about NExT

"Developing world-class competency for tomorrow's E&P challenges"

The industry and academic partnership that is Network of Excellence in Training (NExT*) is delivering tailored training programs around the globe. In over 50 countries the NExT team is creating training and development programs to match the specific requirements of our customers. Through our global presence and experience in most oil and gas fields we can fill these programs with relevant examples and case studies that make each NExT course unique, specific and practical. We firmly believe that the retention of knowledge is maximized when theory is immediately applied to business relevant projects - learning by doing.

Core to the quality and superior standards that NExT offer is the technical team whose role it is to ensure only the best instructors, course material and case studies are combined to meet the exact requirements of our customers. Through our industry and university partners, together with frequent peer review with our customers we ensure emerging technologies are central to the content of our programs. Our faculty of over 250 instructors comes from a wide variety of technical and regional experience that allow NExT to bring world class expertise to the training environment.

Table of Contents

Page

EXECUTIVE SUMMARY

Network of Excellence in Training

Each workshop will be delivered through a dedicated instructor, focusing on practical exercises and best practice / new-Tech cases in an interactive setting between the participants and instructors. The workshops will aim at participants with intermediate to advanced level of understanding in Artificial Lift Technologies.

Part of the workshop will contain hands-on exercises, and will also include up to fifteen (15) PCs in each workshop containing software related exercises, containing demo licenses of PipeSim Software that will be used to run exercises by the participants.

Before commencing and after completing any of the workshops, all participants will take a pre- and post- assessment, as a means of measuring what was gained at the end of each of the workshops. The time of each assessment will depend on the contents and time availability. The post-assessment will also include a section for instructors' assessment by the participants.

Additionally, a specialized Oil (GL and ESP) Well Lab will be shipped to location, and will be used by the ESP and Gas Lift Workshops to enrich the interactive environment. The tool will simulate both gas and oil flow to maximize information retention from the practical scenarios from the workshop.

NExT will offer three of the most experienced instructors in the Artificial Lift Domain for the execution of the workshops, which will take place on the same day in Bahrain on the 7th of February 2011.

Electrical Submersible Pumps – ESP Workshop

One Day Workshop

Learning Objectives	Detailed
One Hour: 1. Application of Electrical Submersible Pumps: advantages and limitations. 2. Standard and non–standard applications.	• Pre – assessment • Advantages and limitations of the Electrical Submersible Pump method. Explain the advantages to produce high flow rates, drawdown and flexibility using Variable speed Drive • Description and standard applications and non–standard applications. • Exercise: Quick selection of an ESP pump (manual)
Two Hours: 1. Application of the API procedure to design an Electrical Submersible Pump (RP 11S4)	• Calculation of Total Dynamic Head. • Selection of pump stage. • Selection of motor and protector. • Exercise: Design of an ESP system using RP 11S4
Two Hours: 1. Special Applications	• Gas handling • Viscous oil • SAGD
One Hour: 1. New Technologies	• Downhole conditioning fluid – fluid recirculation. • Selective ESP completion to produce from three different zones. • Integrated solution for perforation, production and reservoir evaluation.
One Hour: 1. Oil Well Lab 2. Post-Assessment	• Simulation of gas lock, pump rotating in the wrong direction, Ytool, production test using the physical simulator shown below.

Gas Lift - GL Workshop

One Day Workshop

Learning Objectives	Detailed
Two and Half Hours; 1. Introduction	• Pre-sessions assessment (8:00-8:10 AM) • Advantages and disadvantages of the Gas Lift Method (8:15-8:20 AM) • Definitions: gas lift method, pressure-depth diagrams, gas gradient, multiphase gradients (8:20-8:40 AM) • Class problem 1 on gradients: the class is asked to find the most probable point of injection using different types of gradient calculation (8:40-9:15 AM) • Types and description of Gas Lift Completions (recommended practices, things to avoid, possible operational problems for each type of completions): a) Continuous Flow (tubing flow, annular flow, single and double completions); b) Intermittent Lift (simple completion, double packer chamber, insert chamber, simple accumulator, insert accumulator); c) Gas Pumps. (9:30-10:00 AM) • Types and descriptions of Gas Lift Mandrels (including multi-pocket and special application mandrels). Mandrel selection and limitations (geometry considerations, maximum working pressure, sour conditions (10:00-10:15) • Types and descriptions of Gas Lift Valves (including new developments for high pressure and flow rate applications) (10:15-10:25 AM)
Four Hours: 1. Gas Lift Design	• Nodal Analysis applied to gas lift system to get the injection point depth, liquid production and injection gas flow rate using “constant injection gas” equilibrium curves (10:30-11:15 AM) • Example calculation of equilibrium curves (11:15-11:20 AM) • Class problem 2 using PIPESIM to find the optimum gas flow rate and point of injection (11:20-11:30). • Gas passage through gas lift valves and orifices (newest models for the prediction of the dynamic behavior of gas lift valves). Use of Nova orifice to overcome instabilities (11:30-12 and 1:00 -1:30 PM). • Valve mechanics: IPO and PPO valves (1:30-1:45 PM) • Mandrel spacing for IPO and PPO valves (1:45-2:00 PM). • Example calculation and class problem 3 using PIPESIM: from the optimum point of injection calculated in problem 2, calculate the depths of the unloading valves for IPO and PPO valves (2:00-2:30 PM)

One and Half Hours: 1. Gas Lift Trouble-shooting 2. Post-Assessment	• Required data and chart recognition, calculations for stable production, problems related to hydrate formation, emulsions, sand, scale and other types of depositions (2:45-3:15) • Field Cases using the newest tools and techniques for trouble shooting (temperature using fiber optics; continuous temperature and pressure surveys incorporating joint detection devices and flow meters; point of injection determination using CO2) (3:15-3:30 PM) • Instabilities: causes and remedies (3:30-3:50 PM) • Post-Assessment

Oil & Gas Well Simulator

Special Workshop Equipment

The well simulator allows to calculate the well performance IPR using the Productivity Index (no gas in the reservoir: Pwf > Pb) and Vogel (gas in the reservoir: Pwf < Pb). The difference can be calculated and visualized using the well simulator. The reservoir permeability can be calculated as well.

The well is completed with an ESP using a Variable Speed Drive allowing varying the pump speed (RPM). We use this feature to optimize the well. Also, the conditions of gas lock and pump–off can be shown. A packer can be installed to visualize the effect of a packer without venting the gas below the packer. A CrossFlow completion can be shown as well with the use of packer in the well.

A Ytool completion can be run showing how to run wireline tools. The following operations can be performed: fishing Ytool blanking plug, running a wireline tool below the pump through the Ytool straight leg, reinstalling the blanking plug, restart the pump to normal operation.

Redundant/Back-up completion ESP – Gas Lift can be shown as well allowing to demonstrate the difference in production between ESP and Gas Lift. The benefits of a hybrid completion can be shown presenting the advantages of using both systems ESP and Gas Lift simultaneously.

If using a viscous fluid (for example a mixture of water and glycol) it can be shown the effect of the viscosity on the well productivity and on the pump performance as well.

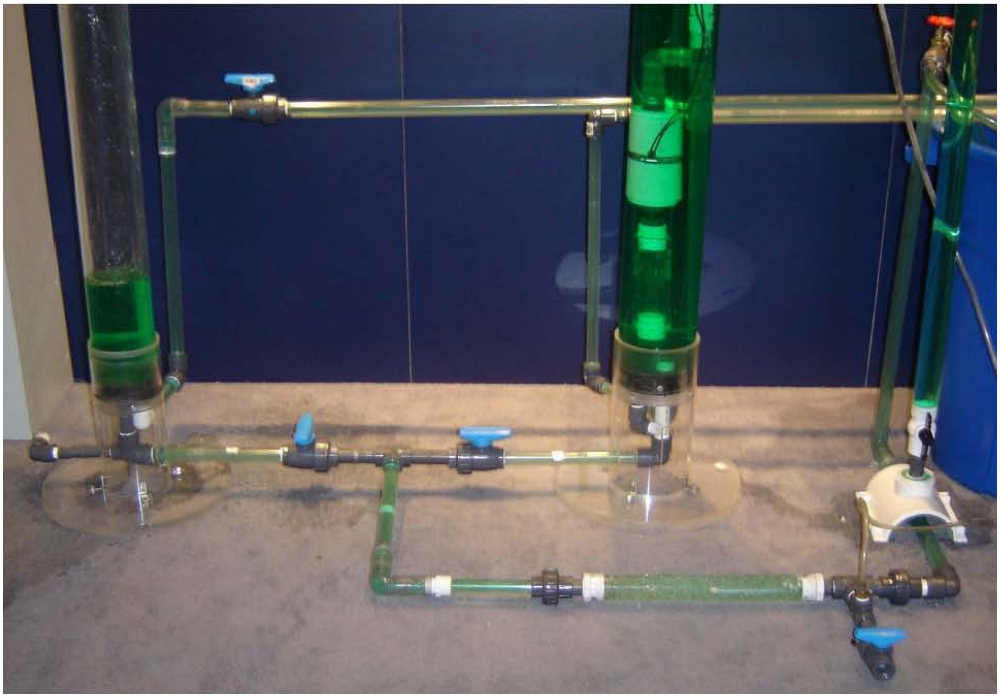
The well simulator can be used for demonstrating the different flow regimes in two phase flow for both the vertical production and the horizontal pipeline from the wellhead to the separator.

Well tests can be performed for different flowing conditions. The production flowrate can be measured gathering the production in the tank which is part of the Oil Well Simulator loop. The well flowing pressure can be calculated through the dynamic fluid level.

The wellhead is equipped with connections to vent the gas to the atmosphere, inject the gas in the pipeline using check valves to avoid recirculation from the pipeline to the annulus of the well. It can be shown what happens if the gas is not removed from the annular space.

It can be shown that not always a orifice in the production tubing yield to a reduction in the production. In fact it shows that under some operational conditions the flowrate can be increased.

Effect of the foam in annulus can be simulated as well. This simulator can be packed and send to the location of the course. The following pictures show different views of the Oil Well Simulator.



Sucker Rod – SR Workshop

One Day Workshop

Learning Objectives	Detailed
One Hour: 3. Application of Sucker Rod Pump method: advantages and limitations. 4. Description of surface and subsurface equipment.	• Pre-Assessment • Advantages and limitations of the Sucker Rod Pump method. Explain the advantages to produce heavy oil, steam injected wells, maximum drawdown, standardization, etc. Limitations regarding depth and oil viscosity. • Description and function of surface equipment: prime mover, gearbox, pumping unit, polished rod and wellhead/stuffing box. • Description and function of subsurface equipment: rod string, types of downhole pump, gas separators, tubing anchor. • Practical Exercises: ○ Construct composite IPR (Commingled) ○ Construct composite IPR (water and oil)
Two Hours: 1. Calculation of operational parameters.	• Calculation and sizing using standard methods and recommended practices as API RP 11L. • Calculation of polish rod loads. • Calculation of gearbox torque, counterbalance, power and prime mover sizing. • Practical exercises: ○ Pumping Unit Geometry
Two Hours: 2. Analysis and troubleshooting of sucker rod pumping installations.	• Comparison of design methods using spreadsheets and free website software. • Analysis of sucker rods pumping installation throughout well testing, fluid level and dynamometric cards. • Principles of dynamometry to troubleshoot a sucker rod pumping installation. • Practical exercises. ○ Calculate the main parameters of the pumping system using the software Q-Rod
One Hour: 2. Best Practices	• Selection of components. • Gas handling. • Corrosion and mechanical wear. • Practical exercises: ○ Calculation of free gas fraction at pump intake and selection of gas separators ○ Acoustic determination of static and producing bottomhole pressures
One Hour:	• Description of Pump-off controllers, automation and remote data transmission.

1. New Technologies 2. Post-Assessment	• Innovative equipment and completion designs to solve special problems. • Practical exercises: ○ Case study discussion about new technologies applications in particular oilfields

APPENDICES

Appendix A - Instructor's Profile

OLEGARIO RIVAS

Director of Curriculum

Principal SETC

Schlumberger – Network of Excellence in Training (NExT)

Tulsa – Oklahoma

EMAIL: **olrivas@slb.com**

CITIZENSHIP: **American.**

MARITAL STATUS: **Married.**

EDUCATION: **BS Mechanical Eng.** Universidad del Zulia, Maracaibo, Venezuela, 1973.

BS Petroleum Eng. Universidad del Zulia, Maracaibo, Venezuela, 1982.

LANGUAGES: **Spanish / English.**

EXPERIENCE:

Schlumberger (Schlumberger–REDA) April 1997 – Present.

NEXT (Network of Excellence in Training) Director of Curriculum – Artificial Lift and Completions. Coordinating and delivering training worldwide for Schlumberger and national/international oil companies in the area of Artificial Lift and Well Completions.

Artificial Lift Principal SETC.

March 02 – April 02: Senior In Touch Engineer – Worldwide. Application engineering support across all product lines to the Geomarket organization – Worldwide, assisting in identifying areas for improvement in technical documentation, training, communication and product design, develop a central expertise for Artificial Lift ESP application design, cooperate with Product Champions to publish new product information.

December 00 – March 02: New Business Development Support – North and South America. Generating new business sales for well completion and production facilities integral solutions. Proposing improvements and researching and developing new technologies for equipment and processes to reduce cost and increase operational

efficiency, and training personnel in these technologies. Promoting new business and clients through the development of new technology and services. Supervising design development through customer documentation, sound technical principles and prior operating history. Providing technical support for use, operation and maintenance of equipment to field operations, and presenting internal and external seminars on new products and services.

March 00 – November 00: In – Touch (Non Standard Applications). Providing technical support (worldwide) in Non – Standard Applications including new completions, links with surface facilities, developing new ways to fulfill customers and technical requirements.

April 99 – February 00: Technical Manager Technical Engineering and Marketing Systems, Bartlesville, Oklahoma. Providing technical support to regions in the Western Hemisphere, presented internal and external seminars on new technologies.

April 97 – March 99: Project Engineer Engineered Systems Department, Bartlesville, Oklahoma. Designing new equipment to improve performance, designing new well completions.

INTEVEP, S.A. R&D of Petroleos de Venezuela (PDVSA), Los Teques, Venezuela.

October 1993 – April 97: (Assigned to LAGOVEN, S.A.) **Artificial Lift Specialist** – Petroleum Engineering Department, Lagunillas, Estado Zulia, Venezuela. Coordinating and developing strategy for reactivation of Bolivar Coast Field with 100+ wells under sucker rod pumping, designing well completion and selecting ESP and PCP equipment for installation, preparing and reviewing well completion programs, developing of well operational follow-up and optimization procedures, evaluating equipment and well performance, recommending well data gathering standards, preparing and reviewing technical reports.

September 1992 – August 1993: (Assigned to MARAVEN, S.A.). **Artificial Lift Specialist** – Technology Department – Petroleum Engineering Division, Lagunillas, Estado Zulia, Venezuela. Designing and implementing projects related to heavy crude oil production, designing a special pump and well completion for selective/simultaneous production of two zones for Lagunillas Field wells, designing a special pump and well completion to produce heavy oil in Boscan Field wells, designing a special pump to produce high GOR wells from the Bachaquero Field, designing a new tool to run bottom hole calipers in horizontal and deviated wells, supervising field testing of new technologies such as ESP, PCP, Long Stroke Pumping Units.

June 1991 – August 1992: Specialist – Research and Development in Production Methods, Production Department, E&P Division, INTEVEP, Los Teques, Estado Miranda, Venezuela. Evaluating technical & economical aspects of sucker rod pumping vs. jet pumping, developing sucker rod user's manual and technical specifications and inspection procedures manual for sucker rod centralizers, designing new technologies field test programs, providing technical assistance to CORPOVEN, LAGOVEN, and MARAVEN.

April 1989 – May 1991: Head of Artificial Lift Group - Research and Development in Production Methods, Production Department, E&P Division, INTEVEP, Los Teques, Venezuela. Planning and conducting research related to materials and equipment for well completion and production, preparing and reviewing proposals and technical reports while maintaining a close working relationship with PDVSA affiliate operating companies in order to develop new research lines and/or solve operational completion/production problems, supervising engineers and technical staff (14).

May 1986 – March 1989: Project Leader – Research and Development in Production Methods, Engineering Material Department, Technology Division, INTEVEP, Los Teques, Venezuela. Evaluating new products, tools, and equipment for drilling, completion and production projects, providing technical assistance in tool designing for corrosion evaluation in oil wells, evaluating quality control procedures of manufacturers and service companies of PDVSA affiliates.

December 1979 – April 1986: Project Leader – Production Facilities for the Development of the Orinoco Oil Belt. General Engineering Department, E&P Division, INTEVEP, Los Teques, Venezuela. Designing and evaluating heavy oil production facilities for the development of the Orinoco Oil Belt in Venezuela, participating in the conceptual, design of a harbor for 100.00 DWT tankers in East Venezuela. **Project Leader –** Thermal Insulators for Steam Injection Wells. Responsibilities included evaluating lab and field testing of thermal insulators for steam injection wells.

December 1977 – November 1979: Project Leader – Production Facilities for Offshore Platforms. Designing and evaluating gas production facilities for the development of the Offshore North Paria Gas Field in North Venezuela. Assigned for six months to Det Norske Veritas Offshore Division and for six months to Aker Engineering in Oslo, Norway.

Ministerio de Energia y Minas (Ministry of Energy and Mines) – Maracaibo, Venezuela.

July 1974 – November 1979: Field Engineer. Supervising the design and maintenance of oil production facilities in Lake Maracaibo, Venezuela.

PATENTS

1. US Patent # 7,673,676 Electrical Submersible Pumping System with Gas Vent" – March 09, 2010.
2. US Patent # 7,231,978 "Chemical Injection Well Completion Apparatus and Method" – June 19, 2007.
3. US Patent # 6,704,689 "Complexity Index Methodology for the Analysis of Run Life Performance" – March 9, 2004.

   Canadian Patent Application
4. US Patent # 6,533,039 "Well Completion with Cable Inside a Tubing and Gas Venting through Tubing" – March 18, 2003.
5. US Patent # 6,299,672 "Subsurface Integrated Production Systems" – October 9, 2001

   UK Patent Application #GB2355214.

   Patent Aplication in Venezuela.
6. US Patent # 6,260,627 "System and Method for Improving Fluid Dynamics of Fluid Produced From a Well" – July 17, 2001.
7. US Patent # 6,260,626 "Method and Apparatus for Completing an Oil and Gas Well" – July 17, 2001.
8. US Patent # 6,250,390 "Dual Electrical Submersible Pu mping Systems for Producing Fluids from Separate Reservoirs" – June 26, 2001.

UK Patent Application # GB2345711.

Brasil Patent # BR00004670A 3/13/2001

Patent Aplication in Venezuela

9. US Patent # 6,230,810 "Method and Apparatus for Producing Wellbore Fluids from a Plurality of 9ells" – May 15, 2001.

10. US Patent # 6,201,327 "System and Method for Absorbing the Expansion and Contraction of Internal Fluids of a Sumergible Electric Motor" – March 13, 2001.

UK Patent Application #GB2356414.

11. US Patent # 6,135,210 "Well Completion System Employing Multiple Fluid Flow Paths" – October 24, 2000.

UK Patent Application #GB2339816

Brasil Patent #BR00000006A 09/26/2000

Patent Application in Canada and Venezuela

12. US Patent # 5,309,998 "Pumping System Including Flow Directing Shoe" – May 10, 1994.

Venezuelan Patent # FP - 02 - 02662.

13. US Patent # 5,129,689 "Threaded Tubular Connection with Outer Threaded Ring" – July 14, 1992.

Mexican Patent # MX9102287.

Canadian Patent # 2,056,318.

Venezuelan Patent.

14. US Patent # 4,976,591 "Self Lubricating, Two Stage Variable Compressor" – December 10, 1990.

UK Patent # GB2242239.

German Patent # DE404224.

French Patent # FR2659116.

Dutch Patent # NL9001409.

Brazilian Patent # BR9003818.

Canadian Patent # 2,031,034.

Venezuelan Patent # FP - 02 - 04414.

Colombian Patent # 325,276.

Ecuadorian Patent # SP90 - 648.

15. US Patent # 4,913,230 "Sucker Rod Centralizer" – April 3, 1990

    UK Patent # GB2241009.

    Venezuelan Patent # FP - 02 - 02385.

16. US Patent # 4,877,542 "Thermal Insul. Fluid" – October 31, 1989

    European Patent # EP0341976.

    Venezuelan Patent # 51,034.

17. Venezuelan Patent # FP - 02 – 00594 "Device to Install and Transport Corrosion Samples in a Sucker Rod Pumping Well".

18. US Patent #4,871,020 "Sucker Rod Centralizer" – October 3, 1989

    UK Patent # GB2210085.

    German Patent # DE3830813.

    French Patent # FR2620766.

    Dutch Patent # NL8802263.

    Venezuelan Patent # 51,494.

19. US Patent # 4,793,412 "Centralizer for a Polished Bar and/or a Substance Pump Piston Stem" – December 27, 1988.

    UK Patent # GB2210084.

    German Patent # DE3830814.

    French Patent # FR2620767.

    Dutch Patent # NL8802264.

20. US Patent # 4,750,865 "Subsurface Stuffing Box Assembly" – June 14, 1988.

    Canadian Patent # 1,276,102.

    Venezuelan Patent # 51,836.

21. US Patent # 4,682,655 "Slotted Housing Having Multiple Seats for Supporting and Locating Submersible Pumps in Deep Wells" – July 28, 1987.

    Canadian Patent # **1,270,190.**

    Venezuelan Patent # 51,837.

– PUBLICATIONS AND PRESENTATIONS

1. ESP Applications to Produce Heavy Oil

   SPE/AIChE Joint Workshop Heavy Oil and Bitumen

   Houston, February 2010

2. Downhole Fluid Conditioning System for Electrical Submersible Pumps – Golfo San Jorge Basin, Argent.

   Electrical Submersible Pump Workshop

   Houston, April 2009.

3. Pushing the Boundaries of Artificial Lift Applications: SAGD ESP Installations in Canada.

   2007 SPE Annual Technical Conference and Exhibition

   Anaheim, California, 11 - 14 Nov 2007.

4. Development of an Integrated Solution for Perforation Production and Reservoir Evaluation

   Electrical Submersible Pump Workshop

   Houston, April 2007.

5. Selective ESP Well Completion

   2007 SPE ATWorkshop - A Field Life-Cycle Perspective to Artificial Lift Asset Systems

   Cartagena – Colombia, February 2007.

6. Development of an Integrated Solution for Perforation Production and Reservoir Evaluation

   2007 SPE ATWorkshop - A Field Life-Cycle Perspective to Artificial Lift Asset Systems

   Cartagena – Colombia, February 2007.

7. Steam Assisted Gravity Drainage with ESPs

   2007 SPE ATWorkshop - A Field Life-Cycle Perspective to Artificial Lift Asset Systems

   Cartagena – Colombia, February 2007.

8. Subsurface Integrated Production Systems

   First International Oil Conference and Exhibition

   Cancun – Mexico, August – September 2006.

9. Development of an Integrated Solution for Perforation Production and Reservoir Evaluation

First International Oil Conference and Exhibition

Cancun – Mexico, August – September 2006.

10. Sistemas Integrados de Produccion de Subsuelo "SIPS"

I Expo Congreso Internacional Industrial

Maracaibo – Venezuela, December 2005

11. Completacion Selectiva para Producir de Multiples Arenas

I Expo Congreso Internacional Industrial

Maracaibo – Venezuela, December 2005

12. Selective SPS Well Completion to Produce from Three Different Pay Zones

Electrical Submersible Pump Workshop

Houston, April 2003.

13. Technical Viability of a New Subsurface Integrated Production System (SIPS)

International Thermal Operations and Heavy Oil Symposium (ITOHOS)

Margarita - Venezuela, April 2001

14. Subsurface Integrated Production Systems (SIPS)

Electrical Submersible Pump Workshop

Houston, April 2000

15. Cross Flow - An Innovative Well Completion

ESP - New Technologies Seminar

Venezuela, June 99

16. Well Completion Employing Multiple Fluid Flow Paths

Electrical Submersible Pump Workshop

Houston, April 99

17. Production Optimization of Sucker Rod Pumping Wells Producing Viscous Oil in Boscan Field, Venezuela

SPE Production Operations Symposium

Oklahoma City, April, 95

18. Stuffing Box System for Sucker Rod Pumps - Boscan Field Results

X Jornadas - Sociedad Venezolana de Ingenieros de Petróleo (SVIP)

Puerto La Cruz – Venezuela, October 93

19. Centralizers for Directional Wells

5th. International Conference on Heavy Crude and Tar Sands

Caracas – Venezuela, August 91

20. Results of Sucker Rod Centralizers Installation in Deviated and Horizontal Wells

Taller de Métodos y Operaciones de Producción en Pozos Horizontales

Maracaibo – Venezuela, May 91

21. Sucker Rod Centralizers for Directional Wells

SPE 1990, Latin American Petroleum Engineering Conf.

Rio de Janeiro – Brasil, October 90

22. Downhole Corrosion Testing of OCTG Materials for Heavy Crude Injection Wells Containing CO2 and H2S

CORROSION 90 - National Association of Corrosion Engineers (NACE)

Las Vegas - Nevada, April 90

23. Heavy Oil Production System

II Seminario Interfilial PDVSA de Levantamiento Artificial

Puerto La Cruz - Venezuela, March 90

24. Sucker Rod Centralizers for Deviated Wells

II Seminario Interfilial PDVSA de Levantamiento Artificial

Puerto La Cruz - Venezuela, March 90

25. Evaluation of Ken-Pak as Thermal Insulator for Steam Injection Wells

Revista Técnica de INTEVEP, Vol 4 - Nº 1, pp 27 - 33

Los Teques - Venezuela, January 88

26. Stuffing Box for Sucker Rod Pumps

37º Congreso Anual de ASOVAC

Maracaibo - Venezuela, November 87

27. Evaluation of Gelatinous Fluids and Nitrogen as Thermal Insulators.

5tas. Jornadas Científico - Técnicas, Facultad de Ingeniería, La Universidad del Zulia (LUZ).

Maracaibo - Venezuela, November 85

28. Equipment for Radiation Material Implant in the Uterus for Cancer Treatment

2º Congreso de Oncología

Caraballeda - Venezuela, September 85

29. Development of Tanker Based Early Production System

Aker Engineering

Oslo – Norway, October 78

30. Well Completion Systems for Cretaceous Formations in Lake Maracaibo

Undergraduate Thesis

School of Petroleum Engineering, La Universidad del Zulia

Maracaibo - Venezuela, January 78

31. Study, Design and Construction of a Motor Speed Regulator

Undergraduate Thesis

School of Mechanical Engineering, La Universidad del Zulia

Maracaibo - Venezuela, July 73

32. More than twenty internal publications in INTEVEP – PDVSA R&D Center.

MIGUEL A. MACHADO

Villahermosa Mexico miguel.machado@hotmail.com +52 1 993 199 6516

MBA, Mechanical Engineer with wide Production Engineering experience in selection, design, implementation, optimization and operation of artificial lift systems in oil and gas wells and design, construction and operation of surface facilities for oil, gas and water handling.

SUMMARY OF QUALIFICATIONS

- With Weatherford, developed new business areas in Suriname and México introducing new products and promoting long term relationship with customers. Sold the first five Electric Submersible Pumps in Latin America (Trinidad and Suriname) for US$ 500,000.
- Managed Engineering, Procurement, Construction, Commissioning and Operation of several oil and gas production facilities projects. Worked as Operations Leader of PDVSA's Production Operation Center for five years. Successfully conducted tests of Electric Submersible Pumps (REDA and Centrilift), Gas Lift (Camco) and Multiphase Flow Meters (VenturiX, AGAR and ROXAR) under real conditions.
- Team-oriented professional with good communication skills willing to lead and work collaboratively with colleagues to successfully exceed goals and expectations.

EDUCATION AND TRAINING

1998 - La Universidad del Zulia. Master in Business Administration. **Maracaibo, Venezuela. GPA:** 3.7

1987 - Universidad de Carabobo. B. S. in Mechanical Engineering. **Valencia, Venezuela.** Thesis: Talcum powder feeder evaluation and redesign at a tire industry.

PROFESSIONAL EXPERIENCE

2009 – 2010

Senior Technical Advisor / Consultant for the following Companies:

Multiphase Systems Integration / USA

- Design of surface separation equipment and water treatment for offshore facilities. QA/QC for PRE-FEED and Basic Engineering documentation for Sonangol P&P's Pacassa and Bufalo fields in Angola.

InPetrol – GeoAplicaciones / Mexico

- Business Development in production operation monitoring and data management at Poza Rica area. Support for downhole memory gage promotion and sales (Metrolog) in the southern area of Mexico.

Indequipos – Lufkin / Mexico / Colombia

- Artificial Lift Systems and oil production equipment sales and technical support representation.

2004 – 2009

Weatherford. México

- Led the preparation of the contract "Integral Service of Optimization and Installation of Artificial Lift Systems at the Southern Region of PEMEX-Package 1"; which included economic analysis, gathering and preparing the technical information and writing the contract and legal documentation. Corresponding investment was in excess of USD 30,000,000.
- Led production packers and plugs introduction at the Northern area of México keeping monthly sales of over USD 150,000 between 2007 and 2008.
- Led the consolidation of the Wellhead Department at the Central Area of México for ATG (Chicontepec) drilling projects. The revenue and profit were increased until the break-even point was achieved in nine months.
- Participated in different bidding processes and economic evaluations for PEMEX, MPG-IHSA, GPA and other oil and gas companies. Got positive results in ATG I, II and IV and in Reynosa (Nejo Field, Mexico).

Weatherford. Trinidad / Suriname

- Led candidate selection, design and installation of the first three electric submersible systems for Staatsolie in Suriname. Sales were for USD 350,000 which opened the market for the installation of 100 additional systems.
- Coordinator for technical support and sales of Artificial Lift Systems in Trinidad, with annual revenues in excess of USD 2,000,000 between 2004 and 2007.

2003-2004

SATENCO. Caracas, Venezuela

- Led the mechanical design of a Methanol Plant (Turagua, Aragua State). Responsible for designing, installing and starting-up of heat exchangers, process pumps, pipelines and distillation towers.
- Participated as leader of the water distribution installations and production systems for the exploitation of alternate water sources for the development of Barlovento Region (Venezuela). This was a project financed by the European Union for € 50,000,000.
- Led the team responsible for capturing and analyzing of field data for the diagnosis of water pumping and storage facilities at Barlovento Region (Venezuela). This activity was completed two weeks before the planned date.

1990 – 2003

PDVSA-Intevep // Research and Development Center. Los Teques, Venezuela

- Led the phases of engineering, procurement and construction of PDVSA (Petróleos de Venezuela, S.A.) Production Research Center. These facilities included a flow station for gathering, separation, pumping and storage of oil, gas and water. This project was completed as planned, scheduled and budgeted.

- Operations Leader of the Production Research Center for three years. Real scale tests of new technologies in Artificial Lift Systems and Surface Production Facilities were conducted in this center. Main responsibilities were design, modify and operate all the surface facilities and downhole equipment to accomplish customer requirements. Relevant evaluated technologies included gas handlers, downhole hydrocyclonic separators, intermittent gas lift and Viton progressing cavity pumps. Additionally, on the surface facilities were planned and executed several tests for multiphase flow meters (VenturiX - Schlumberger, ROXAR, AGAR and FRAMO) with high viscosity fluids and gas-liquid mixtures. These industrial scale evaluations were done at absolute customer's satisfaction, following quality standards and meeting time schedules.
- Taught several training courses in Artificial Lift Systems to applications' engineers at PDVSA.
- Participated in the design, installation, diagnosis and optimization of wells with electric submersible pumping systems. These applications include high pressure and temperature conditions and failure analysis on gassy wells in El Furrial and Lagunillas Lago fields respectively. The recommendations generated savings in excess of USD 1,000,000 in five equipment erroneously selected.
- Participated in several projects for handling and treatment of 100,000 cubic meters of hazardous waste in "El Tablazo" petrochemical complex and fuel distribution plants. These projects were oriented to accomplish environmental regulations.
- Design of two 100,000 barrels storage tank and a pumping station for the Orimulsion Plant to increase its production capacity.
- Conducted the failure analysis of a main heat exchanger at the Orimulsion (Bitumen) plant. The evaluation showed that design flaws caused the pipe to break and collapse. Consequently a 100,000-barrel per day plant was out of service for two weeks.

1987 - 1990

PDVSA-LAGOVEN // AMUAY Refinery. Punto Fijo, Venezuela

- Mechanical Maintenance Supervisor in the Amuay Refinery. Main activities and areas of responsibility included: HSE, inspection and maintenance of rotary equipment, distillation towers, drums, pipelines and heat exchangers.

1987

Hilados Flexilón // Industrial Services Department. Maracay, Venezuela

- Engineer responsible for maintenance and modification jobs in the steam generation and compressed air plant, air conditioning systems, industrial water and water treatment plant.

SKILLS

- Engineering design, optimization and field operations in oil and gas major production facilities
- Field and lab experience in the implementation and optimization of artificial lift systems.
- Field experience in maintenance of refining installations
- Field computer applications include: PCPump® (From CFER technologies) for Progressing Cavity Pumps Design; WellFlo® Literacy, Nodal Analysis Software; LOWIS® Literacy, Real Time Monitoring and Analysis of Oil Production Software.
- *General software skills include: Excel, Word, PowerPoint, MS Project, Visual Basic, etc.*
- Fluent in English and Spanish
- Analytical capability with excellent quantitative skills
- Able to work under pressure and meet tight deadlines

- Responsible, honest and enthusiastic team player

PUBLICATIONS

1. Study of oil production methods in Varadero's Field-Cuba. Intevep Technical Report, 2001.
2. Analysis of the application of electric submersible pumping in Lagunillas - Lago oil field. INT-8641, 2001.
3. Study of Down Hole Water Separation Equipment (AQWANOT - Schlumberger) at Petroleos de Venezuela's Experimental Production Center. INT-7899, 2000.
4. Installation of an electric submersible pumping system in the well FUL-69 at El Furrial oil field, Venezuela. CITOR 01-001. October, 2000.
5. Electric Submersible Pump GC2900 (Baker – Centrilift) experimental study with two phase viscous flow. INT-7549, 2000.
6. Tapered Pump (Baker – Centrilift) Experimental Test with Light and Heavy Oil in Petroleos de Venezuela's Intevep Field Laboratory. Paper presented at SPE Workshop, Houston, 1999.
7. VenturiX Multiphase Flow Meter Evaluation at Experimental Production Center. INT-5778, 1998.
8. Intermittent Gas Lift Test at Experimental Production Center. INT-5396, 1998.
9. GCNPSH Pump (Baker – Centrilift) Experimental Study with heavy oil. INT-4908, 1998.
10. Master Gas GCNPSH (Baker – Centrilift) System Experimental Study. INT-4723, 1998.
11. Intermittent Gas Lift Test Plan at field scale laboratory. INT-4623, 1998.
12. Multiphase Flow Meter Evaluation with heavy oil, water and gas at Experimental Production Center, 1997.
13. Progressing Cavity Pump (Geremia MS-180-1000) Test at Experimental Well. INT-3978, 1997.
14. Advanced Gas Handler test at Experimental Well, 1997.
15. Intermittent Gas Lift Optimization with Rosa Mediano oil at Experimental Well, 1996.
16. Project Administration Model to Hazardous Waste, 1995. MBA Thesis.
17. Petroleos de Venezuela's Experimental Production Center Details Engineering. Venezuela, 1995.
18. Water and Heavy Oil Tanks Basic Engineering for Orimulsion Manufacturing Plant, 1993.
19. Heat Exchanger failure analysis at Orimulsion Manufacturing Plant, 1993.
20. Mercurial Wastes Treatment Basic Engineering at Pequiven, "El Tablazo" Petrochemical Complex, 1992.
21. Hydrogen Furnaces Reliability Study at Pequiven, "El Tablazo" Petrochemical Complex, 1992
22. Water and gas pipeline design for Orimulsion furnace, 1992.
23. Fuel Distribution Tank Waste Treatment, Catia La Mar, Venezuela, 1991.
24. Distillation Tower Structural supports design at Flexicoking Plant, Amuay Refinery, 1991.
25. Talcum powder feeder evaluation and redesign at a tire industry, 1986. BS Thesis, Mechanical Engineering.

ARTICLES

"Field Scale Research on Artificial Lift".

SPE 39040, 1997.

"Tapered Pump Experimental Tests with Light and Heavy Oil in Petroleos de Venezuela - INTEVEP Field Laboratory".

17th Annual Electric Submersible Pump Workshop. Houston, TX. April 28-30, 1999

SPEECHES

"The Application of Artificial Lift Systems in Mature Fields Exploitation Strategy".

México Oil Show and Conference. Villahermosa, México, 2008.

"Research and Development in Artificial Lift Pumping, a way for productivity increase".

Research Conference (JIFI 2002) Engineering Department of the Central Universidad of Venezuela, 2002.

RESUME

Ali Hernández
(Mechanical Engineer BS, M. Sc., Gas Lift Specialist)

Telephone: 58-212-9924341 Cell 58-414-288635 (to call from USA dial 011 first)

e-mail: alihernandez2357@hotmail.com

1980 **Bachelor in *Mechanical and Aerospace Engineering***

University of Delaware
Newark De., USA

CUM LAUDE

1982 **Master in Mechanical and Aerospace Engineering**

University of Delaware

Newark De., USA

1982

1983-2010 **PDVSA Intevep**: Multiphase Flow R&D Projects, Gas Lift Field Engineer, Gas Lift Instructor, Gas Lift R&D Projects and Software Development for Gas Lift Design And Trouble Shooting.

1995 Winner of **The Exceptional Contribution Award** at PDVSA Intevep.

1999 Winner of **The 1999 and 2000 Creativity Award** at PDVSA Intevep**.**

2001 **Chairman of the API Task Group** for the development of a new API Recommend Practice for Intermittent and Chamber lift Installations (RP API 11V10)

SPE PUBLICATIONS (*go to www.onepetro.org to unload abstracts or complete manuscripts;

Search by Ali Hernandez or A. Hernandez as Author)

SPE26556; SPE39040; SPE39853; SPE52124*; SPE53986*; SPE56664*; SPE69401*; SPE69402*; SPE77504*; SPE77729*; SPE81166*.

PROFESSIONAL REFERENCES

- Cleon Dunham, Ret. Shell Oil Co. (cleon@oilfieldautomation.com)
- Luis Prado, Shell Venezuela, Caracas (luis.prado@shell.com)
- Jim Hall, Shell (jim.hall@shell.com)
- Jesus Chacín, C-FerTechnologies, Edmonton (J.Chacin@cfertech.com)
- Herald Winkler, Texas Tech University, Lubbock (hwinkler@coe.ttu.edu)
- John Martinez, Gas Lift Specialist, Houston (pa.amart@juno.com)
- Olegario Rivas, Schlumberger, Tulsa (orivas@tulsa.oilfield.slb.com)
- Rosaura Heath, ConocoPhillips, Aberdeen (rosaura.heath@conocophillips.com)