Two reservoir engineers join Ryder Scott

Freddy Alvarado

Freddy Alvarado and **Carlos Alvarez** joined the Ryder Scott Houston office recently, bringing with them more than a half century of combined reservoir engineering experience at IOCs, NOCs and service companies.

Alvarado is a senior petroleum engineer with more than 20 years of diverse experience in reservoir engineering and economic analysis. His competencies include nodal analysis, integrated production modeling, material balance and production analysis and forecasting.

Most recently, Alvarado was a senior reservoir consultant with Miller and Lents Ltd. He evaluated reserves and analyzed the economics of U.S. and international projects. Alvarado also audited the reserves of deepwater projects in the Gulf of Mexico and provided technical advice to the operator. He implemented tools to evaluate production-sharing agreements.

Before that, Alvarado worked at Chevron Corp. starting in 2015, as a reserves advisor and intellectual property manager. He provided petroleum reserves quality assurance, oversaw reserves bookings in the Trinidad, Colombia, Brazil Venezuela, and Argentina units, and ensured reserves alignment with the corporate reserves group.

Alvarado was also a reserves coordinator at Chevron Saudi Arabia. He supervised reserves evaluations for carbonate and sandstone fields in Saudi Arabia and Kuwait, and ensured reserves compliance. He streamlined the reserves booking process to better coordinate efforts between the business unit and corporate reserves group. Alvarado also formed steamflood-booking strategies.

Before that, he was a chemical EOR project manager at Chevron Corp. starting in 2011. He designed chemical-enhanced oil recovery processes and was the subsurface lead for IOR/EOR evaluations of Latin American assets. His work involved calculating recovery factors, forecasting production and conducting numerical analysis for properties in South America.

Alvarado also worked at BP Plc. in Houston as a reservoir engineer for seven years beginning in 2004. He designed and delivered new technologies, including Bright Water in polymer flooding and Losal in EOR miscible gas and CO2 flooding.

Alvarado also conducted thermal/compositional simulations to design pilot options for several Venezuelan heavy oil fields in the Cerro Negro area of the Orinoco Belt.

He started his career at Pennsylvania State University, as a teaching assistant, and at Universidad Central de Venezuela, Caracas, as an instructor.

Alvarado has a BS degree in petroleum engineering from the Universidad Central de Venezuela, and MS and PhD degrees from Penn State.

Carlos Alvarez

Alvarez is a senior reservoir engineer with more than 30 years of diverse experience in that discipline. He specializes in EOR and IOR processes, and has taught numerous courses in this field.

Alvarez has evaluated and optimized oilfield development plans in Venezuela, Mexico, Norway and the U.S.

Before joining Ryder Scott, he worked at Gaffney, Cline & Assoc. for nine years as a principal advisor and project manager. Alvarez was a team lead for projects in the Gulf of Mexico, Mexico, Colombia, Trinidad, Suriname, offshore Brazil, Bolivia and Argentina.

He also evaluated the technical feasibility of production technologies for field development projects, including those in IOR/EOR/polymer, steam and CO_2 injection.

Before that, Alvarez was a senior reservoir engineer in Mexico at Baker Hughes Reservoir Development Services. He provided reservoir engineering analysis to support corporate exploration-and-development activities.

Alvarez was an IOR /EOR advisor for reservoir development at PDVSA Intevep in Venezuela during 2005 to 2010. He helped establish standard methodologies for pilot test design of thermal and chemical IOR methods in Venezuela oil fields. The project also included evaluation of the technical and economic feasibility of new technologies for improving oil production.

Alvarez coordinated multidisciplinary teams to evaluate oil fields in the Orinoco Oil Belt, Lake Maracaibo and north of Monagas in Venezuela. He collaborated in integrated reservoir studies for various oil fields. The components of those studies included analysis of potential implementation of IOR projects inside current development plans.

Alvarez also conducted analytical modeling and performance evaluations, including decline-curve analysis, material balance and other methods. He was also a technical project manager for the first pilot test of the WAG process in Lake Maracaibo.

Before that, Alvarez was the IOR advisor for reservoir development in PDVSA east and west divisions for heavy and extra heavy oil at Lake Maracaibo and the Orinoco Belt, starting in 1990. He was also an invited consultant for the Rogaland Research Group in Norway for a technology transfer program in IOR technologies between Venezuela and Norway.

Alvarez has a BS degree in mechanical engineering from the Universidad del Zulia in Venezuela and an MBA degree from the Universidad Catolica Andres Bello in Venezuela. He is a member of the European Association of Geoscientists and Engineers, SPEE and SPE.

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rate those standards into our regulatory regime," said Commissioner **Elad L. Roisman** at the SEC last June. "While this approach seems expedient and responsive to concerns about expertise, we have to acknowledge that this is not a 'plug and play' solution."

He compared a standard-setter in ESG to FASB which sets accounting guidelines for the SEC, and cited "a fear about the (FASB) standard-setter's independence and credibility being compromised by its funding sources and proximity to the industry it regulates."

Roisman acknowledged that the Sarbanes-Oxley Act mostly resolved those funding issues when it required companies to pay accounting support fees.

"Questions persist about FASB's independence from market participants," he said.

Oneness in nature – Cont. from page 3

financial funds, with monthly payouts, experience an organic exponential decrease. The Internet makes use of an exponential-decay model to decrease routing failures (flapping) on the World Wide Web.

Using radioactive decay as an example, the basic formula is as follows: N is the size of a population of radioactive atoms at a given time t, and dN is the population decrease in time dt. Rate of change is generated by the equation, $dN/dt = -\lambda N$, where λ is the decay constant.

The simple, yet powerful equation models decays and associated declines that change the world in big and small ways.

Carbon Capture, Utilization and Sequestration – Cont. from page 9

- In capture, the biggest opportunity to reduce costs per tonne of carbon is in the technology, which includes optimizing the solvent or configuration or using a technology that hasn't necessarily been proven at a commercial scale, but has been relatively successful on a pilot scale.

In addition to cost reduction opportunities, policy continues to increase the price of carbon to improve revenue. Policy instruments like carbon taxes and tax credits, e.g. 45Q, allow tax offset opportunities to maximize profits from a primary revenue stream, such as the sale of oil or power. Emission trading systems (ETS) allow companies to trade emission allowances, typically in units of tonnes of CO_2, which provide a revenue source directly generated from storing carbon. The number and magnitude of these policy instruments have steadily increased and are expected to increase more rapidly in the future.

In conclusion, the two main components to increase commerciality are reducing costs and increasing revenue. Innovative solutions are formed using appropriate contracting and commercial models generated via a deep comprehension of CCUS value chain components, technology, designs, project configurations and risks and coupling them with carbon-credit incentives.

Ryder Scott is focused on technologies for capture, compression and transportation. This is useful to clients that want to understand a new technology marketed by a startup and how to contextualize that in a larger CCUS market. The firm's geologists, geophysicists and reservoir engineers are highly competent when assessing formations and utilizing carbon for EOR or long-term storage. Ryder Scott monetization strategies focus on incremental oil recovery from EOR, tax credits and emission-allowance benefits from long-term storage. Ryder Scott also offers verification and validation of emissions to help navigate the complex regulatory standards in reporting.

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