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PARS KAYHAN Experience, Expertise, Excellence

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One Company Multiple Solutions









CEO MESSAGE

For Us, Pars Kayhan means commitment to project execution and satisfaction of customers.

Improvement and leadership have been attributed to Pars Kayhan since we started our activities with small industrial projects up to the completion of national large-scale oil & energy projects. We believe that, just like developing a cutting-edge product, building a sustainable company is something that takes care and hard work.

To be a pioneer, by our successful quarter century experience we have learnt how to be agile and flexible while growing ourselves. We are proud of growing up from graduated engineers to experienced professionals and project managers that carry out our social responsibilities.

Going forward, Pars Kayhan will continue deploying its capabilities, industry-leading human resources, and commitment to change and challenge in the execution of projects beyond Iran.



HISTORY

Founded in 1991, Pars Kayhan is a privately held contracting company started by providing **Design**, **Engineering**, **Procurement** and **Construction** Services in fields of Oil, Gas, Petrochemical, and Power. After 3 decades of adventures with execution of biggest projects in Iran and also international projects abroad, Pars Kayhan has started its activities in upstream section as well.

Pars Kayhan has performed various projects, started by Power plant facilities and followed by Tank farms, pump stations, pipelines, refinery and petrochemical units. We entered to upstream since 2016 by executing 18 wellhead facilities in South Yaran oil field of Iran.

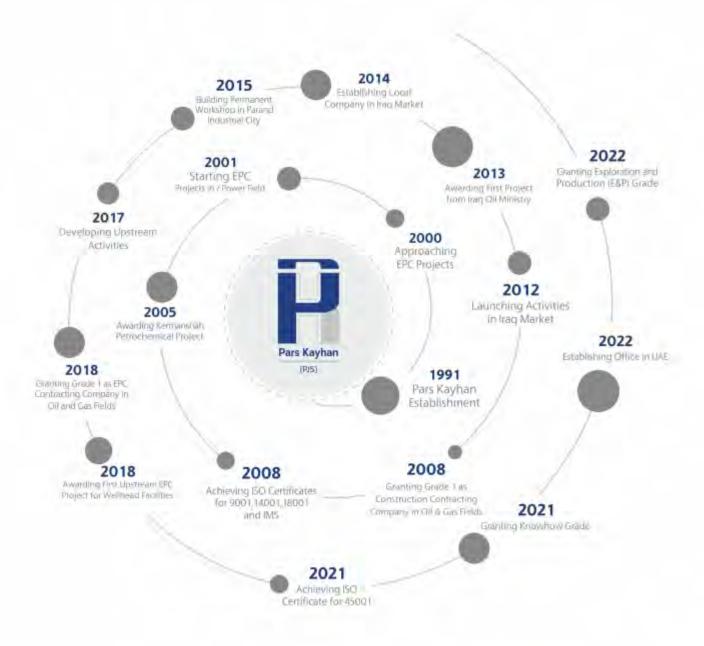
Developing oil fields study, Drilling team and machineries, Pars Kayhan selected as one of Iranian Qualified Exploration and Production (E&P) Company by Oil Ministry.

Today we can take care of every aspect of a project from its initial concept to techno-economic studies, front-end and detailed design, upgrades and optimization plans, hazard and risk analysis, procurement, project management and site supervision. We boast the full set of ISO certifications, a tangible sign that quality and safety are top priorities in everything we do.

We build long-term relationships with our clients, focusing on bringing every assignment to a successful completion, on time and to budget. Whether direct contracts, frame agreements, service contracts or EPC, EPCM and PMC contracts we use QA, HSE, QRA, risk assessment, continuous improvement and sustainability protocols and processes to deliver excellence to our clients.

Pars Kayhan has been awarded **Knowhow Grade** for innovation and development of engineering solutions in EPC projects. Nowadays, Pars Kayhan is ambitious to invest on big national projects in Iran and Middle East.

31 Years PERSEVERANCE





AT A GLANCE

DOWNSTREAM

OIL, GAS & PETROCHEMICALS

- Terminal & Storage Facilities
- Pipeline & Pump Stations
- Treatment / Process Plants
- Gas / Condensate and Oil Production
- Petrochemical Complexes
- Refinery Units

POWER GENERATION & DISTRIBUTION

- Single & Combined Cycle Power Plant (BOP)
- Mobile Sub-Station
- Overhead Lines / Cables / Substations up to 400kv
- Transmission Line up to 400kv

WATER

- Potable Water Treatment
- Oily / Wastewater Collection and Treatment
- Desalination
- Dam



UPSTREAM

UPSTREAM SUBSURFACE

- Geology, Petro-Physics and Geophysics Services
- Processing and Interpreatation OF Seismic Data
- Analysis and Interpretation of Seismic and Geological Data
- Core and Fluid Analysis
- Reservoir Screening
- Economic Evaluation / MDP Preparation
- IOR /EOR Techniques

DRILLING & COMPLETION

- Well-placement Trajectory/ Planning
- Horizontal/ Vertical well Placement and Interference Analysis
- MPD & CPD Services
- RMR- Riser less Mud Recovery Service
- MPC- Managed Pressure Cementing Service
- Well Concept Selection
- Site Survey Management
- Rig Service (Truck mounted/ Skid)
- H2S Service
- Coiled Tubing / N2 Pump Service
- Cementing Service
- Mud logging Service
- Mud Cube

WELLHEAD SURFACE FACILITIES

- Well PAD Design & Construction
- Chemical Injection Packages
- Control Panel
- Piping & Special Valves





MANPOWER

After 30 years of successful completion of various projects in Energy fields in Iran and outside the country, we are proud of our most valuable properties which is our human resources who are highly qualified skilled workers and experienced team work during many years.

Our construction key personnel proofed their commitment and performance to the management and company policy.

Our staff has their own grow up plan in the company and would be trained periodically. Loyalty is the great achievement which Pars Kayhan got from its personnel.

Pars Kayhan 's permanent manpower is based in its offices in Tehran, Ahwaz, Iraq and UAE.









HSE

The safety and health of its people, of local communities and its partners are a top priority for Pars Kayhan.

Pars Kayhan conducts its activities in accordance with all international agreements regulations, standards and conventions and all national laws and policies safeguarding the health and safety of workers.

Pars Kayhan takes an integrated approach to safeguarding health and safety in accordance with the principles of planning, prevention, protection and continuous improvement, investing all levels of the company with responsibility.

We have developed a comprehensive HSE Management System that meets the requirements of all applicable laws and is certified to international standards ISO 14001 and OHSAS 45001. Pars Kayhan's HSE risk management is based upon the principles of prevention, protection, awareness, promotion and participation. Its aim is to ensure the health and safety of workers and to protect the environment and public's general welfare.



QUALITYMANAGEMENT SYSTEM

Pars Kayhan implements its Quality Policy to become a first-class in the Middle East by providing customers products and services with the enterprise best quality.

The satisfaction of customers' needs is a primary goal for our company, achieved by implementing the principles and methods of operational excellence throughout the life cycle of every project.

A strong focus on the customer, motivation and implication of top management, a process-based approach and on-going improvement are the essential elements of our commitment to quality.

At Pars Kayhan, we are convinced that quality is primarily a matter of attitude; in fact, it is mostly about having the right attitude and constantly striving to achieve stakeholders' satisfaction.

This is achieved through on-going improvement of all processes and activities, striving to achieve mutual benefits with all stakeholders, including vendors and subcontractors, with a view to enhancing the ability of both to create value and meet customers' expectations.



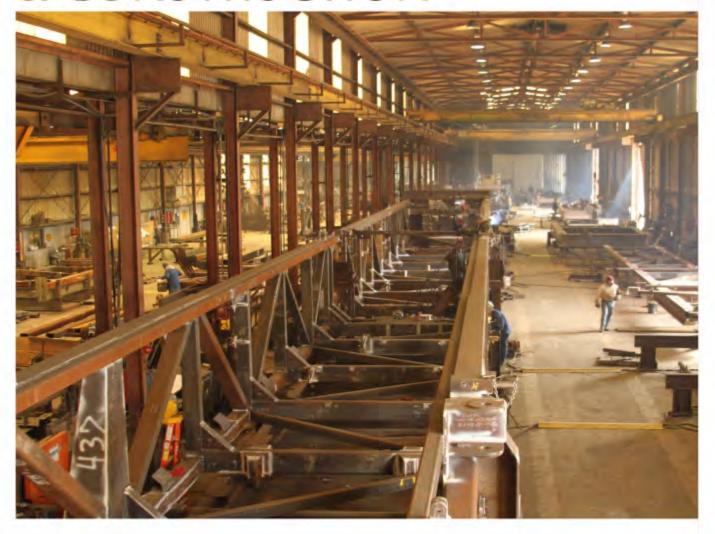


In all aspects of our work, we operate on the basis of internationally recognized standards, which are implemented in the company through a series of policies, procedures and appropriate best practices embedded in our management systems, including our Quality Management System and Quality Policy.

All these systems and policies are subject to audits, which provide Pars Kayhan management with assurance that effective and efficient processes are in place to ensure that activities aimed at on-going improvement are implemented to satisfy stakeholders' needs.

Pars Kayhan's Quality Management System achieved certification of compliance with standard ISO 9001 in the year 2009. Pars Kayhan is also Certified under standard ISO 3834-2:2005 (Quality requirements for manufacturing, installation in EPC Projects in Oil and Gas industry)

FABRICATION & CONSTRUCTION





Pars Kayhan has access to powerful and mobilized yards to provide fabrication solutions to Clients' capital projects. With the knowledge gained by self-performing fabrication. Pars Kayhan can effectively manage third parties to meet fabrication standards on projects in diverse industries.

We provide Clients the flexibility of offsite fabrication and the proven expertise to deliver the cost and compressed schedule benefits of modular construction for Client's capital projects .Self-perform fabrication yards may be adjacent to the site or at remote locations, reducing onsite craft densities and shifting work to inherently safer and more controlled work environments. Remote locations may offer cost and schedule advantages.

OUR SERVICES FOR FABRICATION BRIEFLY COVER BELOW ITEMS:

- Plate & Structure Fabrication Shops
- Spool Fabrication
- Skid Design and Fabrication
- Mechanical Package Assembly
- Risk Assessment
- Design Optimization
- Pre-Fabrication and Onsite Construction





MID & DOWNSTREAM SERVICES & PROJECTS

Pars Kayhan 's team with 25 years' experience has been engaged in design and construction of Production, Storage and Transporting Facilities, Process Plants, Export Terminals, Pipelines, Pump Stations, etc.

We have been involved in different stages of refinery development and possess extensive knowledge and expertise covering all stages and components of development of Petrochemical Units.

Today we can take care of every aspect of a project from initial concept to . techno-economic studies, front end detailed design, upgrades and optimization plans, hazard and risk analysis, procurement, project management and site supervision We build long-term relationships with . our clients, focusing on bringing every assignment to a successful completion, on time and with assigned budget .



TANK FARM AND OIL TERMINAL



Pars Kayhan has designed, fabricated, installed, repaired and maintained any kind of storage facilities, from the simple to the most sophisticated, providing a wide range of services and cost-effective solutions to key industries including refineries, terminals, LPG depots and more. We handle every project with skilled craftsmanship, the latest equipment, and a dedication to safety and customer satisfaction. Pars Kayhan's policy is to use the latest and most safe methods which bring high quality and speed. We have used various modern automatic welding machines in our projects and also have the knowledge of hydraulic jack-up method for erection of storage tanks.

Whether the tank or vessel is to be shop fabricated or field erected, our experienced professionals are at your service.

There are only a few contractors in the world who built Storage Tanks with the capacity of 1,000,000 BBL.

- Kharg Island Tank Farm / Kharg Island / EPC Including 4 floating roof crude oil storage tanks and facilities with the capacity of each 1,000,000 BBL (Client: IOTC)
- Exir Chemical Terminal / Mahshahr City / PC
 Including 18 sets of storage tanks and facility
 (Client: Exir Chemical & Odfjell Norway & Oil Tanking Germany)





PIPLINE & PUMP STATION

More than 500 KM Pipeline from 6 inches up to 56 inches and Pump Stations in EPC Schema, for Oil and Gas products, including Design, Stress analysis, Foundation and structural design, Supply, installation and commissioning in various locations in Iran and Iraq has performed by Pars Kayhan team. Pars Kayhan is Innovative and efficient main line Engineering and construction company for Oil and Gas, LPG, Petroleum products, natural gas Cross country piping line Engineering, which provide Complete range of Services. we have highly experienced Manpower, Resources and Equipment, which can construct pipe of any range, size, geography and terrain. Our Engineering and construction team always focus on quality, Safety and cost efficiency.

OUR SERVICES INCLUDE:

- Conceptualization and Feasibility Study of cross-country pipeline
- Basic Engineering & Details Engineering
- Pipe laying, Construction, Testing and Commissioning Including (Electrical, Instrumentation, Fire & Gas, Fiber-optics & Telecommunication)
- Pipe Coating
- Pigging Operation
- Horizontal Directional Drilling (HDD)

Pars Kayhan offers complete services with specialized and experience manpower, engineers and equipment for construction of major compressor stations, Pump stations, meter stations, LNG Facilities, Liquid handling facilities and CNG stations.





- South Azadegan Pipeline / Ahwaz Suth Azadegan Oil Field / EPC Including 110 Km pipeline from 6 inches up to 28 inches (Client: PEDEC)
- Bandar Abbas Jetties Project / Bandar Abbas / EPC
 Including 45 KM of 24 inches Pipeline and Loading-Unloading Facilities (Client: NIOEC)
- Strategic Pump Station / Khoram Abad / EPC Including Pump Station and Tank Farm (Client: IOPTC)
- Abadan Refinery Expansion Project / Abadan / EPC Including 40 KM of Pipeline and Pump Station Facilities (Client: NIOEC)







Refinery projects are normally billion-dollar developments designed around core refinery process units. We have been involved in different stages of refinery development. Petrochemicals are derived from petroleum sources like crude oil and natural gas. Pars Kayhan possesses extensive knowledge and expertise covering all stages and components of a petrochemical unit development including preparation of techno-economic feasibility reports, licensor selection, cost estimation as well as detailed engineering and overall project management.

PETROCHEMICAL & REFINERY







- Kermanshah Petrochemical Complex / Kermanshah / C (Client: Kermanshah Petrochemical Company)
- Tehran Refinery Cooling System / Tehran / EPC Including New Cooling System (Client: Tehran Refinery)
 Assaluyeh Gas Refineries No. 13,14,19 / Assaluyeh / EPC
- (Client: POGC)





- Parand Power Plant / Tehran / EPC Including BOP of Fuel (Client: Mapna)
- Damavand Power Plant / Tehran / EPC Including BOP of Fuel & Water (Client: Mapna)
- Orumiyeh Power Plant / Tehran / EPC Including BOP of Fuel (Client: Mapna)
- Sanandaj & Abadan Power Plant / Tehran / EPO Including BOP of Fuel (Client: Mapna)













& PROJECTS



UPSTREAM SERVICES& PROJECTS

As an E&P Company, Pars Kayhan provides a complete range of services for Geology, Geophysics, Geochemistry, Petrophysics, and Reservoir engineering as the keys to discover new hydrocarbon reservoirs and to unlocking the potential of its assets.

Pars Kayhan E&P section, carry out exploration, appraisal, development, and production as integrated services. Our blend of exploration and production solutions brings together reservoir evaluation, production optimization, asset integrity management, and fiscal measurement of hydrocarbons.

We fully support our clients to recover valuable resources in the most efficiently and sustainably way possible to promote the longevity of the fields, minimize environmental impact and optimize production at each stage of the field life cycle.

ENGINEERING AND TECHNICAL STUDIES OF SUBSURFACE

Master Development Plan (MDP) is the ultimate purpose of most full-field integrated studies, which is designed to maximize field production. In other words, optimizing the MDP is a real objective in terms of reservoir management and surface facilities performances. The integration of simulation results and surface versus sub-surface field behaviors is the success key for production improvement.

The MDP involves many specialists, such as reservoir engineers, simulation experts, field engineers, field architects, and drilling/completion engineers. The benefit, i.e.is a better understanding of the field potential through the improvement of wells' placing, completion, artificial lift, reduction of bottlenecking, and selecting the production scenario, and facilities.

An MDP includes the following parts:

Data Gathering

- Data Gathering
- Data Review, Qc & Validation
- Database Building

Reservoir Engineering Analysis

- Fluid Analysis
- Core Study
- Field Pressure Analysis
- Initial Condition Definition
- · Fluid Contact Level Movement
- Production Data Analysis
- · Material Balance
- Well Modelling

Surface Facilities Engineering

- Existing Facilities Evaluation
- Techno-Economic Study
- Process Facilities Requirement

Petro Physical Study

- Key Wells
- Other Wells

Geo Science Study

- Geophysical Study
- Geological Study
- Geo Mechanical Study
- Geo Modeling

Reservoir Simulation & Modelling

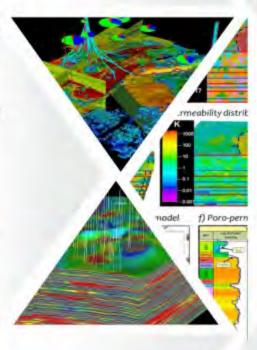
- Model Setup Initialization
- Model History Matching
- Forecast Scenarios

Drilling Engineering & Well Planning

- Review of Drilling History
- . Typical Drilling Programs
- Well Completion Program

Economic Evaluation

- Natural Depletion
- · Artificial lift
- Pressure Maintenance
- · Economic Analysis to Define Optimum Scenario
- . EOR Field Development Scenarios





CORE ANALYSIS AND FLUID ANALYSIS

Recognizing the reservoir rock is a critical benchmark for field development, production prediction, and employing the EOR/IOR methods. In this regard, the first step after drilling a well is to evaluate the petrophysical properties. To do so, the extracted cores are investigated through standard core analysis tests. More basic core analysis tests, such as porosimetry and permeability calculation, are called Routine Core Analysis (RCAL). Investigating more detailed information from rock petrophysical properties, such as relative permeability and capillary pressure, is conducted by Special Core Analysis (SCAL).

Physical fluid analysis is another essential laboratory test, that is required for designing any field development and production strategy. Critical information, such as gas oil ratio (GOR), oil formation volume factor (B_d), and oil viscosity, are some of the fluid properties determined to characterize the reservoir fluids. Knowing the PVT properties of the reservoir fluids, the following questions could be addressed.

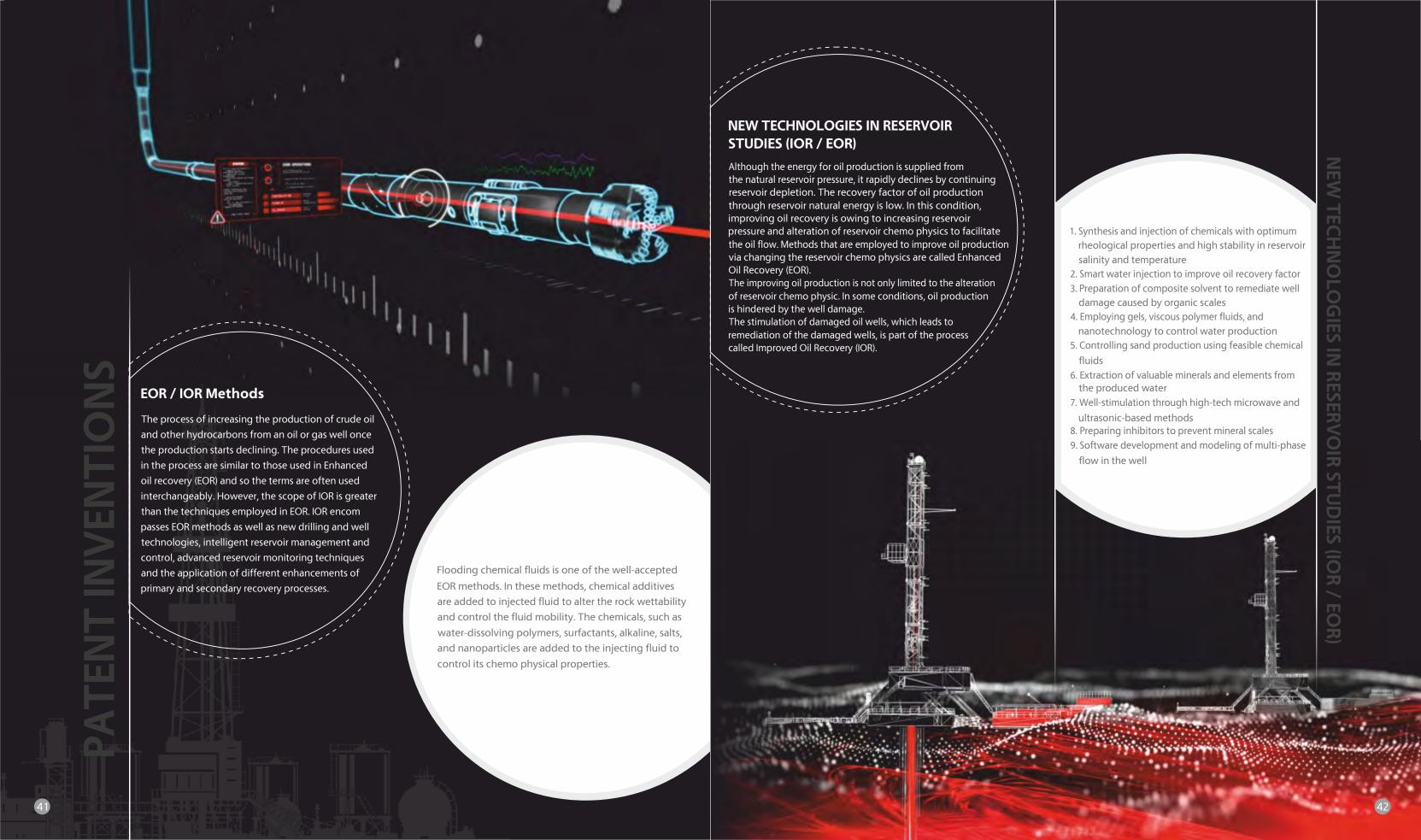
What is the reservoir fluid volume in the reservoir?
What is the optimized scenario for liquid production?
What is the best scenario for maintaining the reservoir pressure?

RCAL analysis . SCAL analysis . PVT analysis









DRILLING & COMPLETIONS (D&C) ENGINEERING/SERVICES

From traditional to unconventional drilling / completions, our goal is to provide more economical and efficient solutions and successful projects to our clients.

Some of our clients see us as experienced guides to help them navigate new or unfamiliar basins. Others turn to us for onsite execution, preferring to leverage high - quality, turnkey talent for a limited venture instead of expanding permanent internal staff.

RESULTS DRIVE CLIENT RETENTION

Ultimately, the results are what keep our clients coming back to PARS KAYHAN D&C time and again. Managing drilling economics is more important than ever. The knowledge and experience our team have acquired translate into gains in efficiency and effectiveness at the wellsite. Lower NPT, faster TD, reduced expendables.

Our team of drilling engineers and drilling services each segment engineers are able to assist with all aspects of the drilling process for vertical, directional, and horizontal wells including location evaluation and planning, facility design and construction, equipment selection and procurement, drilling optimization, regulatory filings, HSE management and our drilling new services (MPD/EOR).

PARS KAYHAN D&C ADVANTAGE

While every PARS KAYHAN D&C engineer/ drilling services brings vast experience to your project, each serves as a gateway to the collective knowledge base of the entire PARS KAYHAN organization.





WELL ENGINEERING

Well Design Optimization and Proactive Well Planning Develop Well Operations-Activity Plan, Well Integrity Management Plan, Risk Assessment, and Digital Drilling Activity Plan (for Driller).

ADVANCED DRILLING SERVICES

Perform offset well analysis and pre-drill analysis, fingerprinting to fine-tune drilling procedures and optimize drilling parameters well ahead of time using Thermal-Hydraulics-Mechanical (THM) software and services. Bottom-hole Hydraulics, improve wellbore integrity of conventional, HPHT, ERD, and Depleted reservoirs by Prototyping changing wellbore condition and drilling fluid behavior using TMFS software.

ADVANCED WELL SIMULATION THROUGHOUT WELL LIFE-CYCLE

Assist operators with dynamic well-kill, relief-well planning, Annular-Pressure Build-up, well clean-up, well-restart, and well integrity assessment simulations using Next-Generation transient-multiphase flow simulation (TMFS) software (LedaFlow for Well or OLGA for Well) and services. We deliver Well Liquid unloading, Well Restart, Well Clean-up simulation along with Well Integrity analysis as part of the Production Engineering service whereas Well Production and Performance simulation as part of the Well Operation Optimization.

REAL-TIME DRILLING OPTIMIZATION SOLUTION

Assist Operators with real-time solution based on Thermal-Hydraulics- Mechanical (THM) to autodetect the symptoms (leading to drilling events, NPT, ILT) and find optimization opportunities through simulation well ahead in time.



DRILLING & EOR ASSETS

1- Truck Mounted 1200 HP (Three available)
Fully auto pipe handler sys.
Iron-roughneck
Fast move
Max wind speed
Deep drill depth

2- Skid rigs (one 3000 HP / one 2000 HP available) Iron- Roughneck Auto Pipe Fast mixing

- 3- H2S Units (Four onshore & Two offshore units)
- 4- CTU (Two units)
- 5- Cementing/Acidizing HP pump truck (Two units)
- 6- Slick line Unit (Two units)









Well Engineering/ Operations / Drilling Services Projects

- 1 Providing of Coiled-Tubing Service (Iran- Onshore))
- 2 Providing of H2S Service (Iran Onshore- Offshore)
- Providing of Truck Mounted/ Skid Rig (Iran Onshore)
- 4 Providing of Cementing Pump truck Service (Iran Onshore)
- 5 Providing of Slick Line Service (Iran Offshore)
- 6 Iran onshore Truck mounted rig Project
 (Well Planning/ Operations Exploration (3 wells))

INTERNATIONAL PROJECTS

Strategic Gas Pipeline from Basra to Najaf Complementary works plus ESD and MOV stations in EPC Schema (Client: BOC) / Iraq

9 Sets of Storage tanks Fixed and Floating Roof with Accessories in Basra and Nassiriya Refineries (Client: SRC) / Iraq

> 4 Sets of Storage Tanks Fixed and Floating Roof with Accessories in Al Daura Refinery (Client: HEESCO) / Iraq

Drilling Engineering Planning (Nigeria Deep Water HPHT ENI-Agip Project)

Drilling Engineering Planning/
Operations – Using of MPD/ Hugh
Loss HP (Russia/ Kazakhstan North
Caspian Sea Consortium of TOTAL/
ENI/EXXON/INPEX/BP/STATOIL)

Well Planning/ Operations Exploration/ Development (24 wells) (Qatar/ Iran HP OMV Offshore Jack up Project)

Acid Fracturing & Drilling Services in Baku (Client: BP) / Azerbaijan



PARS KAYHAN GROUP OF COMPANIES



MIDDLE EAST ALMAAS DRILL CO. (MADCO)

MADCO utilizes some of the best managers and engineers whose qualifications include outstanding excellence coupled with long practical international experiences in the subject of Sub-surface (G&G, Seismic, Reservoir Modelling, Petroleum), Drilling & Completion Engineering and Production of oil and gas (Green and Brown) fields.



PARSIS SOLUTION CO.

Established in 2016, with the aim of supplying high quality product through international manufacturers for local market. Our main products are Mechanical equipment and Packages, Piping Material & Instrument Packages. Parsis has supplied and successfully delivered various products from well-known manufacturers in Europe & East Asia to major Iranian oil Clients such as NISOC, NOOC, PEDEC and also EPC contractors as well.



PARS KAYHAN TAJHIZ (PKT)

PKT provides high quality services for Design, Assembly, fabrication and production of oil and energy equipment. PKT shop located in Parand city near Tehran and equipped for fabrication of tanks, skids, mechanical packages, piping spools and ...



PARS KAYHAN IRAQ BRANCH (PKI)

Pars Kayhan's Iraq branch has two offices in Basra and Baghdad. PKI executed various contracts successfully in Iraq and qualified by Iraq oil ministry and affiliated companies.

CERTIFICATIONS & QUALIFICATIONS

E&P GRADE



Grade 1 in Oil & Gas EPC CONSTRACTING







Grade 1 in Oil & Gas Construction

Golden Grade for Commercial works









- E&P Grade from Iran Oil Ministry
- Knowhow Grade for EPC projects in Oil and Gas Project (Iran Presidency / Deputy of Planning)
- EPC contracting Grade 1 for Oil Projects (Iran Presidency / Deputy of Planning)
- Engineering Consultancy Grade 1 for Oil Projects (Iran Presidency / Deputy of Planning)
- Contracting Grade 1 for Oil Projects (Iran Presidency / Deputy of Planning)

Memberships



Association of petroleum industry engineering and construction companies



Association of construction companies



International Consultants and Contractors Association of Iran



Tehran Chamber of Commerce, Industries, Mines & Agriculture



Iran Oil ministry and Affiliated Companies (NIOC, NIOEC, PEDEC, IOTC, NIGC,)



Iraq Oil Ministry and Affiliated Companies (BOC, SGC, TOC, MOC, MDOC, HEESCO, SCOP)



Awards

- Best Company of Iran For Exporting Technical and Engineering Services in 2019
- Best Company of Iran For Exporting Technical and Engineering Services in 2020



