SUGGS

When Robert L. Suggs, founder of Petroleum Helicopters Inc. (now PHI Inc.), died suddenly of heart failure in 1989, Carroll W. Suggs found herself the majority owner and executor of PHI voting stock. Encountering inside-shareholder issues and a hostile take-over event as well as a major estate battle, she fought to preserve and grow the 40-year-old helicopter enterprise, and led the Lafayette, Louisiana-based company—the world’s largest civilian provider of rotorcraft services—for 11 years. She and her three children—Carroll (Squeaky), Robert and Frank (Ruffy)—sold all holdings on September 5, 2001.



Oil and Gas Investor visited Suggs in early July in New Orleans, the Suggs family hometown and where she keeps a St. Charles Avenue office, filled with model rotorcraft and photos, including one with Warren Buffett and several with the Royal Air Force’s aerobatic team, the Red Arrows, with whom she took a white-knuckle joyride in 1995. At home, she keeps a garden and entertains four granddaughters, ages 1, 5, 7 and 10, and a 4-year-old grandson.

Over rabbit fricassee and shrimp napoleon (a petite, but powerful, dish) at Restaurant Cuvee on Magazine Street, Suggs discussed her work since 2001 for the National Ocean Industries Association (NOIA), which she chaired from 2003-04 and of which she remains a member (“Or, what’s left of NOIA. This moratorium is killing industry.”). She is a trustee of The National WWII Museum (“Bob was a veteran.”) and serves on the boards for the Louisiana Cancer Research Consortium, New Orleans Morial Convention Center, LSU Health and Sciences Center Foundation, New Orleans Federal Alliance, Xavier University, Tulane-Energy Institute and Tulane University’s A.B. Freeman School of Business. She also serves on the LSU College of Engineering Dean’s Advisory Council and is the current president of the Louisiana chapter of the International Women’s Forum.

Investor You’re gardening, but grass isn’t growing under your feet.

Suggs I’m a survivor. In order to survive, you get things done against the odds. The cancer-research center is funded by the state’s tobacco tax. Cancer is significant in Louisiana. The LSU Health Sciences Center Hospital will hopefully open in 2014. What’s happening with hospitals in New Orleans is disturbing. We need a major biomedical center here that meets the needs of the people. They deserve that.

Investor What about the Gulf oil leak?

Suggs All aspects of it are frightening—economically, environmentally and ecologically. I worry about people who work in and along the Gulf and their future. I am very concerned with what’s going

on in Washington and how poorly they’re handling these very important issues. (Louisiana) Gov. (Bobby) Jindal is doing an excellent job, and the parish leaders have been great and tireless in their efforts.

Investor You remain fond of your early mentors, those you trusted for guidance when taking over PHI.

Suggs They are a special vitamin for me. Knowing I had their support gave me the courage many times to carry on. Dr. (James) McFarland at Tulane helped me further my knowledge of

business management. I certainly had many classes by fire: workforce, marketing, maintaining customer confidence. Mentors also included Dr. Norman Francis (president of Xavier University). He is committed to excellence and to nurturing leadership. And, Bob Rose (chairman of Transocean Ltd.), (the late) Pat Taylor (founder of Taylor Energy Co.) and Harry Stahel at Whitney Bank, who helped me with capital structure. Aviation is a highly capital-intensive business.

And certainly the people of PHI gave me constant support and encouragement. I always took fiduciary responsibility very seriously—besides my family, there were more than 2,000 PHI employees and their families depending on it.

Investor What was a mantra you relied on most?

Suggs Anybody who tells you that you have to make a decision right now does not have your best interests in mind. There are decisions you have to make right away, but the most important ones do not—and should not. It is true that it is best to “sleep on it”—an important short-term decision can have long-term consequences. You must ask, “Will this matter in three years?” I am fortunate to have had good timing in my life. I offered the business for sale in 2001 privately, and sold it shortly before the aviation industry entered the aftermath of 9/11.

Investor Were there temptations at times to dilute your voting shareholding to draw in new capital?

Suggs I was mother, CEO and controlling shareholder. I had to balance my decisions in all things without compromising one or another.

Investor Your passion for family extended to the PHI family.

Suggs The layoffs, the layoffs. I hated the layoffs. The business is so cyclical, and the Gulf Coast helicopter business is extremely marginal. If we made a profit of 10% in a year, that was remarkable. On several occasions, young men would come to me and say, “You know, I’m young and I don’t have a family yet. I can take a layoff instead of these other men.” I am so proud of the people of PHI, and I admire them still.

—Nissa Darbonne

HANK GRUY

When he was 35, H.J. Gruy started his consulting firm, H.J. Gruy and Associates, in Dallas. It was 1950. Now, some 60 years later as chairman emeritus, he comes into the company's Houston headquarters four mornings a week to check in, even though he retired from active engagement in the business about a decade ago. "I don't do anything," he says with a ready laugh. The fifth morning, he joins a current events discussion group where he lives.



But during the bulk of his career, Gruy was a busy man, traveling the world for clients to perform reserve estimates and write scientific papers.

He earned his bachelor's degree in petroleum engineering from Texas A&M University in 1937. He then joined Standard Oil Co. (Amoco) and later, Shell Oil Co. From 1945 to 1950, he worked for consulting firm DeGolyer and MacNaughton as a petroleum engineer and geologist, before going out on his own in 1950.

Gruy and Associates provides petroleum engineering, geological and geophysical expertise with an emphasis on reserve determination, economic forecasting and energy-investment analysis. The staff includes petroleum and chemical engineers, geologists, geophysicists and mathematicians. The firm has provided services on coalbed-methane opportunities, carbon sequestration and gas storage, and enhanced oil recovery.

Clients range from small E&Ps to majors, states, midstream firms, banks and other financial entities.

Gruy's resume includes many industry honors. He was awarded the DeGolyer Distinguished Service Medal by the Society of Petroleum Engineers in 1983, one of SPE's highest honors. He also received the Lifetime Achievement Award from the Independent Petroleum Association of America.

Among many other achievements, he was president of SPE and the Society of Petroleum Evaluation Engineers. He also was recognized for Outstanding Achievements in the Field of Engineering by the Texas Society of Professional Engineers. In 1988, he was inducted into the National Academy of Engineering, which he considers his highest honor.

Because he is a man with many stories to tell, Texas A&M filmed Gruy reminiscing recently, as part of its oral history archive of distinguished graduates. Gruy has repaid his alma mater as well, donating scholarship monies along the way. In December 2007, the Rae T. and H.J. Gruy Fountain was dedicated on campus. Eleven members of the Gruy family have attended A&M, including some cousins and most recently, his grandson, who graduated in 2005.

Investor How did you get to A&M?

Gruy I was a cowboy on my Uncle Joe's ranch in South Texas. He had 60,000 acres in Duvall and Jim Hogg counties. We had about 3,000 cows and they had to be rounded up every 28 days, so I was on horseback all the time. But one day my uncle asked me, "When are you going to leave and go to college?" I told him I wanted to, but I didn't have two dimes to rub together. So he said he'd pay if I'd go to A&M. I worked in the oilfields as a roustabout in the summers out in West Texas, so I chose petroleum engineering.

I first went to work for Standard Oil of Texas (Amoco) in South Texas and Louisiana.

Investor You worked a lot on the East Texas Field?

Gruy Yes, for Shell. Back then gas wasn't very important, there was no market for it. But after the Big Inch Pipeline was built, it became important. So I wrote a paper on how to estimate gas reserves, and I got a lot of letters from engineers thanking me.

Investor What advice do you give employees or young people coming into the business?

Gruy I just tell 'em to keep it straight and be honest. And, the government always likes to pick on the industry. You can't do anything about it but be prepared. I have never taught at A&M, but I have lectured there, about the history of mineral ownership.

Investor What kind of technical changes do you think are most remarkable?

Gruy You live with big changes every day and they don't seem so big when they are happening. These shales are very interesting. But some time ago I sold my properties in the Fort Worth Basin and didn't retain the minerals. Back then you couldn't get enough gas—you didn't have the hydrofracing we have now.

I think natural gas is a great resource. I wrote a technical paper on how you estimate gas reserves and at that time it was used as a textbook at some colleges. I've done reserve estimates everywhere from China and Russia to Alaska. Before they nationalized the oil industry I went to Venezuela and Colombia a lot.

Investor What was your biggest adventure?

Gruy Probably Argentina. I went there to estimate oil and gas reserves for a New York financial firm.

Investor Where was the most exotic place?

Gruy Alaska. The Eskimos in that village had just caught a whale, their first in several years, so they had a 24-hour celebration, the nalukatuk (blanket toss). They wanted all the foreign men to do it, but I wouldn't. A USGS man did, and he fell and broke his leg. We were there because the USGS had drilled a stratigraphic test and found natural gas, and they wanted to build a pipeline to Point Barrow, to replace fuel oil with gas. But the government wanted us to certify that there were enough significant gas reserves to warrant the pipeline.

BILL MARSHALL

For more than 80 years, geologist William S. Marshall's life has paralleled that of his family oil and gas company, Marshall & Winston Inc. His father, Samuel Sr., co-founded the company in 1928, the year before Bill was born.

In 1978, when the company celebrated its 50th anniversary and owned leases in 16 states, oil sold for less than \$9 a barrel—until the Iranian revolution pushed it to more than \$12, an astonishing price.

Today's robust oil prices have revived the Permian Basin, site of the firm's home base in Midland. Marshall & Winston participates in roughly 100 wells a year and is currently drilling the Abo play and the Avalon-Bone Spring, also referred to as the Leonard shale.

Originally a small royalty company, under Bill Marshall the E&P became a substantial independent that takes interests in many other companies' prospects, and generates many of its own, often holding 100%. The company discovered, among other finds, these Texas fields: the Blackard-Clinta complex in Borden County, the Lonesome Dove II in Concho County, and a significant stepout and enlargement of the South Francis Hill gas field in Edwards County.

Marshall & Winston expanded its reach over time and today produces not only in Texas and New Mexico, but in North Dakota, Montana, Wyoming, Alabama and Oklahoma as well. In January 2010, Marshall became chairman emeritus.

Born in Los Angeles in 1928, Marshall moved with his family to Roswell, New Mexico, in 1938 and graduated from the New Mexico Military Institute in 1947. He received a geology degree from Cornell University in 1951 and a master's in geology from Columbia University in 1954.

Then, it was time to go back to the Permian Basin. He was employed by Schermerhorn Oil Corp. in Hobbs, New Mexico, and Midland, from 1954 to 1956. But in 1958, at age 29, he joined his father's firm, Marshall & Winston, becoming president and chief executive officer in 1967 upon his father's death. Marshall served as president and chief executive officer for 32 years, until May 1999, when he was named chairman and CEO, positions he held until December 2009.

Long active in local organizations, Marshall served, at one time or another, as president of the boards of the Midland College Foundation, the Petroleum Club of Midland, and as a trustee of the American Association of Petroleum Geologists (AAPG) Foundation. He was also a founding director of Texas Commerce Bank, Midland. He was inducted into the Permian Basin Petroleum Museum Hall of Fame in April 2007.

A 2005 book, *Marshall & Winston: 75 Years in the Oil Industry*, described the history of the company. At that time it had interests in several hundred wells. Today, it has 12 new wells drilling.



Investor Do you pursue any shale gas?

Marshall We're not involved, because I mistakenly was too conservative about it. I thought the Barnett was going to be a fluke. But I do think natural gas is a very desirable fuel, and we're going to need more of it.

Investor What's more exciting now?

Marshall We are currently drilling our fifth well in the lower Abo play in New Mexico and are participating in the Avalon and Yeso plays in New Mexico. We have some pretty good-looking

acreage in New Mexico. It is a problem getting a rig. Next year we hope to drill our first well in the Colorado Niobrara—we have some acreage there.

But the most exciting oil play I've ever seen is the Bakken play in the Williston Basin.

Investor Why do you say that?

Marshall Those wells are just super. There may be thousands of them. Horizontal drilling and multi-stage fracs have made oil fields out of stuff that had been completely overlooked. The Permian Basin is also going to greatly benefit from the new drilling and completion technology.

Right now, we have 12 active locations that we get a morning report on. Three wells are in North Dakota, nine are in the Permian Basin, and 11 are going horizontal. Nowadays, if someone brings you a well proposal and it's not horizontal, you want to know why.

Investor You've worked the Williston Basin since the 1950s.

Marshall Yes, my wife Sue and I lived up there for two years and I myself spent five consecutive Christmas Eves up there. But we have always done well in North Dakota. We drilled our first well there in 1958, bringing in Portal Field, which grew to have 14 wells.

Investor Tell us about Lonesome Dove II Field.

Marshall We are waterflooding it now. It was brought to us in 1989 by a geologist named David Powers. His prospect was supposed to be a three-well structure, an anticline, but it turned out to be a 52-well, huge stratigraphic trap. That was the best thing we ever drilled. In this business, you better have two things—a little bit of courage, and some luck. You need some financing to be sure. Ours is almost always internally financed.

Investor What words of wisdom did your father leave with you?

Marshall The main thing I remember is, "You'll get another opportunity next month or in six months. So don't get carried away with your failures or your successes." Nowadays the temptation is to go lease the whole world and go overboard like there is no tomorrow, so my job is to keep the brakes on a little bit.

L. DECKER DAWSON

For folks in the seismic world, L. Decker Dawson could be called Mr. Geophysical. This Tulsa native started in the industry in 1941 when he was offered a job on a seismic crew after graduating from Oklahoma State University with a degree in civil engineering. At the time, the country was still in the Great Depression, and he was one of only three OSU engineering grads fortunate enough to get a job that year.



He soon found he was fascinated by the seismic industry and the search for oil and gas. So much so that, in 1952, he took the plunge and founded Dawson Geophysical Co., with one seismic crew. Today, Dawson Geophysical is the largest land seismic company in the continental U.S. and employs more than 1,000 people. With 12 crews fully deployed and more than 120,000 recording channels, Dawson Geophysical is operating in every major basin throughout the Lower 48.

Dawson served as president until being elected chairman of the board and chief executive officer in January 2001. In January 2006, he was reelected chairman, but stepped down as CEO.

He has always been active in industry groups. Dawson was president of the Society of Exploration Geophysicists in 1989-1990, received its Enterprise Award in 1997, and was awarded honorary membership in 2002. He was chairman of the board of the International Association of Geophysical Contractors in 1981 and is an honorary life member of that association. In Midland, he was inducted into the Permian Basin Petroleum Museum's Hall of Fame in 1997.

Oil and Gas Investor spoke with Dawson recently about the start-up of his business, life in Midland, and the changes in seismic technology.

Investor In 1941 you got your first job on a seismic crew.

Dawson Yes, I was an instant doodlebugger and I never turned back. I absolutely loved it. We worked mostly in Oklahoma and Texas. Then the war came and the Navy got me for awhile. My original employer was Magnolia Petroleum Co. (now part of ExxonMobil). After the war, in 1946 I got on with a new little seismic company in Tulsa called Republic Exploration Co. I started as a crew chief and later became a supervisor. We had crews scattered over Texas, Oklahoma, Louisiana and New Mexico.

On the first day of January 1950, they moved me to Midland. That was the best day of my life.

Investor Why is that?

Dawson I just loved it, and also, because I met my dear wife there. There was so much enthusiasm in Midland then and it was a real melting pot. People were moving there from all over, all my age. The

war had ended and people were just flocking to Midland because there was an oil boom going on. They made me a supervisor.

Investor And today the Permian Basin is booming again.

Dawson Yes. We have enjoyed all the booms and endured the busts along the way.

Investor Why did you go out on your own?

Dawson I got a call from a good client one day asking me if Republic could

add a crew for them, but Tulsa was so busy, they said they couldn't possibly. Then I asked the client if they'd consider using me, if I were to start my own crew. They said yes. It wasn't easy, and I had to do it in a hurry, but within 30 days we were out in the field shooting. We helped that client find a lot of oil, which didn't hurt us a bit.

Investor What were the challenges in starting up back then?

Dawson I knew geophysics but I had zero business experience. One of my friends was a CPA who helped me get set up, and my wife, who had book-keeping and office experience, was an extraordinary help. That gave me the freedom to devote my time to geophysics. Of course when I look back on it, it was pretty simple back then, compared to what we do now.

Investor Which has been the greater advance, the advent of 3-D, or digital technology?

Dawson Digital has made the biggest difference. We used to have these long paper seismic records and do the processing with paper and pencil, until the computer came along. We got into processing as quickly as we could. We have data-processing centers in Midland, Houston and Oklahoma City.

Investor And you follow the wildcatters.

Dawson We've come from using seismic for exploration all the way to development. We're in every basin now in the U.S., but we're landlubbers. We are up in the Bakken and Back East in the Marcellus, and lately we are in South Texas in the Eagle Ford shale.

Investor But do you do any spec shoots?

Dawson No, we've never done spec work, except for a person who is a speculator. We don't want to own our own data, as it seems to put us in competition with ourselves.

Investor What advice would you give young people?

Dawson The best advice I learned was in Sunday school. Just do things right and be honest and above-board. Don't cut corners. You have to love what you are doing, and I understand that's not easy for some folks. Luckily I got into something that fascinates me. I still come to the office every day. I love all these people and they tolerate me.

WALTER WILLIAMS

A cadet and petroleum engineering graduate of Texas A&M University, Class of 1949, Walter L. Williams has seen many changes in the oil and gas industry over the course of his career. His broad perspective comes from having been a roustabout; from running his own independent E&P firm, *Texoil Inc.*, and taking it public; and from being a consulting engineer to a commercial banker.



Today, he is dealing with the business of global natural gas flows as a board member of Houston-based *Cheniere Energy Inc.* and *Cheniere Energy Partners LP*. *Cheniere* imports—and may eventually export—liquefied natural gas (LNG) at the Sabine Pass LNG terminal in Cameron Parish, on the Texas-Louisiana border. Built by *Cheniere*, it began operation in 2008.

This is not the first time Williams has been involved in a major energy infrastructure project. The first was during the Korean War, when as a member of the U.S. Army Corps of Engineers, he served for about 18 months in France. There he worked to build a diesel and products pipeline to Germany.

Today, *Cheniere* is in the midst of a regulatory approval process before the Department of Energy and the Federal Energy Regulatory Commission to convert its Sabine Pass terminal facility for bi-directional service. It already imports, regasifies and stores international LNG cargoes, and can send them back out to U.S. and international markets. Sendout capacity is 4 billion cubic feet a day.

The new twist? It seeks approval to be the first U.S. terminal to liquefy domestic natural gas, exporting it as LNG. Construction could begin as early as 2012, with first exports estimated by 2015. It proposes to have liquefaction capacity of 7 million tonnes per annum. Non-binding MOUs have already been struck with Morgan Stanley Capital Group and ENN, a Chinese gas utility.

Williams also currently serves on the advisory council of the Dwight Look College of Engineering at A&M.

Investor What drew you to the oil and gas business?

Williams When I entered A&M, I knew I wanted to be some kind of engineer but didn't know which discipline I wanted to pursue. I had never been in an oil field but I noticed those people all had jobs, so I chose petroleum engineering. I've never regretted that choice.

When I graduated, I became an engineering trainee for an independent that's now long gone, American Republics. They sent me to Silsbee, Texas, near Beaumont, a producing field where I roughnecked for about six months. Later I was appointed field engineer, and then came to their Houston office to be a staff engineer.

Investor How did you transition to forming *Texoil*?

Williams My employer was sold to the Sinclair Oil Co.

in 1955 and I joined a small independent for about three years, until its financing ran out. I was laid off, so I became a consulting engineer for some banks.

Then, in 1963, I met Bill Hoehn from Memphis, an automobile dealer who invested in oil and gas. He had asked me to review some Louisiana drilling prospects...he later said he wanted to go into the business, so in 1964, we started *Texoil*, with him providing the seed money. I ran it for 32 years.

Investor What was your strategic focus?

Williams Almost entirely Louisiana. I think we drilled maybe one well in Texas. Drilling costs were higher there, but due to the lease rental situation, it was easier to get a lease and easier to sell a good prospect in Louisiana. We operated 90% of the prospects we sold. About two years after we started, Dan Smith joined us and he oversaw the prospect generation.

Investor Why did you sell it?

Williams We had built it up, had about 37 employees and took it public in 1994 on the Nasdaq. But every company reaches that point where you have to decide whether to merge it, go public or sell it. We chose to merge in 1996 with one of (Houston independent) Frank Lodzinski's companies, as a way for him to go public, and because Bill wanted to cash out.

Investor How does an oilman get into LNG?

Williams I had met Charif (Souki, *Cheniere* co-founder and chairman) when I was still at *Texoil*. When I resigned in 1996, when *Texoil* was finding a merger partner, he called me the very next day. He was buying a public shell and wanted me to join him as vice chairman. Our main thrust at first was exploration and we did a 3-D shoot in the transition zone in Cameron Parish—close to where the LNG terminal is now.

Investor How did an E&P company become a leading LNG operator?

Williams That was Charif's idea...based on projections that there would be natural gas shortages and price spikes in the U.S. He deserves a great deal of credit (for his foresight). It was a natural evolution.

Investor We have so much gas from shales, and LNG projects around the world. Don't you fear an LNG glut?

Williams If you look at the situation in England or Europe, the price of gas is quite high, and it's even higher in Asia. There is growing demand for gas all over the world. It's a process of getting supply to where the demand is. We can import gas in liquid form today, store it and export it. We've done it. Now we are working to add liquefaction technology to Sabine Pass.

Investor What advice stands the test of time?

Williams Attend all the industry functions and luncheons you can. This industry is all about contacts and your reputation.

LOU POWERS

Since Louis W. Powers sold his consulting firm in 1995, he has continued to do some consulting and speaking to financial groups and civic clubs. He also has served as vice chairman, chairman and historian of the Pioneer Oil Producers Society.

But his most intriguing project for the past six months has been the editing of his book about his 50-year-plus career. It weaves his international experiences with updated data, an assessment of today's geopolitical and industry trends, and how the Obama administration is responding. A wealth of knowledge and contacts worldwide (he loves using Skype) enable him to reflect on issues such as Saudi Arabia's productive oil capacity and how shale gas is affecting the world.

Powers is a graduate of two OSUs: Oklahoma State University in 1957 (at that time, known as Oklahoma A&M) and Ohio State University (a master's in 1958). Both degrees are in mechanical engineering.

He worked for Exxon for 19 years before starting his own business in 1979. He has worked in production research, reservoir engineering, operations management and consulting, including two years in Saudi Arabia as Saudi Aramco's chief petroleum engineer, on "loan" from Exxon.

In 1979, after leaving Exxon, he and partner J.K. Patterson formed Patterson, Powers and Associates Inc. In July 1984, he founded and became president of Powers Petroleum Consultants Inc., and began to write papers and reports about the petroleum industry. For one, on U.S. vulnerability to oil imports, he was honored by the IPAA in 1992. At that time, his report was sent to each congressman and senator. He also worked on the committee that wrote presidential candidate Ross Perot's energy plan in 1992. In 1994 he issued a prescient report titled, "Can America afford another war over oil?"

For the past 16 years he has been involved in a prison ministry at the Texas Department of Criminal Justice in Sugar Land, Texas; he also serves as a volunteer chaplain in a one-on-one mentoring program, and facilitates in a 12-week Bridges to Life program for victims and inmates.

Investor What decided you on oil and gas?

Powers Actually, it was two summers working in the aerospace industry, which was totally unsatisfactory. After I got my master's in mechanical engineering, I looked at other options, including the oil industry, although it was somewhat depressed in those days, and I joined Standard Oil of New Jersey Production Research (a forerunner of ExxonMobil).

Investor What did you do there?

Powers Research on new methods of oil recovery. My first job was working on a pilot test of steam injection in western Missouri and running lab experi-



ments on producing heavy oil, i.e., tar that was so viscous you could not pour it out of a bucket at room temperature.

Investor How do you think running a company would differ today vs. in 1979?

Powers The key to success then, as it is today, is to surround yourself with people smarter than you and help them grow. We always tried to hire the very best.

Investor What was it like working in Saudi Arabia?

Powers My family, all five of us, had a great two years living there, and my work was very challenging. When we arrived in 1977, the roads were crowded with huge trucks; drilling rigs were turning to the right. Aramco was forging ahead with a plan to accelerate Saudi reserve depletion at a rapid rate. I came back to America six weeks after I got there, with approval to triple Aramco's staff of petroleum engineers.

But a few months later, the Saudis took control of Aramco and a more realistic goal was laid out, i.e., 10 million barrels a day as the maximum rate. The oil minister, Sheik Yamani, was quoted as saying, "Some day our grandchildren will need the oil." I wrote in my diary that night, "Today, the world has changed."

Investor What do you think about peak oil?

Powers Saudi Arabia will not fall off its dunes, but America may drown in a sea of red tape. They are not about to go on a sharp decline in oil production. I'm not sure that many in the world understand the advancement in technology that Saudi Aramco has been able to apply to their giant reservoirs.

About 60% of their drilling is now horizontal or multilateral wells, and it is controlled remotely by engineers and geologists many miles away. They have remote sensors down hole that report data to headquarters hundreds of miles away. Their reservoir modeling is some of the most advanced in the world.

Nor do many understand their large resource base. A single field, Ghawar, had eight times more oil in place than the largest U.S. field, Prudhoe Bay.

Investor Tell us about your book.

Powers I've spent the past six months on it. It includes stories the industry can be proud of, and some they may not want to hear. I update projects I've been involved in and where they fit into today's energy mix.

Investor Does U.S. shale mania give the industry a false sense of security?

Powers It is a very large potential resource that our industry can be proud of. It will have great impact around the world and in the U.S. The key question is, at what price is it profitable to develop? At today's prices of \$4 to \$5 per thousand cubic feet, most U.S. shale basins are uneconomic, in my opinion. At \$8, shale is profitable in most basins.

JON BRUMLEY

There's no moss growing under Jon Brumley's feet. Among his passions—besides the oil and gas business—are advocating for U.S. education, ranching and sports. He has ridden on European bike tours and in the Hotter'N Hell 100 Texas bike race, and he loves to swim. He quit playing racquetball three years ago due to an Achilles tendon problem, yet he completed two sprint triathlons in 2010.



Brumley's also run a great race in the oil industry. Most recently, he was chairman of the general partner of Encore Energy Partners and chairman of Encore Acquisition Co. (EAC) since April 1998, when he started it with his son, Jonny. Encore was acquired in 2010 by Denbury Resources Inc. for \$4.5 billion.

Prior to creating these companies, Brumley was briefly chairman and chief executive officer of Mesa Petroleum (T. Boone Pickens' E&P company) until it merged in August 1997 with Parker & Parsley to form Pioneer Natural Resources Co. He served as chairman of Pioneer for two years until leaving to form Encore.

Before that, he co-founded and chaired Cross Timbers Oil Co., which became XTO Energy Inc., and before that, was president and CEO of Southland Royalty Co., which became Burlington Resources Corp.

Brumley received a business degree from the University of Texas in 1961 and an MBA from the University of Pennsylvania's Wharton School of Business. He and his wife Rebecca, also a UT alum, donated \$1 million to UT's Robert S. Strauss Center for International Security and Law to create the Jon Brumley Chair in Global Affairs. It funds programs that examine how to reconcile technological advances with security needs, particularly the world's struggle to use nuclear technology peacefully. The chair also supports examination of challenges created by fields such as genetics, telecommunications and nanotechnology.

The Brumleys met when they were appointed to the Texas State Board of Education as chair and vice chair from 1984 to 1988. There, they implemented "no pass-no play" rules and helped develop standardized tests every Texas child must take to graduate. Rebecca also runs a foundation that gives books to indigent children under the age of five and works with their parents to instill a love of reading.

Since the sale of the Encore entities, Brumley runs Bounty Investments and sits on the board of his son's new E&P, Enduro Resources.

Investor You've been an executive with several of the biggest independents. How did you get started?

Brumley After serving in the Army, I worked at Towers Perrin doing spreadsheets—this was long before computers! After a while I was looking for something else, and a UT fraternity brother's father, Gil Weaver,

the chairman of Southland Royalty Co., offered me a job. I started doing economic modeling and assessing risk.

Later on, Mesa tried to acquire us (but we fought it) and through that I met Boone Pickens, who offered me a job. When I talked to Mr. Weaver about it, he made me president of Southland.

Investor So from way back, you've been involved in M&A.

Brumley I was lucky and in the right place at the right time. At one time Southland was one of the largest independents...and it became part of Burlington Resources through merger. Then we started Cross Timbers, which eventually became XTO.

Investor What's your take on Exxon buying XTO?

Brumley It's exciting. I haven't been at XTO for 16 years so I can't take any credit, but they did a great job. That's a powerful management group—Bob Simpson, Palko, Hutton, Vennerberg, Baldwin—a great team that came early and stayed late.

Investor What's the new plan at Enduro?

Brumley Jonny started it and he has taken the same business plan: he buys long-life, quality reserves, either gas or oil, whichever is the best opportunity at the time. They give you flexibility. Whatever he has acquired needs reasonably little cash flow to keep production flat, so he can use roughly half the cash flow to pay down debt. It worked at Southland, XTO and Encore. It's easier to say than it is to do.

The hedging policy has a lot to do with it, too. Jonny has a lot of understanding of hedging theories.

Investor What is your hedging policy?

Brumley To hedge one-third of production with puts, one-third with swaps and then leave the other third open. I feel puts are significant. This plan always leaves you two-thirds covered to the downside and two-thirds open to the upside.

Investor What is your gas-price outlook?

Brumley I think the gas price is going to stay in a narrow band for a while and that's good. It's going to build up a huge amount of demand and I think the utilities are going to have to come to gas in the next five years. I'm very positive about natural gas, but I think you need a five-year outlook.

When we started Encore oil was \$12, and when we sold it, oil was \$70 or \$80. When we bought the Cedar Creek Anticline in North Dakota from Shell, oil was \$12 and our three-year forecast was \$20—and people thought we were aggressive. It was \$20 by the time we closed and I can't say we saw that coming.

Investor What is your secret?

Brumley Buying quality, long-life production that I can live with forever, reengineering fields, drilling additional wells or implementing a waterflood or tertiary project. Always have top-flight engineers. And, I've always chosen great partners; that's most important.

J.P. BRYAN

Houston's J.P. Bryan has assembled the largest private, museum-quality collection of Texana in existence: rifles, swords, rare books and papers documenting the Lone Star state's past. Today he is writing a book on that history.

But in the oil and gas business, the man is best known for collecting deals and growing companies—and growing people. At last count, he says, nearly 100 former employees have gone on to become chief executives or partners in other energy firms, several of which are public.

Bryan is the founder, chairman and chief executive of Torch Energy Advisors Inc., which since 1981 has managed more than \$10 billion and 8,000 wells, through partnerships and acquisitions. Investors have included IBM, GE Pension, the University of Chicago and many of the largest insurance companies in the U.S. and England. He is also CEO of Torch's E&P arm, Resaca Exploitation Inc., formed in 2006 as a limited partnership, but traded on the London AIM market since 2008. Permian Basin assets are the focus. The midstream assets are held in Quivira Partners LP, which manages 56 gas-gathering systems in five states.

Bryan was CEO and chairman of Gulf Canada Resources Ltd., which he was hired to raise the financing for to restructure and grow. He did, going from C\$650 million to C\$6.5 billion from 1995 to 1998. In 2001, it was sold to Conoco for \$4.3 billion, a year before ConocoPhillips was formed.

He majored in art history at the University of Texas and did post-grad work at the law school and at the Thunderbird School of International Studies. His first oilfield job was two summers as a roughneck in East Texas. Upon graduation, he spent 14 years first as a banker with J.P. Morgan in New York and then as an investment banker with Dominick & Dominick Inc. and E.F. Hutton. It was at Morgan that he was first introduced into the oil and gas finance world, which he came to love.

Other entities include Torch Renewable Energy LLC, with more than 12 wind-power projects in various stages of development in seven states. The newest member of the Torch family, formed in 2009, is Onsemble LLC, which is developing a proprietary wind-forecasting service.

Investor What was the best advice you ever received?

Bryan My mother told me when I was very young to serve only those things that serve your interests, not your self-interest. Help others or help something you love, but not to embellish your reputation. And you are never going to lead unless you first learn to serve others.

Investor What are some of the lessons from your energy career?



Bryan As a roughneck, I gained a lot of respect for the guys on the rigs. It is hard work, dangerous. They took a lot of pride in their work. I know it is meant to be perverse humor, but I am most uncomfortable when anybody that works in the oilfield is referred to as oilfield trash. It does not suit the people I worked with.

Even in the worst of times, you can make a return if you are a careful buyer of producing properties. You can also enhance value by taking parts of the whole and monetizing them. If you can find ways to remove drillbit risk from the value-creation proposition, you'll suc-

ceed.

I am 180 degrees the opposite of a wildcatter. Find something with more engineering risk than geological risk and you can deploy capital successfully. We always tried to buy producing properties and enhance them with new technology. I've found that more profitable than exploration.

If you're trying to build value and a significant oil and gas enterprise, focus on the longest-life reserves you can get. It is true that in this business, we all destroy a lot of capital. We all pursue the same opportunities, whether it's the Eagle Ford or the Bakken and soon wildly overpay for the asset. You just can't escape the basic reality of this business: you need to be the first in, or the very last in after the dust settles, so you can pick up what's left and cobble it together to create value.

Investor What is the art of deal-making?

Bryan To me, the art is those things outside the financial parameters. It is giving the seller something he believes to be of value that does not reduce your profit objectives. It certainly is not bidding the highest price, which requires no art or creativity.

Investor What other lessons do you have for energy deal-makers?

Bryan Get away from looking at internal rate of return. Try to buy things with a great ROI (return on investment), at least two times your investment. Don't take too much pride in being a tough negotiator; you likely won't end up doing many deals because the guy across the table is not likely to want to deal with you again. Don't establish artificial barriers against success with a list of what you won't do.

Always sit down face-to-face. There's a real temptation today, with e-mail and cell phones, not to. We have moved away from dealing eyeball-to-eyeball. In poker, you don't do that. You look at a player's face, the way he places his hands on the table, his body language. That can be essential information.

Always go out to the field. The worst deals I've made in my life were when I did not do it, without exception. Go out there and talk to the plant operator or the field pumper.

DICK LOWE

This year oilman and philanthropist Dick Lowe celebrates 60 years in the oil business. At present he is a founding partner of Four Sevens Oil Co. Ltd., Fort Worth.

Lowe graduated from Texas Christian University in 1951 with a geology degree, working his way through on a football scholarship for the Horned Frogs (winners of the 2011 Rose Bowl).

But Lowe says he became interested in oil and gas much earlier than his college years, when he was growing up in Wichita Falls, Texas. Every day in the summer, when he was 11, he rode his bicycle to the library to read every book he could get his hands on about the Civil War. One day the librarian, noticing this thirst for knowledge, showed him a directory of people living in the town. He decided to bike all over, to see all the biggest houses in Wichita Falls.

“I found out the majority of them were owned by people in the oil business. This was in 1939. So I told my dad I wanted to be an oilman, and asked him how to go about it. He said, ‘You have to go to college and become a geologist.’ Back then nothing ever happened unless a geologist had an idea first. That was just the way it was before these acquisitions we do today.”

Throughout his wildcatting career, Lowe has drilled in more than a dozen states, including a few rank-wildcat locations, such as Idaho and Georgia. Not that Lowe is adverse to acquisitions—and especially, divestitures. During the 1980s he went broke twice and had to restructure, once the victim of the junk-bond disasters of that era, and then, the demise of publicly funded drilling programs, thanks to federal tax reforms under Ronald Reagan.

But the 2000s have been much better. Three times since 2006 in the Barnett shale alone he has, through Four Sevens, sold assets for an aggregate of more than \$1.1 billion, to Chesapeake Energy Corp. and XTO Energy. Today, Four Sevens is hunting for the next great play, along with longtime partner Sinclair Oil Co. Leasing is under way but, of course, he cannot say where.

“I feel like the oil industry is in a golden age,” he says. “Everybody is drilling into source rock. That Wolfcamp play out in West Texas is going to be huge. This business has been a rollercoaster, but I wouldn’t trade it for anything. Looking for oil is a treasure hunt. It’s almost an engineer’s business now, and not a geologist’s, with these source-rock plays you just frac.”

Investor What was your first oil job, Dick?

Lowe I worked morning tour for Baroid as a mud logger, catching samples and looking for shows. I did that for nine months, and then was offered a job for an independent named Rankin & Pitcock. After nine months there, I decided—like an idiot—to go independent.



Investor Why decide on that?

Lowe I was sitting on wells for other people as a consultant, but I had no time to generate my own prospects. I wanted to work up my own deals and get them drilled. I raised money from doctors, dentists, lawyers—and I drilled 16 dry holes in a row! I was broke.

Investor Then what happened?

Lowe I went out to Roswell, New Mexico, where the Abo trend was hot. This was in the late '50s or early '60s. I got a farmout from Mobil that turned out to

be a good field. It became Milnesand Field in Roosevelt County, and we drilled 32 good wells in a row, so I became a minor millionaire. We sold it to Union Oil of Texas. Then Teddy Collins of Midland and I, and some others, formed American Quasar. I was president.

Investor That was in the days of public drilling programs to raise money.

Lowe We were exclusively a wildcat program. We raised about \$100 million—but we were better at raising money than we were at drilling. We did make some discoveries in West Texas, and we also discovered Pineview Field in Summit County, Utah. That was the first Overthrust field ever found in the U.S. It had 132 feet of show in it. That was a 30-million-barrel field.

Investor But some finds are not necessarily good.

Lowe In the Canadian Foothills, we found Grizzly Valley Field. It was a huge gas field but we needed a pipeline and we had to build roads. That was going to cost us \$60 million. Interest rates were 21% then; Jimmy Carter was president. We wanted to export the gas to California, but there we were with \$60 million in debt at 21%, and no cash flow.

We were about broke. Drexel Burnham Lambert came in to us with junk bonds to fund it...we got so far down we never could get back up, so we restructured and called the new company Wolverine Exploration.

Investor And that went broke too?

Lowe Yes, in the '80s, with the oil-price downturn. I found out the hard way—twice—the rules of the game. My wife Mary and I were down to \$3,000, no car, no credit cards and no income. That’s when a friend of mine, Hunter Enis, said, “Let’s go do something in Jack County (North Texas).” We started Four Sevens in 1990, drilling in the Bend Conglomerate with mezzanine finance.

I didn’t think the Barnett was economical at the time...but then I saw from the public records what the service companies were doing, with better fracs....

The thing that amazes me is that all these conventional rocks had a source rock, and now we can produce from them, too. It’s like the 1930s again!



ARLEN EDGAR

Midland petroleum engineer Arlen Edgar has been a fan of the Permian Basin for years, through the venerable basin's ups and downs. An independent for nearly 40 years, these days he mostly invests in drilling deals. Producing-property and royalty acquisitions, long a favorite strategy, have lately become too expensive, he says, thanks to the rush to black gold throughout the oil patch.

He loves the Permian, knows the geology of most of its fields, knows almost everybody in the basin, and knows who's dealing.

The only time he left was for a three-year stint in Brisbane, Australia, in the late 1960s, when he was working for Midland company Tipperary Corp.

Edgar graduated from Tarleton State University, a two-year school, and then transferred to the University of Texas, where he graduated in 1957 with a B.S. in petroleum engineering. His first job was with Pan American Petroleum Corp. in Odessa, later to become Amoco. From 1961 through 1973 he worked for several independents. Since 1973, he has been an independent consultant and investor in drilling deals.

His resume reads like a tour of the U.S. oil patch. In 1981, while serving as president of the Society of Petroleum Engineers, he traveled the world. In 1993, he received SPE's DeGolyer Medal for Distinguished Service. In 1986, he was president of the American Institute of Mining, Metallurgical and Petroleum Engineers; in 1992, president of SPEE (Society of Petroleum Evaluation Engineers). In 1996, he was president of SIPES (Society of Independent Professional Earth Scientists).

He is a trustee emeritus of the Abell-Hanger Foundation, a Midland philanthropy that sponsors science and technology lectures at the Permian Basin Petroleum Museum and Hall of Fame, among other activities. To honor his 16 years of service on the foundation's board, the latter named the series the Arlen Edgar Distinguished Lecture Series.

Investor Why the oil business?

Edgar I was always fascinated with the idea of getting something of value out of the ground, so I was destined for either mining or oil and gas. And, my colorful, sort of foul-mouthed uncle flew an airplane back then and was in the oil business. I was a great admirer of his.

Investor Yet, you took a pay cut on your very first oil industry job.

Edgar Yes, that's right. I had worked for Amoco for three summers during college, first as a field roustabout, then as a roustabout at a gas plant, and the third summer, as a relief pumper. But when I graduated and became a junior engineer for them in Odessa, I made less than when I was a pumper. That was quite a start to my career!

Investor How have buying production and investing in wells changed?



Edgar The Permian is in a frenzy now, but I don't see people going off the deep end like they did in the early 1980s. For a long time it was possible to negotiate a production deal with sellers, but now it's gotten too competitive. I haven't bought producing interests in three years.

But I still get in on drilling deals. If I buy production, the return is dictated by what the competition is paying. But there is unlimited upside if you buy into a drilling deal—if you are right.

Investor Are drilling deals changing?

Edgar They are, because of all the activity out here. It's been hard to get leases in the past two or three years, what with the Wolfberry, the Wolfork, the Wolfbone. For starters, most leases call for higher and higher royalties. It used to be an eighth interest, and now it's usually 25%. A quarter is almost standard. For another thing, there's the higher cost to drill and frac a well. A Wolfberry costs \$1.7- to \$2 million to drill and complete, versus a vertical Spraberry for a fraction of that. I'm happy now to be a non-operated working interest owner.

Investor Would you ever invest outside the Permian?

Edgar I have from time to time, but right now, no. I have plenty on my plate here, so I'll stay within about 150 miles of Midland. I find the morning reports for all those wells very stimulating.

But you cannot invest in a vacuum. This is all colored by my perceptions of what's happening in the worldwide oil industry, and if I think oil demand is sustainable and so on. My worldwide travels when I was president of SPE affect my thinking and help me decide.

Investor How do you evaluate deals?

Edgar I look for a three-year payout or less, and ultimate gross return on investment of at least two or better. I look for situations that could lead to more development wells. My philosophy is to get in a lot of deals with small interests and let the law of averages work for me. That creates more administrative work, but no one well can sink me.

Investor What was your best deal?

Edgar We bid on a package of royalty and mineral interests on 450 tracts in 14 states. We out-bid and left \$100,000 on the table, and people thought we were crazy. Then the Arab oil embargo hit and oil soared. Today that package still throws off every month about six times the monthly income when we bought it, and we've gotten our money back about 15 times.

Investor What was the best advice you ever got?

Edgar Offices have lights in them for a good reason—you can work nights and weekends, and that may pay off later on. And if you know you've done what's right, what is ethical, things will work out for you.

DAVID BOLE

This month, a tireless networker and business builder, David L. Bole, reaches a 50-year milestone in this business. Hardly a major oil industry event goes by without him making the rounds and shaking hands to develop business opportunities and strengthen ties.

Since 2007, he has been managing director at private-equity firm Quantum Energy Partners in Houston. There, his main duties include sourcing and due diligence for Quantum's potential investments.

This Oklahoma native's adventures have taken him to New York City, Pittsburgh, New Orleans and Houston.

Along the way, he has served the Independent Petroleum Association of America as a member of IPAA's board, as a regional director, as chair of the membership committee and the annual Wildcatters' Ball in Houston. He also founded the IPAA Business Development Committee. No wonder he received the IPAA Leadership Award in 2004.

For the Texas Alliance of Energy Producers, he chairs the host committee for the Texas Alliance Houston Wildcatters' events. Among other accomplishments, in 1997 he founded Randall & Dewey's Annual A&D Summit held in Houston.

Bole was raised in Bartlesville, where his chemical engineer father arrived in the 1920s' oil boom to join Cities Service Oil Co. Young Bole started in the oil patch at age 17 working on cable tool rigs in the summer.

After graduating from the University of Oklahoma in 1961 with a BBA in Petroleum Land Management, he joined Humble Oil in Oklahoma City as a field landman. He took a leave of absence to serve in the U.S. Army. Following his return to Humble, he worked in Ardmore, Oklahoma City, New Orleans and Houston.

He left Humble in 1968 to join Merrill Lynch, where he became national product manager for oil and gas investments in New York. Returning to Oklahoma City, he was co-founder and president of Edwards & Leach Oil Co., then chief financial officer for Alexander Energy. Later, he went to Pittsburgh and Equitable Resources Energy Co. as vice president, corporate development.

Back in Houston by 1996, he became a managing director of A&D advisory firm Randall & Dewey, now a part of Jefferies & Co. Prior to joining Quantum, he was president of SouthView Energy, a Quantum and Jefferies portfolio company.

He has served as a director of Huber Energy, Houston, and he is on the boards of Primary Natural Resources, Tulsa, and Chalker Energy, Houston; both are in Quantum's portfolio.



At OU, he was on the Sarkeys Energy Center board of directors and now serves on the advisory board for the Energy Management Program in the Price College of Business, where in May 2011 he received the Price College Distinguished Alumni Award.

Investor David, you've been a land man, an investment banker, an oil company CFO and president, and the head of business development for several entities.

Bole Yes; I was bitten by the oil bug—my love for the industry was instilled by

my father and his friends while growing up in Bartlesville. The common thread is top-flight people. I've been fortunate to have worked with some of the best talent in the industry, starting early with Bob Parker Sr. at Parker Drilling, and more recently with the founders of Randall & Dewey and Quantum.

Investor Which job was toughest?

Bole Having started out working on rigs, I learned early not to be afraid of hard work and challenges. I can't think of a job or situation where the opportunities were not greater than the challenges (I always see the glass as half full), especially when you work with people you like and trust, and share similar values.

Investor How has business development changed?

Bole The fundamentals haven't changed: you must understand and meet the needs of both the marketplace and your company. But today, with so much of the same information available to everyone on a real-time basis, it really falls back to your personal relationships. People still want to do business with people they know and trust.

Investor What's your advice for the younger generation entering the industry?

Bole Be patient. Study, learn, and respect the technical and financial disciplines in the oil and gas industry. My PLM degree at OU required classes in engineering, geology, finance and law. I would encourage all young people to study the multiple disciplines in our industry because it makes work a lot more rewarding when you're part of a team.

In my guest lectures at OU, I advise: "Follow your passion. The best career strategy is amazingly simple: work at what you love, and if you can't, then love the work you do."

Investor What's next for you?

Bole While I will be celebrating the 50th anniversary of my employment with Humble Oil on June 5, I'm still as focused as ever, and excited about working with Quantum. Having begun there as an investor in Chalker I & II, then as president of a portfolio company, and now a managing director of the firm, I will continue to follow my passion for business development for the benefit of family, friends and business colleagues—and me.

CHARLIE STEPHENSON

Charles C. Stephenson graduated from the University of Oklahoma in 1959 with a petroleum engineering degree, and set out to build E&P companies. His latest is Tulsa-based Premier Natural Resources LLC, founded in 2006. Its 20 employees pursue a traditional acquire-and-exploit business model that proved successful in his prior companies.

Premier formed a partnership in February 2010 with private-equity giant KKR to acquire even larger properties. The goal of KKR Natural Resources (KNR) is to acquire as much as \$1 billion of long-life assets per year, he says.

In May 2011 the partnership closed its third deal, a \$104-million Barnett package from Carrizo Oil & Gas Inc. This included 122.4 billion cubic feet equivalent of net proved reserves and 75 gross (58.5 net) wells.

Stephenson began his career with Amerada Petroleum Co. (now Hess) in 1960, working three and a half years in the little town of Tioga, North Dakota. Back then the Bakken was just a nuisance.

He worked for the company until 1970, when he joined Andover Oil Co. as vice president of operations. He became president in 1974. It was acquired by Kuwaiti-owned Santa Fe Minerals of Dallas in 1982.

The following year, he co-founded Vintage Petroleum Inc. with Joe Bob Hille. Under their leadership, Vintage grew to 750 employees and operations in the U.S., Argentina, Yemen and four other countries. It went public in 1990. In January 2006, Occidental Petroleum Inc. bought Vintage for \$4.3 billion in cash and stock, getting 437 million barrels of oil equivalent in proved reserves.

Stephenson serves on the boards of several smaller concerns, including AAON (since 1996); Regent Private Capital LLC, which he co-founded; and Houston-based venture capital firm Growth Capital Partners, which he also co-founded.

He and his wife have shared their success, donating about \$36 million to OU. They established the Charles and Peggy Stephenson Chair in Petroleum Engineering in 1994. He also is on the boards of visitors of OU's College of Engineering and the Mewbourne College of Earth and Energy. And he is a founder of Sarkey's Energy Center, a tower housing many of OU's energy and geophysical research units.

The couple funded construction of two other OU research facilities, the Stephenson Research and Technology Center and the Stephenson Life Sciences Research Center. In November 2010, they gave \$12 million to OU's Health Sciences Center, where a



seven-story cancer treatment facility opens this summer, named the Peggy and Charles Stephenson Oklahoma Cancer Center.

Investor If timing is everything, how has timing affected your career?

Stephenson After living in Tioga, Amerada transferred me to Victoria, in South Texas. It was in January and I left that very day, just when a big storm was coming in. That day I went through a 100-degree change in the temperature. But I learned a lot up there. It was the nucleus of what I needed to know later on.

Another example occurred many years later, when we took Vintage public in August 1990, on the very day that Saddam Hussein invaded

Kuwait. That helped just a little bit.

Investor What is the game plan for Premier?

Stephenson Chris Jacobsen, vice president of operations at Vintage, didn't want to move to California with Oxy, so I said I'd guarantee a bank line up to \$25 million and we'd continue to do the things we did at Vintage—acquire and exploit long-life properties. We were small enough to react quickly to opportunities. He is Premier's president and CEO. We had no backing from private equity at the time. Premier is not buying today, just exploiting our properties.

Investor How did the KKR partnership come about?

Stephenson We ran into them while we were both looking at a deal in Dallas. During the evaluation process we got acquainted, and then had some conversations over the next year on how to structure a deal with them, to allow us to look at much bigger deals. The partnership is separate from Premier and we've kept the properties separate.

Investor Do you buy in competitive auctions or one-on-one negotiations?

Stephenson We much prefer the latter. We've done two one-on-ones and one competitive bid. It's hard to find the one-on-ones. You've got to be so proactive and really step up to the plate to be competitive before the word gets out.

Investor Are you currently evaluating more deals?

Stephenson Absolutely. We have a lot on our plate so we need to be smart in which deals we evaluate. We think there's value in buying long-life, low-priced gas properties.

Investor What influences your bidding?

Stephenson A lot of things, but I always go back to the upside. We'd rather look for that and dig that out ourselves. This changes the discount rate we'll pay.

Investor What do you tell your summer interns?

Stephenson You have to find a vocation you can be passionate about. There's a lot going on that can excite and motivate students.

LOWELL GEORGIA

Next month our distinguished photo editor, Lowell Georgia, will retire after 30 years, having co-founded this magazine in 1981 with original publisher Donald Hart. He has shot 353 of 361 covers.

Born in Wisconsin, Georgia's high school was across the street from the Green Bay Press-Gazette. He learned there was a job opening there, which led to his working in the press room early on. Then, lightning struck: the paper needed a go-fer in the photography department. So while just a high school sophomore, Georgia was steered into photography, first, mixing chemicals for the pros, and soon thereafter, going with them as they shot games for the Green Bay Packers, among other happenings.

He worked evenings, weekends and summers at the paper through high school and college, attending St. Norbert's in DePere, nearby. Graduating with a degree in English in 1955, he joined the newspaper full-time, shooting as many as 20 assignments a day: traffic accidents, political campaigns, sports—"you name it." He won Wisconsin Photographer of the Year in 1958.

From 1960 to 1967, for the Denver Post, he shot candidates along the 1960 presidential campaign trail, JFK's inauguration and funeral, and Lyndon Johnson's inauguration. While at the Post, he also freelanced for National Geographic. In 1962, he was named National Press Photographer of the Year by the prestigious Columbia School of Journalism for his Post portfolio.

Soon, he was in Washington full-time for Geographic as a photo editor for the magazine and their special-publication book division.

His career with Investor gave the magazine its visual identity. It included trips to 30 or 40 countries (and probably 20 to New York City alone), yet he and wife Mary Kay raised six children as well. Ask Lowell about any of these adventures, and he always says: "I grabbed a few shots and it turned out very well."

Here, he reflects on some assignments for Investor.

Investor How did you transition from *National Geographic* to *Investor*?

Georgia I missed field work and Denver, so I had an opportunity to come back and work at King Resources, which was starting a magazine. That lasted less than a year, so thank goodness I still had freelance work at *Geographic*. For a dozen years, I shot over 100 assignments for them. Periodically I would lecture on photography at Colorado State University's journalism department and ...that's how I met Don Hart.

Investor The rest is history.



PHOTO BY JOHN CHRISTIANSEN

Georgia He called me with this idea to start an oil and gas magazine like *Geographic*. We structured it like a traditional oil deal, with Don, myself and others each taking an eighth.

Investor Were you ever in physical danger while on assignment?

Georgia I've had three light-plane "incidents" that were not the usual intent. I ground-looped while landing on the tundra

in the Arctic National Wildlife Refuge. We had landed and were bouncing along; the pilot hit the brakes and the plane flipped right up on its nose. Fuel was coming down the windshield and it was a few frantic seconds getting out of that seatbelt.

On another occasion, we landed on an ice-covered river, and the plane's skis went through the ice. It was three days until someone picked us up. I also went down while in a Coast Guard helicopter off Seattle, just after coming in off a shoot. All of a sudden, every light on the instrument panel went red. We landed in a marsh, just barely onshore.

Investor You've had some wild experiences abroad.

Georgia When you go overseas, your hosts usually give you a ceremonial dinner. When (exploration editor) Peggy Williams and I were in Kazakhstan, part of the dinner was a roasted sheep. The host offered me an eyeball! He said, "May you only see great things while you are here." It was about the size of a ping pong ball—but of course, you cannot deny your hosts. I tried chewing it, but I ended up basically swallowing it whole.

Investor And you had a weird experience in China.

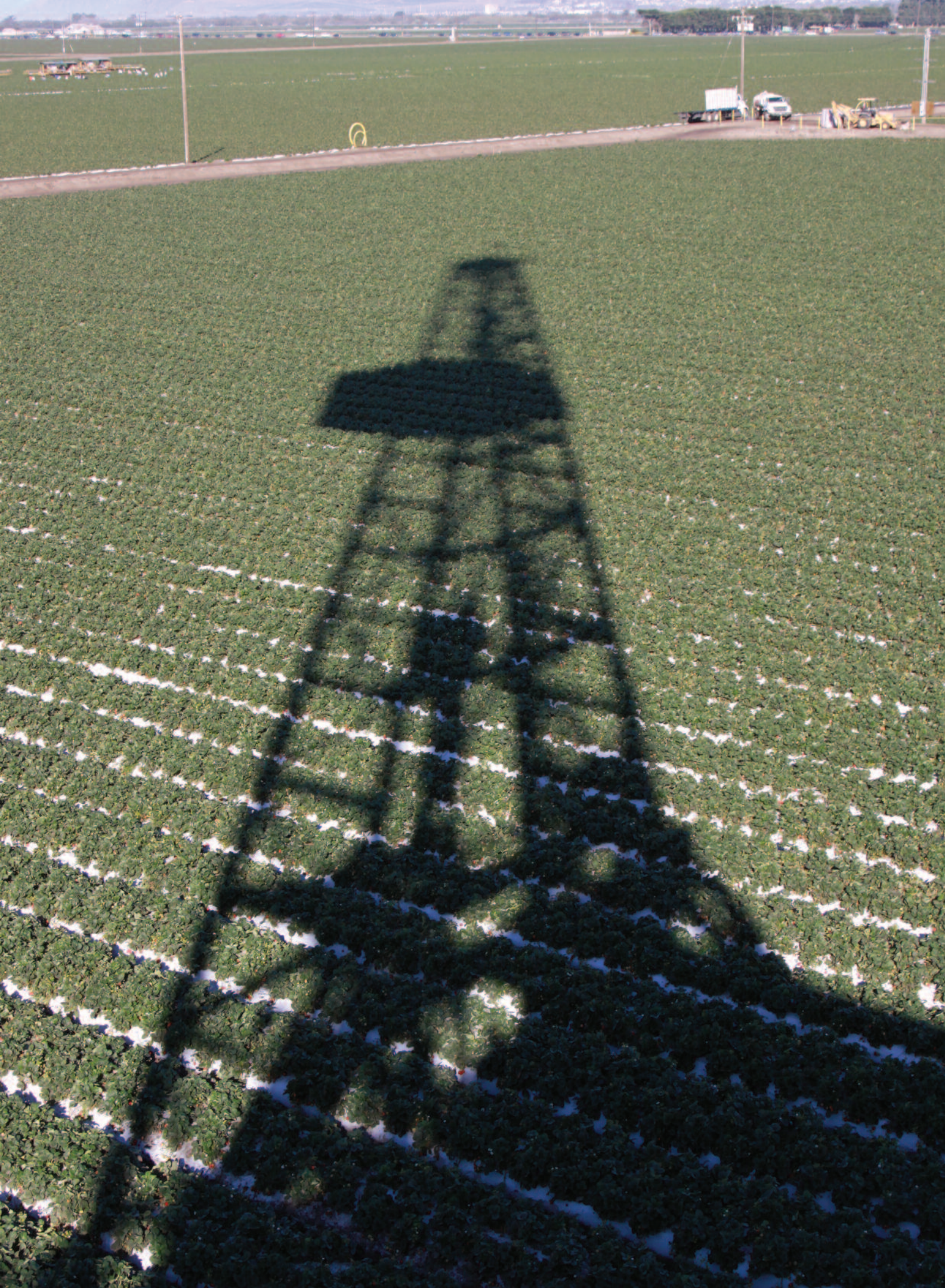
Georgia Senior editor Brian Toal and I were shooting near Bohai Bay, and wearing suits and dress shoes because we were doing interviews. A beautiful sunset was happening across an inlet, so our hosts stopped the car. I walked along the shoreline to get a better angle. It was really gooey, and we had to throw my shoes away.

When we got back to our five-star hotel in Beijing, a full string quartet was playing in the lobby, but I had to come in barefoot and with my pants rolled up. It was embarrassing!

Investor What do you think about digital?

Georgia Especially going overseas, it was always a worry, going through the x-ray at the airports: would the film be damaged or not? The security people always searched every part of my camera bag. We were fortunate, we never lost any film.

Digital is much more convenient. This past week on my Bakken shoot, I probably shot the equivalent of 33 rolls of film in five hours, and yet, we didn't have to stop once for me to reload, and in the process, maybe lose a great shot.



FRED C. JULANDER

Fred Julander has been tireless in advocating for natural gas—and he started doing it long before shale fever hit the headlines. The Denver independent has worked for years on behalf of his wildcatter E&P company, Julander Energy Co., which he founded in 1989; and on behalf of natural gas, especially in the Rocky Mountain states.

In the late 1980s, he read a newspaper article about natural gas vehicles and thought it was a splendid idea that ought to be embraced in a collaboration of utilities, gas producers and pipeline companies. So he formed an NGV company with them.

But Julander's biggest legacy is no doubt the annual Rocky Mountain Natural Gas Strategy Conference and Investment Forum (now the Rocky Mountain Energy Epicenter) held in Denver, for and with the Colorado Oil & Gas Association. He founded the conference in 1989 and remains the event chairman to this day.

Through the early 1990s especially, gas production in the Rockies was soaring from coalbed methane and tight gas in areas such as the Raton Basin and Jonah and Pinedale fields in Wyoming. Julander worked hard to bring those plays to the country's attention.

"These things burn in my heart," he says.

Julander is a graduate of the University of New Mexico. He also has a JD from the University of Iowa Law School and a 1984 MBA from the University of Denver, as well as having taken several geology and petroleum courses at the Colorado School of Mines.

His first job out of law school was as an editor for a short-lived, college-life magazine based in New York City. He returned to Denver and entered the oil business, which his father was in as an employee of Stanolind Oil & Gas (a forerunner to Amoco, then BP).

Julander worked for Texan John H. Hill in extending Colorado's famed Wattenberg Field in Weld County, by virtue of finding the first Shannon oil production there in 1972. Since founding his own company, he has focused on exploration in tight sands, coalbed methane and shales in Colorado and Wyoming. Many such prospects were farmed out to majors in the region.

In 2011 Julander is serving on the National Petroleum Council's committee on resource development and on the board of RPSEA (Research Partnership to Secure Energy for America), among other resource-focused committees and groups. He's been active in Denver civic affairs as well.

We caught up with Julander after the 23rd annual Rocky Mountain Energy Epicenter had concluded.

Investor Fred, you're such an advocate for Rocky Mountain gas production, does the advent of all the shale plays elsewhere threaten you?



Julander No, not at all. We've got so much gas here in the tight sands and coalbed methane that we didn't focus on shales much before now. But we'll bring on our own Haynesvilles, our own Marcellus. We'll have shale-gas giants here in the Rockies. Denver and Colorado have always been leaders in developing unconventional resources.

But, we are proud of what independents have done in other regions.

Investor You were on to natural gas vehicles a long time ago.

Julander The industry was all so balkanized then. Utilities were in their own world; pipelines were in their own world. Producers the same. Nobody was working together. So, I joined with Public Service Co. of Colorado (now Xcel Energy) and CIG (Colorado Interstate Gas Co., now part of El Paso), to form the Rockies' first natural gas vehicle company, Natural Fuels Corp. We later sold it to Clean Energy Fuels Corp., the public company owned by T. Boone Pickens.

Investor Is Julander itself still drilling?

Julander Oh yes, we still do some. We have three large-scale wildcat projects in shales and tight sands stacked up that we've been working on. We may drill a horizontal Sussex test this year, but it may slip into next year. We have the leases in hand. There is a lack of equipment for the small guys, but we'll get through it. This is a business big enough for everyone.

Wildcatting has its own pains and rewards. We've been successful so many times on the geology of a play but—like the rest of the industry in these unconventional-resource plays—less so with the engineering. It takes a while to get the engineering right.

Investor What is the opportunity?

Julander We'll still have lots of oil and gas in the ground years from now, when we finally have a silver bullet that fires. We're going to need a ton of energy. You can't have modern civilization for 8 billion people without it. That's huge.

We've provided heat and light for the country for 100 years and now, we are going to do it for the whole world. This industry should be proud and humble about it, as we have a great responsibility to do this safely.

Investor What do you see as the biggest challenges?

Julander To take this on our shoulders, to be big enough and conduct ourselves in the most noble fashion, to have a substantial impact on peoples' lives, with all the fuel we are going to produce for them—they need to trust us, like us. It will take transparency and dramatic environmental sensitivity. We've got to do these things in order to produce as much gas as we responsibly can on a worldwide basis.

The North American gas industry is going to lead the world for the next several decades in matters of energy and the environment.





CHARLEY MAXWELL

Charles T. Maxwell is Weeden & Co.'s senior energy analyst, focused on the biggest international companies and macro industry trends. Although nearing 80, the day we spoke he was nursing a charley horse he got playing tennis, still one of his greatest passions—aside from the oil industry, which he has covered since 1968.

Educated at Princeton University in politics and Arabic, he became intrigued by geology while working at the geology library as an undergrad. Next, he was a Marshall Scholar at Oxford, specializing in Middle East languages, literature and history. Upon his return to the U.S. in 1957, his love of the Middle East and geology naturally led him to accept an offer from Mobil Oil Corp., where he worked for 11 years in the U.S., Europe, the Middle East and Africa.

In 1968, he joined C.J. Lawrence as an oil analyst and was ranked by Institutional Investor as No.1 in his field in 1972, 1974, 1977 and from 1981-1986. In addition, since 1984 he has been an active member of an Oxford-based organization comprised of OPEC and oil industry executives from 30 countries. They meet twice a year to discuss macro energy trends.

Maxwell retired in 1997, but in 1999 he was lured back, joining Weeden in Greenwich, Connecticut. He also serves as a director at Chesapeake Energy Corp. and American DG Energy.

Investor What surprises you these days?

Maxwell I'm surprised when the government analyzes a problem, comes up with a solution and solves it. We have to make that happen a lot more often.

Investor What major changes have you seen since you've been following this industry?

Maxwell Three come to mind. First and foremost the political pressures have changed. Oil has always been political, but the means of production has steadily and gradually been taken over by the national oil companies. They now control 80% of the world's reserves, making for an entirely different industry dynamic. Second is the growing time lag between when a company decides on a project and first production. It's taking anywhere from five to eight years when it used to be two or three. This makes it difficult to analyze oil prices and volumes, and figure out when these things are going to produce.

Third, there are now questions about vertical integration. Tight integration was always the rule, but now it's not. In many cases the companies have had part of their production nationalized.

Investor What do you think about ConocoPhillips and Marathon changing their model?

Maxwell My guess is it isn't as important as it might have been a few years ago. Political realities make it so. Investors are getting used to it and managements are smarter. We'll find the industry continues to do



well, so I'm not too concerned. It will be difficult for downstreamers to secure enough crude and make more than an average return, which in America is, I think, about a 12% return on capital.

Investor What about the peak oil issue?

Maxwell That issue has really come into the business. You have only to look at the Chinese, who've been buying up reserves all over the world and paying what some say are high prices. It reflects their world view, that this must be

done now, before it's too late.

Investor What's the best advice you ever got?

Maxwell How to tie my shoes so they stay tied all day, whether I am playing tennis, running or at the office.

Seriously, a gentleman told me we've seen 150 years of rising oil production and Mother Nature has been generous. But it cannot last forever. There has to be a beginning, a middle and an end. That was Colin Campbell. I know this is controversial, but we keep getting more data points all the time. Oil-production growth is slowing. It began in the 1980s and is now down to about 2% a year as it continues to fall. We've seen the peak happen in the North Sea and Russia. Ten non-OPEC countries have peaked and one OPEC country, Indonesia, has. Next in OPEC will be Algeria and Libya, in about five years. I think the world peak should be sometime between 2015 and 2020 because of social, military, economic and political reasons, not necessarily all geology. Meanwhile, demand will increase. I can foresee \$180 oil by then.

The challenge is, how do we deal with an end to oil production growth? It will have to be fuel substitution, more efficiency, or we'll have to do without. Can we continue to grow the number of cars and trucks, our road system, our human mobility? Our factories? Can we make a better world for our children?

Investor But what about the Bakken and other revived oil plays?

Maxwell Every barrel we get is a blessing. Maybe the Bakken will get up to a million barrels a day. There are enough reserves in America to allow us to come back up a bit, but we'll never get back to the peak production we had in 1970.

Investor You are a big fan of the oil sands in Canada.

Maxwell My top picks are Suncor and Cenovus. It is not just a question of producing more oil, but they will be able to spread their costs among many more barrels. Traditional oil producers are going to struggle with costs over the next 10 or 20 years but the oil sands will have an advantage. And, you get a very high amount of reserves per \$100 of capitalization. For investors, it has to be a question of growth.

JOHN OLSON

First as an award-winning sell-side analyst for 35 years, then as a buy-side guru managing clients' money, John E. Olson has been watching energy equities for 44 years. "I was often wrong, but never in doubt," he jokes.

Most recently, he was managing up to \$160 million for 112 high-net-worth clients as head of Houston Energy Partners, an affiliate of SMH Capital in Houston. But last December, he closed the books and returned the funds to investors. Now semi-retired, he is investing for friends and family.

His skepticism and eagle eye remain. It was Olson who famously dared to question Enron Corp.'s financial wizardry when it was a market darling a decade ago, prompting Enron to demand that Merrill Lynch & Co. fire him. Merrill complied. He has the memo framed.

He began his career at Smith Barney & Co. in New York, and from his time there, he learned a cardinal rule: Always put the client first. If you didn't, you wouldn't have a client. This is something that modern Wall Street has forgotten, he says.

Investor John, put the current market turmoil in perspective for us.

Olson It's a good time to stop and look and listen. The markets are trading volatility, pure and simple. Both exchange-traded funds (ETFs) and high frequency "algo" traders (HFT) are everywhere. Fundamentals matter very little; and only if they can be correlated, say, like crude prices and stock prices. The IPO market is ice cold. People are scared and are leaving. Look at mutual fund trends. In the past four and a half years there have been some \$425 billion of net redemptions in equity funds, but \$1.25 trillion of net investing in bond funds. People are voting with their feet.

Investor You blame the extreme volatility on what?

Olson It's this overwhelming impact of both HFT and ETF players who are constantly flooding the system with trading algorithms designed to arbitrage the markets, often with the goal of making $\frac{1}{10}$ of a cent per share on huge volumes. This is gamesmanship, pure and simple.

Can you do 10,000 trades a second? I can't, which is why we decided to exit last January. There are usually 400 to 800 algos at work in the markets, and they can run a 24-hour global trading book. HFT and ETF "rebalancing" now make up about 65% of the daily volume across all 60 trading venues, with commodities, bonds and options thrown in. They can pile in or pile out, all around the world.

Investor Who are these guys?

Olson They range from the major trading shops, with hundreds of computers housed in big server motels around New York City, to someone in his spare bed-



room in New Jersey, with a \$5-million credit line, and who ends his trading day with flat positions. You can buy algo software off the shelf. You make your $\frac{1}{10}$ of a cent per share and move 10 million shares a day, and you clear \$1,000 per day. The big houses do vast multiples of this.

Investor It's quite a change.

Olson When I started years ago, the commission on trading a stock was 64 cents a share. Now an institutional trade is 1 or 2 cents and the high-frequency trades cost $\frac{4}{10}$ of a cent. Volumes have skyrocketed accordingly:

from 200 million shares daily to 6 billion shares daily. With this kind of volume, velocity and volatility, there is little room for old-fashioned investing based on good management, good growth, profitability and income. What matters today is how well crude prices correlate with stock prices. The practical result is that you get markets that go way up and then way down. There is nothing on the horizon to change things, either.

Investor You are skeptical of the shale hype.

Olson In these markets, I'm skeptical of anything that gets hyped. I am also concerned about aggressive E&P valuations that borrow everything from the future, from supposed 3P reserves, and in some cases "4P" calculations. People act as if all of this were a fait accompli. There's still an issue out there of whether these decline curves are hyperbolic or exponential. We don't really know how this is going to work out.

Investor But we hope it does.

Olson Another problem is that the oil patch has always been optimistic. It's in the DNA. But most managements have rarely protected their downside for their investors. There is almost no dividend support to speak of, and stock buybacks have had an unhappy history.

Indeed, the oil service industry has had a worse record here. In E&P, the cardinal rule is you can never have enough equity. But in markets like this, yield support would be excellent. While the S&P is down 7.5% this year, Oxy is down 20%, Apache is down 27%, Ultra is down 41%. This speaks volumes.

Investor Are these great buys?

Olson Mine is a buy-side view. These stocks are very strongly correlated with crude oil prices. If you think crude is going to go back to \$100, you'd want to own all of these. There are some very good values out there. Apache comes to mind immediately, because it has broken down so much.

We've been investing in good companies with strong dividend support. Well-run MLPs like Johnny Walker's EV Energy Partners, Plains All American and Buckeye Partners all come to mind. In the oil service arena we like Seadrill. With a 10% yield, it provides the best value proposition for this market.

CURTIS MEWBOURNE

In the oil and gas industry, many of the largest and most successful E&P companies prefer to fly under the radar and stick to their knitting, but their influence is still felt. Privately held Mewbourne Oil Co., based in Tyler, Texas, is one such company. It had 14 rigs drilling horizontally at press time, with about 300 employees and operations throughout the Permian and Anadarko basins. It has exploration offices in Midland, Amarillo and Oklahoma City, as well as several district offices. The well-respected company partners with, and has operated for, a who's who of public and private E&Ps.

Shreveport native Curtis W. Mewbourne founded the company in 1965 and is still chief executive officer, but the firm is now operated on a daily basis by a COO and a CFO, while ownership will be controlled by his three daughters and son-in-law. It is organized to last well through the third generation now coming up, he says. One grandson is studying engineering, and two more have similar plans.

The affable and enthusiastic Mewbourne could sell snow to an Eskimo. His great loves include family, the petroleum industry, bird dogs and quail hunting, and the University of Oklahoma. But it is his alma mater, OU, which reflects his involvement most dramatically. For years he has promoted the school's petroleum engineering department and sought to build a world-class facility, vowing to continue these efforts to make OU's geology and engineering schools the number one programs.

After all, the Mewbourne School of Petroleum and Geological Engineering awarded its first geological engineering degree in 1919 and its first petroleum engineering degree in 1927. The program has since graduated more petroleum engineers than any school in the world, about 5,000. The ConocoPhillips School of Geology and Geophysics granted its first petroleum geology degree in 1904 and also has over 5,000 graduates, more than any other program.

Today, both schools are included in the Mewbourne College of Earth & Energy, which is housed in a state-of-the-art, 15-story building—his name went on the building in May 2000. A statue of him, with one of his prized hunting dogs, greets visitors at the entrance.

In October, the Texas Oil & Gas Association presented Mewbourne with its 76th annual Distinguished Service Award, the Texas petroleum industry's highest honor, each year given to one independent and one major company executive, in this case to John Watson of Chevron.

We recently chatted with Mewbourne about trends in the oil and gas industry, advanced technology and the need for more petroleum research and education.



COURTESY PORTRAITS BY BRYAN

Investor Curtis, what prompted you to enter the oil and gas industry in the first place?

Mewbourne It wasn't money; I was looking for adventure and excitement. I ended up finding all three.

Investor Is Mewbourne Oil pursuing more oily or liquids plays today than ever before? How have technology breakthroughs affected your company?

Mewbourne Our revenues have gone from 80% gas to 70% oil in the past few years. This business is in the midst of a technological revolution. It is American technology. Horizontal drilling has made this a new industry.

It will never go back to where it was five years ago.

Investor Your company has weathered all the ups and downs we see in this business. What is your secret to staying the course for so many years? How do you prepare for the future?

Mewbourne One benefit has been that we're a private, family-owned company. I was able to make hard decisions that would be difficult for a public company. While a public company is worried about the next quarter, we are concerned about the next quarter of a century. You have to be very careful about using leverage. Most of the successful private companies, like Mewbourne Oil, have little or no debt. I always focused on the long-term instead of short-term gain. You must have the courage and the cash to invest when times are bad and the prices of oil and gas are low. To drill when drilling costs are the lowest is the holy grail of our business.

Investor You've attracted many prominent oil companies to do shale research alongside OU faculty and students at the Mewbourne School. How do you see the interplay between industry and academia unfolding?

Mewbourne It is imperative that we have cooperation between the industry and the universities, because the federal government is no help at all. The Mewbourne School at OU can protect a company's intellectual property while our faculty and grad students are still working with groups of operators and consortiums to advance technology for the industry. It seems to be going well, and the research is growing and the companies seem very pleased with the results.

Investor What is the future for young people in this industry?

Mewbourne I think there is opportunity beyond the imagination of today's young students. There are so many different ways to be a success in this business. They can look forward to a career that will be the envy of their peers. This is a great industry. If they work hard and learn, then good things will happen to them.

A VISIT WITH GEORGE MITCHELL

From shale development and gas demand to sustainability and beefing up the Texas university system's image, this Renaissance man has a lot on his mind.

INTERVIEW BY
LESLIE HAINES

Iconic Houston oilman and entrepreneur George P. Mitchell, at 91, is not resting on his laurels. Last December, he dedicated the George P. Mitchell Physics Building at Texas A&M University, his beloved alma mater, following a \$52-million donation to create a new physics institute that includes a second building. His goal is to elevate A&M's reputation and compete with Ivy League schools on the East and West coasts.

In June, son Todd went to Amsterdam to accept on his behalf a Lifetime Achievement Award from the Gas Technology Institute, presented during its conference.

"I believe that the United States should examine all forms of natural gas in order to ease our dependence on coal and foreign oil," said Mitchell upon receiving the award. "It is my hope that my efforts will aid the search for new and unconventional energy sources that can be used by my 23 grandchildren and four great-grandchildren."

Founder of Mitchell Energy & Development Corp., Mitchell was recognized for pioneering hydraulic fracturing and drilling technologies in the 1980s in the Fort Worth Basin, home of the Barnett shale. These advances have since enabled the shale-gas revolution that has swept the U.S., and soon, the rest of the world.

This Renaissance man is the perfect embodiment of the American Dream. Born in Galveston in 1919 of Greek immigrants, he busied tables to work his way through A&M. Today, perennially on Forbes' list of the wealthiest Americans, he is well known for his philanthropy in the Texas medical community and at A&M; for rejuvenating his hometown, Galveston, through historic preservation and economic development; and for his utopian vision in developing The Woodlands, a master-planned new town north



of Houston that he began in the early 1970s. Today it is home to more than 92,000 people.

A petroleum engineer with geology training from A&M, class of 1940, Mitchell believed natural gas could be extracted from shale when no one else did. "Not wanting his oil wells to go to waste in the event of flow shortages, Mitchell had his employees drill into an area known as the Barnett shale for hydrocarbons," said the GTI when giving him the award.

"Despite the cautioning of his engineers that the endeavor could prove futile, Mitchell gave the order to fracture the rock.

"The company invested in more than 30 wells to test different processes of hydraulic fracturing, with some wells' production barely even covering the cost of operation. Yet Mitchell remained steadfast, continuing to analyze test results that yielded the greatest return, and eventually completed the first successful instance of using hydraulic fracturing to drill into shale for natural gas.

"The results were staggering—many experts believe the Barnett shale may be the largest onshore natural gas field in the United States, containing more than an estimated 26 trillion cubic feet of natural gas."

Devon Energy Corp. acquired Mitchell Energy in 2002 for \$3.1 billion, adding horizontal drilling and other innovations to make fracture-stimulated wells produce even more from the Barnett shale. Mitchell is its largest shareholder and Todd represents him on the board. Today, Mitchell's legacy has grown to give Devon some 18 trillion cubic feet equivalent of net risked potential and more than 6,000 drilling locations in this shale alone.

Oil and Gas Investor met with Mitchell in his award-laden office in Houston.

Investor How do you react when people say you are the father of the shales?

Mitchell Well, I did so much work on it, now

they blame me for it. When I started in the '80s, the price of natural gas was \$10 or \$11 a thousand—in those days it was price-controlled by the government. Then they decontrolled it and prices fell all the way back to \$3.50 or \$4, so people blamed me for that. They said we found a big supply of gas. I said, that's too bad, but it's good for the country. Now, 25 years later, the price is still below \$4.

More gas demand is going to help lower oil demand too. It'll take over some of the things oil is used for now. There's enough gas in the U.S. for the next 50 or 100 years. We probably have 2 or 3 Tcf of extra gas above demand, so we need to get going on building demand. Four dollars is just about your cost of horizontal drilling, so we've got to build up demand, take away from oil, and see if we can't get the price back up, and help the oil-import situation.

Investor How do you think we should do that?

Mitchell There is a lot going on now. I think the Pickens Plan idea to get major trucking companies to use gas is a good idea. The gas supply committees and the Department of Energy ought to be working hard to use these shale-gas supplies wherever we can. Electric power generation with oil is very expensive. You could use more shale gas.

Investor Ever ride in a natural gas vehicle?

Mitchell Yes, I have. It works very well. There's no doubt about the technology. We just need refueling places along the super-highways.

Investor Why were you so persistent about the Barnett shale? Was it a hunch? Did you really need that gas?

Mitchell It became clear to me that the source of gas in the Fort Worth Basin and through the Bend Arch, and even in the Caddo area, was from the Barnett. It came up through the faults and fractures. You could see it on seismic. You could see it on small gas shows when we'd penetrate the Barnett shale on the way to the Ellenburger.

My geologists who examined the cores told me, "You're wasting your money, Mitchell, trying to make that work. There is no porosity." It took us from about 1989 to 1991 to experiment with several wells and different ways to frac them.

All the people who used to work for me, who told me we couldn't drill the Barnett shale, now they have their own companies drilling for shale. This is a real boom. The companies from Europe, from China, they're all coming over here.

Horizontal drilling has really made a big difference. In the Barnett alone Devon has enough acreage to drill 500 wells a year for 10 years.

Investor What do you think about Devon exiting the Gulf of Mexico?

Mitchell Before the blowout, Devon came to the conclusion to get out of the Gulf. They had made a discovery at the Kaskida block, but those are tough wells to drill. You have to drill an appraisal well to get SEC confirmation of the reserves. But what should have been a \$100-million well cost much more than that, and it scared the hell out of them. They had 21 good prospects

next to BP's blocks so they made a deal with BP. It also included Devon's assets offshore Brazil. I tried to get Devon to keep a 50% interest in those Gulf blocks, and let BP drill them, prove up the reserves. But Devon wants to concentrate on big shale projects. They've got plenty to do.

If this Macondo accident had happened to Devon, their stock probably would have gone to zero. It'd be worthless. You have to be big to withstand that.

BP can survive this, but it has a big fight on its hands, and so does Anadarko. If I was a younger man, I'd get right in the middle of it! It'd be better than being an oil and gas man!

Investor But seriously, if you were 40 again, which would you rather do: oil and gas, or community development like The Woodlands?

Mitchell My main background is oil and gas. I am a petroleum engineer and geologist.

Investor You are interested in many other things besides oil and gas.

Mitchell One of the most important things I'm still working on is sustainability. I learned about it in the '70s from Buckminster Fuller. He said if you can't make things work for 6 billion people now, how are you going to make them work when we have 9 billion by 2050? How do you make the world work for your grandchildren? All the nations have to realize what's going on and you have to get the young people involved.

Investor What are your ideas?

Mitchell You set up programs at all the universities. Stanford has done some action on it; the University of Texas has; Virginia has. But are they really working on it, or is it just a bunch of papers? What made me angry was that none of the Southwest Conference universities were working on sustainability.

Investor Why so interested in physics?

Mitchell In 2002, my friend Peter McIntyre, an A&M physicist, took me to California to meet Stephen Hawking (the widely known physicist who wrote *A Brief History of Time*). I told him I wanted to bring him to A&M and form collaborations between A&M and Cambridge University, where he worked. I wanted to help improve A&M's image, and we are working on joint arrangements. He's coming back to A&M next spring.

Investor You are still drilling wells?

Mitchell My son Todd has an E&P company. He bought some Marcellus acreage and drilled a few wells, then sold it and made some good money. Pennsylvania is a real eye-opener. I think half the state is going to be productive.

Investor What's the best advice you ever got?

Mitchell My old A&M professor told me if you go to work for a major company, you'll drive a nice Chevrolet, but if you go independent, you might end up with a Cadillac. Just turn loose. That was very good advice.

Investor And your advice to us today?

Mitchell If we really clean up the water, we can do the job of producing oil and gas safely. If we don't do the job right, then the environmentalists should give us hell. We can do it.

INDEX

40	George Alcorn	60	Fred Julander
11	Gene Ames	53	Dick Lowe
14	Thurmon Andress	47	Bill Marshall
31	Bill Barrett	63	Charley Maxwell
56	David Bole	7	Sandy McCormick
4	John Brock III	10	John Masters
51	Jon Brumley	26	Pete Matuszczak
52	J.P. Bryan	65	Curtis Mewbourne
41	Claude Cooke	66	George P. Mitchell
42	Ted Collins	64	John Olson
30	Kenneth Danneberg	3	L. Frank Pitts
48	L. Decker Dawson	37	Gene Powell
25	Marlan Downey	50	Lou Powers
55	Arlen Edgar	17	Frank Reinhardt
9	Joe Foster	6	Pete Stark
36	Pat French	57	Charlie Stephenson
58	Lowell Georgia	29	Leighton Steward
34	Evy Goyanes	45	Carroll Suggs
28	David Griffin	22	Gene Van Dyke
46	Hank Gruy	21	Bob Wagner
23	Robert Hefner III	12	Jim Wallace
15	Jim Henry	38	Lew Ward
18	Forrest Hoglund	24	Clayton Williams Jr.
2	A.V. Jones Jr.	49	Walter Williams
32	Jon Rex Jones		



THANK YOU TO OUR UNDERWRITERS

