

ROBERT SCHAAF

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Petroleum and Drilling Engineering Expert

PROFESSIONAL EXPERIENCE

Consultant / Expert Witness

2014-Present

- Expert witness for over 90 oil/gas drilling & operation cases including patent litigation
- Instructor for industry classes on oil and gas drilling and operations
- Development/implementation of regulations for oil/gas/geothermal wells in California for the Division of Oil, Gas, and Geothermal Resources
- Performed the reservoir and economic analysis of property acquisitions

Occidental Petroleum

2011-2014

Senior Project Manager, Los Angeles Basin

- Project manager for the re-development of the Dominguez Hills Oil Field
- Designed and led the refurbishment of the Platform Emmy drilling rig
- Led the development of new wells and workovers of existing wells
- Supervised the new well installations of both onshore and offshore wells

Aera Energy, LLC

2005-2011

Project Manager, Los Angeles Basin

- Managed all engineering and implementation aspects for new projects
- Delivered 30+ projects annually on-time and on-budget
- Oversaw the drilling of new onshore and offshore wells

Chevron

1979-2004

Engineering and Drilling Manager, Congo

- In charge of all engineering, drilling, and construction functions
- Supervised drilling and completion program for all new wells
- Implemented multi-stage acid jobs and hydraulic fracturing projects that optimized production from multiple reservoir zones

Sr. Technical Consultant, Kuwait

- In charge of the \$1.5B Kuwait's Burgan effluent water project development
- Developed new well completion and stimulation program for new water injection wells that included hydraulic fracture stimulations in multiple zones
- Led team to review, design, procure and install new artificial lift equipment

Chief Engineer, Congo

- Ran Chevron Oil Congo's engineering department that included reservoir/production/drilling engineering, budgeting/planning, and facilities design
- Designed and implemented drilling program in the Congo that reduced per well drilling costs by 25%
- Oversaw all well completions and stimulation work that included multi-stage hydraulic fracturing of horizontal wells

Planning Manager, Southern Africa Business Unit

- Managed business unit's \$500 MM annual capital budget that adequately balanced short-term cash requirements with long-term earnings improvement
- Developed unique scheme to secure project funds for under-financed partner.
- Assembled innovative financing technique to move forward internal projects when capital was non-existent
- Performed the economic analysis for various offshore Angola concessions

Sr. Staff Engineer, Angola

- Coordinated the planning of the \$450 MM North Nemba offshore oil rig that set new standards for the interaction of multi-disciplined teams
- Led the development and implementation of the \$38 MM Northeast Numbi offshore oil rig that was on budget and put on line in 50% of the average time
- In charge of well completions and stimulation work that included multi-stage acid stimulations, gravel packs, and hydraulic fracturing
- Developed the reservoir simulation model that led to a new water injection strategy in the Vermelha reservoir of the Numbi Field. The realignment stabilized the reservoir pressure & reduced the oil decline from over 30% to fewer than 10%.

Chief Engineer, Zaire

- In charge of all reservoir/production/drilling engineering for Zaire Gulf Oil
- Developed new exploitation strategy that added 5.5 MM barrels of reserves to the Mibale field
- Applied horizontal drilling and multi-stage fracturing to develop the Libwa Field

Area Engineer, Los Angeles Basin

- Led the 10 production engineers overseeing Chevron's fields
- Led operations review that reduced annual costs by over \$1,000,000 at the Whittier and Huntington Beach fields
- Maintained a production decline of less than 6% at the Yorba Linda steam project by careful monitoring of reservoir energy and temperature
- Increased production by expanding water injection to reservoirs that were previously thought to be unsuitable for secondary recovery
- Led the effort to sell various small California leases. Obtained almost twice the anticipated transaction price by utilizing a coordinated marketing effort focusing on potential value of under-exploited resources

Production Engineer, Los Angeles Basin

- Increased oil production 68% in the Montebello Field (LA Basin) waterflood by identifying unseen fault blocks and the realignment of water injection patterns
- Developed multi-stage stimulation projects using both mechanical and chemical diverters at Montebello that raised oil production of various wells from under 10 BPD to 20-80 BPD
- Expanded pumping unit system to increase and optimize production

Lead Engineer, Los Angeles Basin

- Led team of 4 engineers on field operations including planning/supervising rig operations, new facilities installations, and production optimization
- Supervised well completions including perforating, acid stimulations, and multi-stage hydraulic fracturing
- Re-established economic viability to the aging Beverly Hills Field by optimizing hydraulic lift system at three drill sites

Drilling Engineer, Bakersfield

- Supervised drilling rigs for ongoing development program
- Designed, assembled, and coordinated drilling programs for a wide variety of development and exploration wells
- Oversaw well completions that included acid jobs and fracturing jobs

Reservoir Engineer, Bakersfield

- Designed and implemented deep cyclic steam project in the Fruitvale Field to recover an additional 10% of oil in place
- Implement well stimulus programs (acidizing and hydraulic fractures) for multi-layer reservoirs in the Fruitvale and Lost Hills Fields
- Significantly increased gas production from the West Grimes (Sacramento Valley) Field by discovering and exploiting bypassed gas zones

EDUCATION

Bachelor of Science, Chemical Engineering, University of Southern California

Graduate Business Classes, California State College Bakersfield

- Project Management Professional (Certified by Project Mgmt. Institute)
- Six Sigma Black Belt
- Certified SCRUM Project Manager
- Chairman LA Basin Society of Petroleum Engineers (SPE)
- SPE Project, Facilities, and Construction Award – 2019
- SPE Service Award - 2019
- Received R&A Award for the development of a company Toastmaster Club
- Outstanding Engineering Merit Award 2015 – Orange County Engineering Council

PAPERS

“Platform Emmy Deck Extension Project” presented at the Prevention First 2014 Symposium – October 2014

“Engineered Severe Service Valve Solution” presented at the Emerson Global Users Exchange – September 2010

“Advanced Wireless Application for Critical Service Valves” presented at the Emerson Global Users Exchange – September 2010

“Alternative Economic Criteria for Superior Project Analysis” presented at the SPE Middle East Oil Show in Bahrain – June 2003

“Stimulation of a Producing Horizontal Well Using Enzymes that Generate Acid In-Situ Case History” presented at the SPE European Formation Damage Conference held in The Hague, The Netherlands – May 2001

“An Innovative Technique of Obtaining Project Financing for the Equity Share of a Developing Country’s National Oil Company” presented at the SPE Annual Technical Conference in New Orleans, Louisiana – September 1998 and published in the Journal of Petroleum Technology – January 1999

“Calculated Risk Taking for Fast-Track Development” presented at the Offshore West Africa conference in Accra, Ghana – November 1997

“Adapting a Reservoir-Management Strategy to Changing Reservoir Conditions” presented at the SPE Annual Technical Conference in San Antonio, Texas – Oct. 1997 and published in the Journal of Petroleum Technology – December 1997

“Changing Reservoir Management Strategy in the Numbi Field” presented at the Offshore West Africa conference in Libreville, Gabon – November 1996

DEPOSITIONS AND TESTIMONY

Date: January 2024

Case: K. Petroleum, Inc. v. Larry Mills, United States District Court for the Eastern District of Kentucky, London Division. Civil Action No. 6.22-cv-00116-CHB-HAL.- . Deposition.

Date: October 2023

Case: Berkeley National Insurance v. XTO v. Commerce and Industry Insurance Co., Torus National Insurance Co. N/K/A Starstone National Insurance Co., and Seneca Speciality Insurance Co., United States District Court for the District of North Dakota Western District. Civil Action No. 1:18-cv-00195. Deposition.

Date: August 2023

Case: Rafael Paredes v. Sunbelt Rentals, Inc., State of South Carolina, County of Greenville, Court of Common Pleas. Case No. 2022-CP-23- . Deposition.

Date: January 2023

Case: Synergetic Oil Tools, Inc. v. Relevant Holdings LLC, Ad Hoc Arbitration Trial. Trial Testimony.

Date: August 2022

Case: Sharla Whipple et al v. Phillips and Sons Trucking, LLC, et al, District Court of Canadian County, State of Oklahoma, Case No. CJ-2018-510. Deposition.

Date: October 2021 – September 2022

Case: Halliburton Energy Services, Inc. v. US Well Services LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: IPR 2021-01036 for Patent No. 9,611,728, IPR 2021-01037 for Patent No. 9,745,840, IPR 2021-01035 for Patent No. 9,970,278, IPR 2021-01034 for Patent No. 10,337,308. Declarations and Depositions.

Date: September 2021

Case: Fluid Energy Group LTD., v. Green Products and Technologies, LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: IPR 2021-00357 for Patent No. 7,938,912. Declaration.

Date: June 2021

Case: Helmerich & Payne International Drilling Co., Helmerich & Payne Technologies, LLC, and Motive Drilling Technologies, Inc., v. Nabors Drilling Technologies USA, Inc., U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: IPR 2021-01018 for Patent No. 7,802,634, IPR 2021-01043 for Patent No. 10,672,154, IPR 2021-01044 for Patent No. 8,528,663. Declarations.

Date: April 2021

Case: Fluid Energy Group LTD., v. Green Products and Technologies, LLC U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: IPR 2021-00357 for Patent No. 7,938,912. Declaration.

Date: May 2020

Case: Integrity A Science, Inc., v. Clearpoint Chemicals, Inc., United States District Court for the District of Colorado, Case No. 18-CV-0235-WYD-NYW. Deposition.

Date: March 2020

Case: U.S. Well Services, LLC v. TOPS Well Services, LLC et al. Southern District of Texas, Harris County, Texas, Cause No. 3:19- cv- 00225. Declaration.

Date: March 2020

Case: U.S. Well Services, LLC v. TOPS Well Services, LLC et al. Southern District of Texas, Harris County, Texas, Cause No. 3:19- cv- 00237. Declaration.

Date: January 2020

Case: Petroleum Products & Services, Inc. v. CP International, Inc. et al District Court of Harris County, Texas, Cause No. 2019-46100. Deposition.

Date: July 2019

Case: Sand Revolution LLC v. Continental Intermodal Group –Trucking LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Patent No. 8,944,740. Declaration.

Date: April 2019

Case: Arrows Up, LLC v. Oren Technologies, LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Patent Nos. 9,682,815, 9,248,772, 9,914,602, and 9,617,066. Deposition.

Date: March 2019

Case: Schlumberger Technology Corporation v. Integrated Drive Systems LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Cases IPR2018-00603/IPR2018-00604 for Patent No. 9,644,431. Rebuttal Declarations.

Date: March 2019

Case: Continental Intermodal Group-Trucking LLC v. Sand Revolution LLC, Sand Revolution II, LLC, U.S. District Court Western District of Texas, Midland/Odessa Division: Case No. 7:18-cv-00147-DC for Patent No. 8,944,740. Declaration.

Date: January 2019

Case: Roxane I. Beeman v. Art McAdams, San Mateo County, Superior Court of the State of California: Case No. 17CIV05278. Trial Testimony.

Date: December 2018

Case: Hunting Titan, Inc. v. DynaEnergetics GMBH & Co. KG, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Case IPR2018-00600 for Patent No. 9,581,422. Declaration.

Date: December 2018

Case: Billy Petty v. Chevron Corporation, Kern County, Superior Court of the State of California, County of Kern: Case No. BCV-16-103012 TSC. Deposition.

Date: November 2018

Case: Armstrong Oil Inc. v. Pieco, Inc. and Athnassia, LLC, Orange County, Superior Court of California: Case No. 30-2016-00881376-CU-PO-CJC. Deposition.

Date: November 2018

Case: Schlumberger Technology Corporation v. Integrated Drive Systems LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Cases IPR2018-00603 and IPR2018-00604 for Patent No. 9,644,431. Deposition.

Date: May 2018

Case: Arrows Up, LLC v. Oren Technologies, LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Patent Nos. 9,682,815, 9,248,772, 9,914,602, and 9,617,066. Declarations.

Date: April 2018

Case: Halliburton Energy Services, Inc. v. Schlumberger Technology Corporation, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Cases IPR2017-01579 and IPR2017-01580 for Patent No. 8,905,133. Declarations.

Date: March 2018

Case: Halliburton Energy Services, Inc. v. Schlumberger Technology Corporation, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Cases IPR2017-01575 and IPR2017-01577 for Patent No. 8,905,133. Declarations.

Date: February 2018

Case: Schlumberger Technology Corporation v. Integrated Drive Systems LLC, U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board: Cases IPR2018-00603 and IPR2018-00604 for Patent No. 9,644,431. Declarations.

Date: July 2016

Case: Seadrill v. Transocean: U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board; Case IPR2015-01929. Deposition.

Date: December 2015

Case: Crescent Terminals v. ExxonMobil Oil Corp. and Saybolt, LP: Civil Action Number: D194,189, District Court of Jefferson County, Texas 136th Judicial District. Deposition.

Date: September 2015

Case: Larry Gilman, et al. v Mannon L. Walters, et al: AAA; Case No. 52-198-Y-00012-12 FED INSD No. 3:12-cv-00114-SEB-WGH. Arbitration Hearing Testimony.

Date: June 2015

Case: Larry Gilman, et al. v Mannon L. Walters, et al: AAA; Case No. 52-198-Y-00012-12 FED INSD No. 3:12-cv-00114-SEB-WGH. Deposition.

Date: March 2015

Case: Macpherson Oil Company, et al. v Pace Diversified Corporation: Kern County, California Superior Court; Case No. S-1500-CV-274945-DRL. Trial Testimony.

Date: September 2014

Case: Macpherson Oil Company, et al. v Pace Diversified Corporation: Kern County, California Superior Court; Case No. S-1500-CV-274945-DRL. Deposition.

Date: June 2014

Case: Hayward Industries, Inc. v. Pentair Water Pool and Spa, Inc.: U.S. Patent and Trademark Office Before the Patent Trial and Appeal Board; Case IPR2013-00285. Deposition.

Date: February and March 2013

Case: Precision Energy Services, Inc. v. ThruBit, LLC: U.S. District Court for the Southern District of Texas; Civil Action No. 4:11-cv-04492. Deposition and Trial Testimony.