PARS DRILLING FLUIDS

PDF
Pars Drilling Fluids

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Business Strategic Policy Orientation

Drilling fluids are made of the combination of materials with different properties suspended in water or hydrocarbon surroundings. It is a delicate and complex issue to reach appropriate drilling fluids formulation for the implementation of multiple aims, which are sometimes contradictory, together with its rotation in the depth of earth and connecting layers composed of various lithology under pressure and high temperature. Although it is estimated that the costs pertaining to drilling fluids approximately allocate 5 to 10 per cent of the drilling costs of a well, a great percentage of drilling operation problems stem from the negative effects of drilling fluids.

For this reason, engineering, development and execution of drilling fluids is one of the mysterious sciences. Apart from their multiple role, remarkable issues in the engineering of drilling fluids influence drilling economy through ROP increase, prevention of damages to formations for the continuation of proper drilling and more important than that prevention of damage to the reservoir due to large production. To attain these aims, international oil companies the provision of integrated services of drilling fluids ranging from design, engineering, and supply to operational execution are regarded considerable. The cycle that is undoubtedly the result of ten years of experience and optimization in the drilling fluids industry of international companies includes the following stages:

- Design, engineering and planning
- Supply and maintenance of materials
- Development and execution of fluid operations in drilling rigs' site
- Performance supervision, HSE and QC through reference laboratories
- Continual research in relation with the operations
- Refinery and recycling of drilling fluids

At the present, the integrated position of drilling fluids encompassing design, engineering, operational execution, refinery and recycling is provided as a comprehensive plan (Total Fluids Management-TFM). Undeniably, such coordination among different actions with the same goal under one single management result in various achievements which some of them are as follows:

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- Optimal and close relationship between execution and technical-engineering in order to achieve operation supervision and transfer of operational problems to technical-engineering for investigation and study.
- Research on operational problems after technical-engineering investigations in order to achieve methods for productivity enhancement in the form of making formulations or production of required additives.
- Developing high-quality additives proportionate to drilling fluids system through performing QC in the company's laboratories.
- The improvement of staff capabilities (especially drilling fluids engineers) through progressive trainings.
- The execution of HSE and QC in the departments of the company.
- Making use of technical-engineering and research learnt lessons in drilling fluids design, engineering and planning in new projects in the form of continuous improvement.
- Ongoing supervision and continuous reports to top management in order to identify the strengths and weaknesses of the company's operations.
- Useful and easy company's access to modern technologies through establishing relationships among companies and international research institutes and employing these technologies in the company's operational research.

A glance at the manner of providing drilling services in the past years indicates that nearly 60 to 70 percent of our country's projects are conducted separately. In addition, beside the integrated view of service execution, the client's supervision share and services provider's share of 27 execution and quality enhancement are considerable and they require revision.

Meanwhile, parallel to technical and engineering structures QC, operation, research, development and specialized training are notably important and support this complex but seemingly simple industry. International companies consider principled research and relations with universities for industrial research and specialized training for executive-level model for technical and economic optimization. In this regard, the identification of knowledge based structures can result in sustainable development in drilling fluids industry so that it could dynamically lead our present and future drilling industry needs toward optimal and executive solutions.

Koorosh Tahmasbi (PhD)

Founder & Chairman

Company Policy & Statements

Code of Conduct

Our People are our most valuable resources. Through our human resource goal, we have defined the responsibility for developing that resource, our commitment to our people is to be the benchmark company to work for.

We will accomplish this by promoting an environment where:

- Fair and honest treatment of every individual is the norm
- Communication of opinions is encouraged
- We will attract, develop and promote the most qualified people
- There exists a balance between family, community and the company
- We recognize and reward proper behavior
- We encourage a positive approach to work
- Happiness and hard work go hand in hand
- We conduct ourselves with uncompromising honesty
- We commit to supporting the team environment

Sustainability Policy

Sustainability, according to the Cambridge online dictionary it is 'the idea that goods and services should be produced in ways that do not use resources that cannot be replaced and that do not damage the environment'.

We at PDF take this issue very seriously as we understand that resources are finite and should be kept for our generations to come so that they can also have a prosperous future.

PDF has taken serious steps in developing specialty products such as ROP enhancers and Stabilizers to increase performance and reduce the use of harmful chemicals for our environment.

Our operation team use mud skids and diligently clean the rig site area upon the completion of our operations to make sure we do not contaminate the soil and leave no footprint behind.

Water conservation is of utmost importance in a dry country such as Iran so we understand the value of water. We therefore try to use recycle water as much as possible rather than using fresh water in our fluids. Furthermore, we promote the transfer and re-usage of our drilling fluids, which is water based, to other rigs in the site.

The provision of our Waste Management services also helps sustain a clean operation and plays a major role in recovery. Our approach to this service is via Total Fluids Management (TFM): the integrated position of Drilling Fluids, Waste Management, Solids Control and Production Enhancement which results in the reduction of drilling fluids and waste treatment costs.

Mission Statement

To develop and deliver innovative services which exceeds our clients' expectations in a responsive and professional manner, undertaken in a highly ethical work environment that provides long-term employment and development for all employees.

Vision Statement

To be recognized as a progressive & innovative company in supply & production of drilling fluids and related services with world class standards in Iran & the region.

Timeline

2026
- Provision of Drilling Fluids and Waste Management for South Pars Phase 11A (PETROPARS)
- Provision of Waste Management Service for Sohrab Oil Field, (DANA)
- Provision of Brine Filtration Service for Sohrab Oil Field, (DANA)

2025
- Provision of Drilling Fluids and Waste Management for Sohrab Oil Field (DANA)
- Provision of Waste Management Service for Arvandan Oil Field, (Arvandan)

2024
- Provision of Drilling Fluids Services for South Pars Infill, (PECO)
- Provision of Drilling Fluids Services for South Pars Infill, (DCI)
- Provision of Drilling Fluids and Waste Management Service for Cheshmeh Khosh Oil Field, (TDDC)
- Provision of Waste Management Service for Masjid Soleiman/Maroun Oil Field, (NDCO)

2023
- Provision of Drilling Fluids Services for South Pars 12C, (POGC)

2022
- Provision of Drilling Fluids Services for South Pars Phase 17, POGC
- Provision of Drilling Fluids Services for Cheshmeh Khosh, TDDS
- Provision of Drilling Fluids Services for Cheshmeh Khosh, POSCO

2021
- Provision of Drilling Fluids Services for South Pars Phase 16, IOEC
- Provision of Drilling Fluids Services for South Pars Phase 21, DCI
- Provision of Drilling Fluids Services for South Pars Phase 18B, DCI
- Provision of Drilling Fluids Services for South Azadegan, PEDEC

2020
- Provision of Drilling Fluids Services for Yalda Exploration Offshore Well, DCI
- Provision of Drilling Fluids Services for South Pars Gas Well Phase 11, PETROPARS
- Provision of Drilling Fluids Services for Ahvaz Oil Field, OEID

2019
- Provision of Drilling Fluids Services for South Pars Phase 5, DCI
- Provision of Drilling Fluids Services for South Pars Phase 22, PGFK

2018
- Provision of Drilling Fluids Services for South Pars Phase 18B, POGC
- Provision of Drilling Fluids Services for Hendijan Oil Field, DCI
- Provision of Drilling Fluids Services for South Azadegan Oil Field, PEDEC
- Establishing Production Enhancement Department

2017
- Provision of Drilling Fluids Services for South Pars Phase 14B, IOEC
- Provision of Drilling Fluids Services for South Pars Phase 14D, IOEC
- Cooperating with SPE International & APOGCE Technical Committee

2016
- Recognized as the only Drilling Fluids Service Company in Iran by World Oil 2016

2015
- Organized 2nd International Advance Drilling Fluids Technology Conference
- Presentation of Technical Paper in 15th APOGC in Indonesia
- Presentation of Technical Paper in 9th IPTC in Qatar
- Selected as 12 rank in TOPEX in Iran
- Approved in Iran Lab Network

2014
- Approved as 1st Reference Laboratory by NACI and Standard Organization of Iran
- Approved as 1st Knowledge Based Company in Drilling Fluids Services by Government
- MOU with Sharif University of Technology
- 1st IADFT Conference by Research Department
- Provision of Drilling Fluids Services for SPD13B & 23

2013
- Developing Ahwaz Base Laboratory
- Developing Kish Base Laboratory
- Provision of Drilling Fluids Services for SPD19A, 19B
- Establishing Waste Management Service

2012
- Expanding Tehran Laboratory
- Expanding Research Center & Registered in Khuzestan Technology Park

2011
- Developing LUB-DRILL Fluids System to Drill Horizontal and High Deviated Wells
- Expanding Kish Logistic Based by Bulk Plant and Accessories
- Provision of Drilling Fluids Services for SPD17B & 18B

2010
- Provision of Drilling Fluids Service for 27 wells in North Azadegan, CNPCI
- Developing CLAY-BOND Drilling Fluids Systems to Prevent Bit Balling and Enhancing ROP

2009
- Approved by National Iranian South Oil Company (NISOC) for provision of GLYCO-DRILL FLUID system in Ahwaz Oil Field to replace OBM

2008
- Established 1st Advance Drilling Fluids School for NIDC
- Provision of Drilling Fluids Material for YADAVARN Development Oil Field

2007
- Registered in ENI Approved Vendor List in Phases 4 & 5 – Workover Operation
- Registered in NIDC and NIOC EXP Vendor Lists for Provision of Drilling Fluids

2006
- Registered as a Service Company in ENI for Darquin Development Oil Field
- Successfully Completed 4 wells for ENI in Darquin Oil Field
- Approved in Norsk Hydro Vendor List for Azar Project

2005
- Supplied Drilling Fluids for Azar Exploration Oil Field
- Supplied Drilling Fluids for Darquin Development Oil Field
- Expanded our Research Department in Collaboration with Petroleum University of Technology

2004
- Prepared the 1st Drilling Fluids Material Encyclopedia
- Registered in Halliburton & Baker Hughes AVL

2003
- Established as an Independent Private Local Drilling Fluids Company
- Established the 1st Drilling Fluids Laboratory in Private Sector

Pars Drilling Fluids Overview

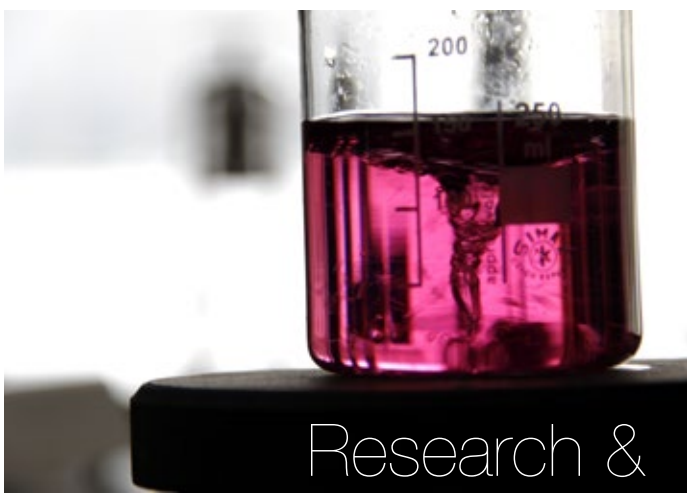
Pars Drilling Fluids (PDF) was established in 2002 as a private drilling fluids service company. Our organization has been recognized by our government as the first and onl y 'Industrial Knowledge-Based' company within the Iranian Drilling Fluids industry. This is mainly due to our practical research activities in the drilling industry to overcome drilling problems during the past decade. Many efforts have been taken to establish an ISO/IEC 17025:2005 laboratory which is certified by the Iranian Standard Organization. This demonstrates our focus on quality assurance, technical capabilities and services. Our laboratory acts as a third party to provide quality control services and also synergizes with our R&D department. Our primary intent and vision is to act as a service company to provide Total Fluids Management. In order to be a service provider, PDF has adopted a service analogy in terms of emphasizing on continuous R&D, setting ties with technically capable companies, connecting the industry to academic intuitions and setting benchmarks for optimizing performance. Service is the cornerstone of our organization.

Company Services

- Drilling Fluids Engineering & Service
- Solids Control & Waste Management
- Specialty Chemicals Production & Supply
- Formation Damage Mitigation
- Production Enhancement
- Laboratory & QC Services
- Training & Mud Schools
- Research & Development

Laboratory &
Quality Control

Solids Control



Research &
Development

Supply ChainManagement

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Waste Management

Mud Engineering & Operation

Mud Engineering & Operation

Supply Chain Management

Health, Safety & Environment

HSE Policy

Pars Drilling Fluids has established certain basic HSE policies to outline broad standards of conduct in specific areas with high risk of company operations. Seniors and managers are responsible for implementing the more detailed procedures to ensure compliance of all personnel with these policies, however, all employees are responsible and trained.

The following policies are included in Pars Drilling Fluids (PDF) HSE policy statements:

- Health and Safety Policy
- Environmental Policy
- P.P.E. Policy
- Training Policy
- Land transport Policy
- Drug and Alcohol Prohibition Policy
- Smoking Prohibition Policy

Every reasonable effort has been made to safeguard lives, prevent various types of accidents/catastrophes and implement the best environmentally well-known practices.

We are granted ISO 45001:2017, ISO 14001:2015 & HSE-MS

IMS(Integrated Management System) Processes Are:

- Identifying policies, goals, objectives, plans and actions
- Hazard identification and risk management
- Hazard observation and NCR system
- Compliance with rules, requirements & regulations
- All personnel communication and involvement
- Emergency Response Plans
- Employees health management
- P.P.E management
- Incident management
- Management of change
- HSE culture improving

The main goal of measuring health, safety, and environmental performance is to assess the progress and current status of PDF's strategies, processes, and activities aimed at managing HSE risks. Collecting this information is crucial for maintaining reliable operations, as it helps define and control risks. It also provides insight into how the system functions in practice, highlights areas needing improvement, serves as a foundation for continuous enhancement, and offers feedback and motivation.

PDF operates in both onshore and offshore projects. We have therefore set separate targets and measure the performance of the two sections separately due to the nature of different operations.

HSE's goals at PDF are:

Less than 10 Number of Hazard observation card reported / month

1 HSE inspection / month

1 HSE training / month

1 HSE Drill / month

1 HSE Waste Management / month

HSE Culture

PDF is committed to achieving our ultimate HSE goal of zero injuries and damage to personnel, the environment, and assets. We aim to adapt to changes and manage our activities safely and effectively. To support this vision, we are working to establish a risk-based system grounded in systematic thinking, ensuring that our HSE processes are implemented correctly.

We know that Safety Culture is a multi-dimensional construct. To capture the common and key-elements of the various leading safety culture frameworks, we focus on the following elements:

Commitment and Leadership
This section highlights how each PDF member maintains a positive attitude towards safety values and acknowledges their significance. Top management demonstrates strong commitment, leadership, and personal involvement in health, safety, and environmental issues, ensuring that the necessary resources are available to achieve PDF's HSE objectives.

Behavior-Based Safety
PDF's Behavior-Based Safety (BBS) initiative is founded on principles that encourage all personnel to engage, motivate, assist, reinforce, and sustain safe behaviors. This initiative requires ongoing promotion from management to achieve sustainable, positive outcomes.

Unsafe Work Stop

To support safe work practices, all PDF personnel have the following responsibilities:

- They have the authority to stop work immediately, without fear of reprisal, if they believe that a situation or action poses a danger to themselves, their coworkers, or the environment.
- They are responsible for reporting any unsafe activities or conditions, including those that led to a Stop Work order.
- A system is in place to notify the relevant parties and supervisors at the location of the issue.

Employee Involvement
We believe that engaging employees positively impacts HSE performance. Every employee at PDF plays a vital role, and promoting "involvement" is one of our HSE goals. To enhance this, we hold regular meetings every two weeks to discuss HSE issues, provide feedback, and deliver training to middle and top management.

Continuous Improvement
It involves applying strategies that foster learning and adaptability to change. We practice this skill by learning through our regular work, collaborating with coworkers, and accessing both on-site and off-site training opportunities.

Quality Assurance

The aim of PDF Quality Assurance Policy is to affirm PDF's commitment to maintain a high standard of quality in the way we work, the services we deliver, our relationships with staff and stakeholders and ensure continual improvement.

PDF's QA policy is designed to eliminate deficiencies and inaccuracies and to ensure high quality standards. The assurance of quality is fundamental for all work undertaken by PDF and is adhered by all our staff in their work. To that effect PDF shall:

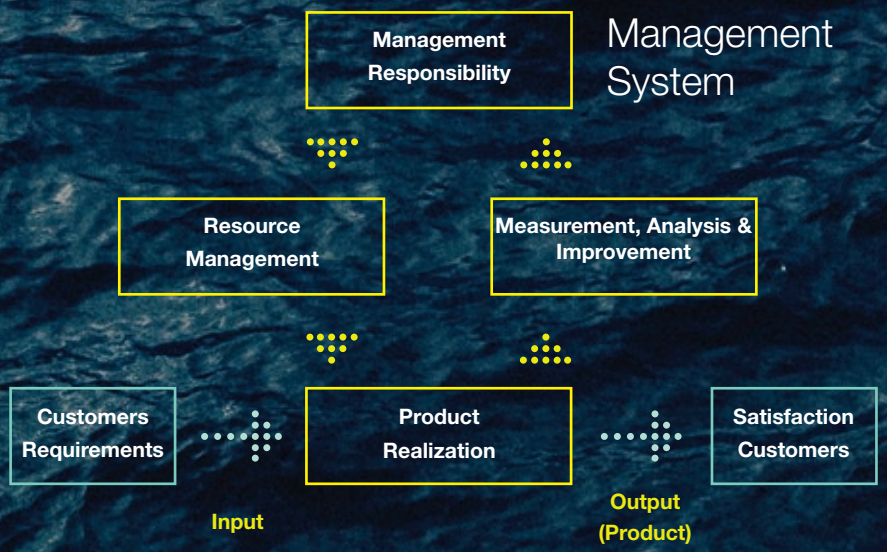
- Set concise policies, procedures and regulations to maintain quality consistency in our work methodology.
- Ensure that all policies, procedures, relevant regulations and codes of practice are implemented and systematically reviewed to reflect our values.
- Regularly monitor and measure the quality of work methods, outputs and outcomes in order to ensure high quality standards and obtain the best value for our customers via continuous improvement.

Quality Assurance Framework

PDF QA framework follows the International Organization of Standards, ISO/IEC 17025, ISO 14001, OHSAS 18001 & ISO 9001:2017 – Quality Management Systems. Our standards are based on the following eight quality management principles:

1. **Customer and Feedback Focused**
2. **Leadership**
3. **Involvement of Human Resources**
4. **Process Approach**
5. **System Approach to Management**
6. **Continual Improvement**
7. **Mutually Beneficial Supplier Relationships**

The following model illustrates the framework: Continual Improvement of the Quality Management System



Value Adding Activity Information Flow

Quality Assurance Methodology

PDF QA employs the Plan-Do-Check-Act (PDCA) methodology to apply the principles of the international standards framework.

PLAN: Establish the objectives and processes necessary to deliver results in accordance with members' and candidates' requirements and the organization's policies.

DO: Implement the processes.

CHECK: Monitor and measure processes and product against policies, objectives and requirements for the services/product and report the results.

ACT: Take actions to continually improve process performance.

NCR System

To ascertain quality, we are using the NCR (Non Conformity Report) system systematically. In this system, any member of PDF can generate an NCR which is then recorded, processed, monitored and the conclusions are implemented to remedy the non-conformity.

Human Resource

Nobel Prize-winning economist Gray s. Becker, who coined the term “human capital” says that “the basic resource in any company is people.”
At Pars Drilling Fluids we believe that the most successful companies and the most successful countries will be those that manage human capital in the most effective and efficient manner. For achieving this goal, some key functions have been defined for our human resource management department in PDF:

- Recruiting people based on their competency models which is tailored for each job
- Providing training to our employees according to their position and the requirements of our organization
- Performance Appraisals
- Maintaining a healthy work atmosphere and creating a friendly work culture
- Developing public relations

Our human resource department is responsible to manage our 150 people including international and national professionals, experts, engineers and fresh graduates. Around 60% of our employees are based outside our headquarters responsible for operational services in offshore, onshore and our logistics bases. A remote and dynamic HRM system has been devised to address their issues given the distance between us.

Supporting and leading fresh graduates and talents beside professionals is our strategy to build a dynamic environment and improve our service performance by increasing human resource efficiency. Many of our mud engineers have been developed from our own mud training programs which gives them the opportunity to develop their skills in the drilling fluids oil and gas industry.

To sum up, we consider our human resources as our primary asset and we strive to continuously help further develop their capabilities and principals with the help of our Re-EDUCATION and HRM systems.

Pars Drilling Fluids TOP Chart

- Board of Directors
- Advisors
- Managing Director
  - QA, Systems & Methods
    - Quality Assurance & Management Rep.
    - ICT Dep.
    - Deputy of Systems & Methods
  - HSE
  - Finance, Accounting & Contracts
  - Techical, Engineering & Research
    - Engineering
    - Tender & Proposals
    - Lab 17025
    - Oil Field Chemicals Reasearch & Develpment
    - QC
    - Drilling Fluids Technology & Develpment
    - Deputy of Technical, Engineering & Research
  - Project Control
  - Drilling Fluids Services
    - Onshore
    - Offshore
    - Drilling Flluids Services
  - Drilling Waste Management Services
  - Marketing & Business Development
  - Procurement, Logistic & Bases
    - Ahvaz Logistic Base
    - Kish Logistic Base
    - Zavie Production Plant
    - Deputy of Procurement, Logistic & Bases
  - Admin & HR Dep.
    - Admin & HR
    - Training
    - Admin & HR Dep.

Supply Chain Management

Managing our supply chain is one of the most important issues to sustain an efficient drilling operation. Failure to manage the supply chain has severe ramifications for us and our operators making all the difference in efficiency and profits. Issues such as NPTs or drilling days pending on mud system arrival are expensive consequences to deal with and such issues are prevented through our systematic approach to supply chain management. We use SharePoint solutions to integrate the entire chain under one umbrella. This systematic method provides high transparency and traceability.

We have created strong ethical relations with our suppliers and logistic companies making sure they comprehend and adhere to our standards. Our suppliers are clearly informed of our policies and we evaluate them on a dynamic basis via supplier questionnaires and visits with the help of our HSE & QA programs.

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With the help of our logistic partners, PDF is readily available to provide goods and services to any location in Iran at a high paste. NCR (non-conformity reports) will be generated to convey valuable feedback to our vendors/logistic companies to aid them improve their conditions.

To support our supply chain activities, the following facilities are in place:

Equipment & Facilities in Ahwaz Base (Onshore):

- Strategic warehouse number 1 – 4000 square meter
- Strategic warehouse number 2- 6000 square meter
- Supplementary mud filtration and rigs maintenance systems
- Fully-equipped professional drilling fluids laboratory for quality control
- Research office in Science and Technology Park in Khuzestan

Equipment & Facilities in Kish Base (Offshore):

- Strategic warehouse number 1- 1250 square meter
- Strategic warehouse number 2- 800 square meter
- Complete system for stocking Barite and Bentonite in bulk (bulk plant) with the capacity of 400 MT
- Fully-equipped professional drilling fluids laboratory for quality control

Production Facility

This production site was established by Pars Drilling Fluids for producing and/or modifying drilling fluid chemical and mineral additives in order to:

- Supply higher quality drilling fluid additives within drilling industry;
- Achieve self-sufficiency in supplying drilling fluid additives;
- Supply drilling fluid additives more time-cost-effectively;
- Supply drilling fluid additives in better packaging.

The site is located on Zavieh industrial area which has a strategic situation regarding 85 km from Tehran, 35 kmfrom Saveh Special Economic Zone and Customs, and 40 km from IKIA. Zavieh production site operates under the permission granted from Ministry of Industry, Mine and Trade as Production License.

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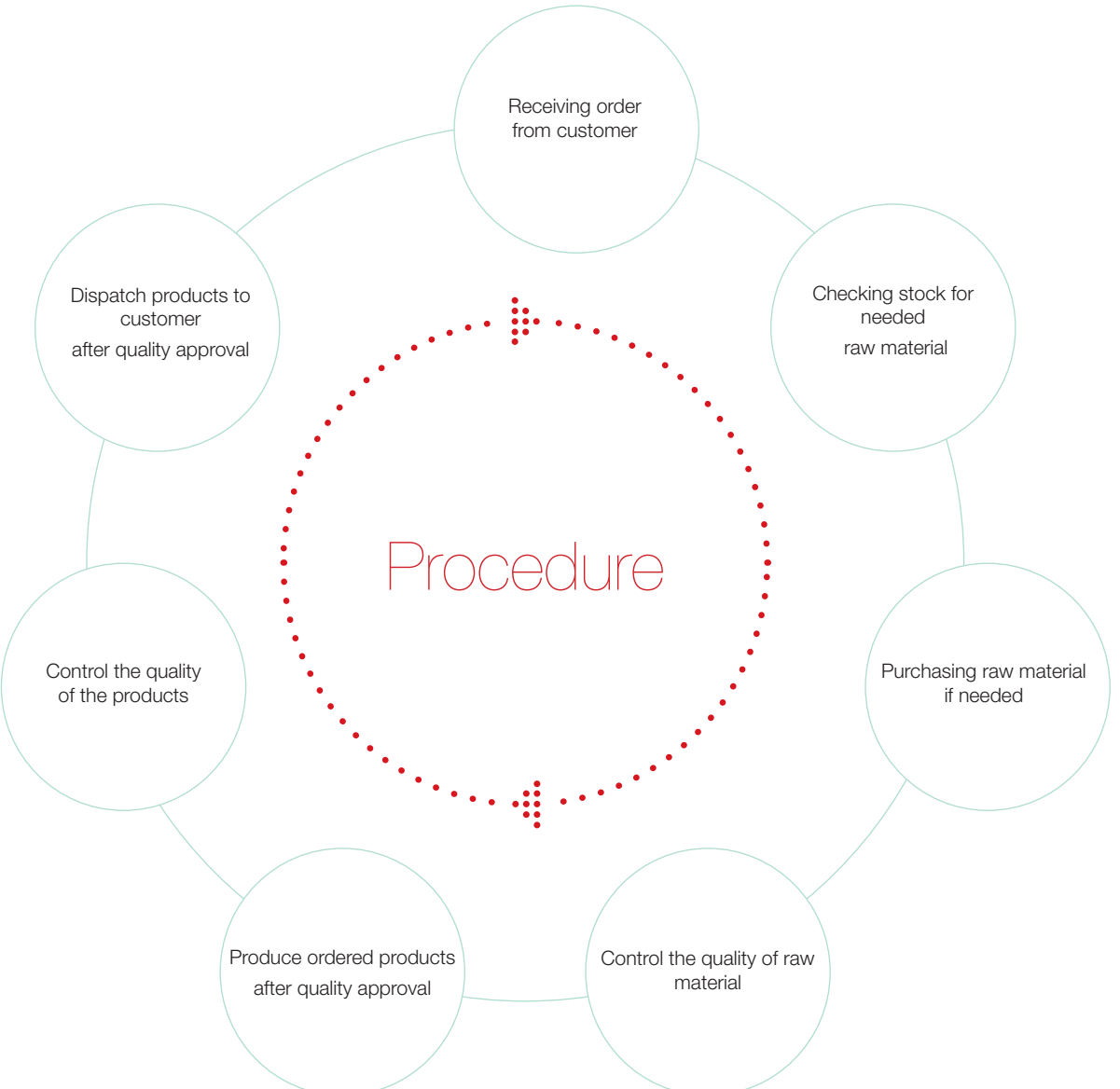
Final products of Zavieh production site are formulated by Research and Development Department and designed to be added to drilling fluid systems both in Oil and Gas drilling industry and Mining drilling projects. As mentioned earlier, there are two types of products as the outcome of modification or production process: Liquid (including gel) and powder. Liquid products are discharged and packed in 5 gallon or 55 gallon containers. 5 gallon containers are poly ethylene and acid proof. 55 gallon containers are metal with anti-corrosive inside coating or poly ethylene with pressure valves on their lids. All containers are sealed before dispatching to customer. Powder products are discharged and packed in paper or plastic sacks of 12.5 or 25 kg. Paper sacks have 4 layers and a valve which enables the sack to be sealed automatically. Plastic sacks are normally used for repacking some material and sealed manually. A colored label is installed on each container and sack on which the name of product, a short description, the weight or volume of container, batch number, production and expiration dates, storage and HSE considerations and danger diamond is printed. Unique series of batch numbers is allocated to each product. Products' batch numbers change when:

- The formulation changes;
- Raw materials' batch numbers change;
- Certain time period passes from old raw materials batches;
- Production conditions change.

Both liquid and powder products are put and arranged on wooden pallets after label installation: 4*55 gallon drums, 32*5 gallon cans, and 40*12.5 or 25 kilogram sacks on a pallet. The pallet with its content then goes to packaging unit where it is covered with nylon film stretch on stretch wrapping machine and strapped.



Projects & Experiences

- 150 No. of Drilling Fluids Offshore Services
- 92 No. of Drilling Fluids Onshore Services
- 21 No. of Drilling Fluids Onshore HPHT
- 90 Drilling Fluids Material Supply
- 83 No. of Waste Management Services
- 134 No. Completion Fluid/Brine FIlteration Services

Yadavaran Oil Field
Marun Oil Field
Darquin Oil Field
North Azadegan Oil Field
South Azadegan Oil Field
North Yaran Oil Field
South Yaran Oil Field
South Pars Gas Field

Active Contracts & Projects

Drilling Fluids Material Supply and Engineering Services – Offshore Projects

Year	Oil Company	Contractor/Operator	Project Name	Well Type	Depth (m)	Temperature (F)	No. of Wells	Number of Active Rigs
2025- Current	POGC	PETROPARS	South Pars - Phase 11A	Vertical & Deviated	3400±400	±210	12	1 Offshore Rig
2024- Current	POGC	PECO	Infill	Vertical & Deviated	3200±400	±210	4	1 Offshore Rig
2020- Current	POGC	DCI	Infill	Vertical & Deviated	3400±400	±210	9	1 Offshore Rig
2020- Current	POGC	PETROPARS	South Pars Phase 11B	Vertical & Deviated	3400±400	±210	12	1 Offshore Rig

Drilling Fluids Material Supply and Engineering Services – Onshore Projects

Year	Oil Company	Contractor/Operator	Project Name	Well Type	Depth (m)	Temperature (F)	No. of Wells	Number of Active Rigs
2024- Current	PEDEC	DANA SOHRAB	Sohrab	Horizontal & Vertical	3800±300	180-220	6 Wells	1 Onshore Rig
2024- Current	PEDEC- ZNV	TDDS	Cheshme Khosh	Injection/Drilling	3900-4300	200	6 Wells	3 Onshore Rigs

Waste Management Services

Year	Oil Company	Contractor/Operator	Project Name	No. of Wells	Number of Active Rigs
2026- Current	PEDEC	DANA PETRO SOHRAB	Sohrab	6 Wells	1 Onshore Rig
2025- Current	Arvandan	KOGC	Arvand	2 Wells	1 Onshore Rig
2024- Current	ZNV	TDDC	Cheshmeh Khosh	6 Wells	3 Onshore Rigs
2024- Current	NISOC	NDCO	Masjed Soleiman	2 Wells	2 Onshore Rigs

Brine FIlteration Services

Year	Oil Company	Contractor/Operator	Project Name	No. of Wells	Number of Active Rigs
2026- Current	PEDEC	DANA PETRO SOHRAB	Sohrab	6 Wells	1 Onshore Rigs
2026- Current	ZNV	TDDC	Cheshmeh Khosh	6 Wells	3 Onshore Rigs

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Completed Projects

Drilling Fluids Material Supply and Engineering Services – Offshore Projects

Year	Oil Company	Contractor/Operator	Project Name	Well Type	Depth (m)	Temperature (F)	No. of Wells	Number of Active Rigs
2023	POGC	PETROPARS	South Pars Phase 12C	Abandonement	3400-3800	±210	12 Wells	1 Offshore Rig
2022	POGC	DANA	South Pars Phase 17	Workover	3135	±210	2 Wells	1 Offshore Rig
2021	POGC	IOEC	South Pars Phase 16	Appraisal	3320	±210	1 Well	1 Offshore Rig
2021	POGC	DCI	South Pars Phase 21	Workover	3135	±210	1 Well	1 Offshore Rig
2021	POGC	DCI	South Pars Phase 18B	Workover	3135	±210	1 Well	1 Offshore Rig
2020	POGC	DCI	Yalda	Exploration	4300±500	±260	1 Well	1 Offshore Rig
2019	POGC	DCI	South Pars Phase 5	Workover	4300±500	±235	12 Wells	1 Offshore Rig
2019	POGC	PGFK	South Pars Phase 22	Completion	4300±500	±235	7 Wells	1 Offshore Rig
2018	POGC	DANA	South Pars Phase 18B	High Deviated - Sidetracking	4300±500	±240	1 Well	1 Offshore Rig

Drilling Fluids Material Supply and Engineering Services – Onshore Projects

Year	Oil Company	Contractor/Operator	Project Name	Well Type	Depth (m)	Temperature (F)	No. of Wells	Number of Active Rigs
2022-2024	PEDEC-ZNV	POSCO	Cheshmeh Khosh	Work-over Sidetrack/Drilling	3900-4300	200	4 Wells	2 Onshore Rigs
2021-2022	PEDEC	TDDC	South Azadegan	Horizontal & High Deviated	3800±300	180-220	2 Wells	1 Onshore Rig
2020-2022	NISOC	OEID	Ahwaz	Horizontal & High Deviated	3150±50	200	15 Wells	2 Onshore Rigs
2018-2019	PEDEC	PERSIA	South Azadegan	Horizontal & Vertical	3800±300	180-220	5 Wells	3 Onshore Rigs
2017-2018	IOOC	DCI	Dorood Re-Entry	Horizontal & Vertical	5000±300	±250	1 Well	1 Onshore Rig
2017	PEDEC	PEDEX	South Azadegan	Horizontal & Vertical	3800±300	180-220	2 Wells	2 Onshore Rigs

Material Supply and Related Services

Year	Oil Company	Contractor/Operator	Project Name	Scope of Work	No. of Wells	Number of Active Rigs
2013 - 2016	PEDEC	NIDC	South Azadegan Oil Field	Mud Material Supply and Related Services	4 Wells	4 Onshore Rigs
2011 - 2013	PEDEC	SINOPEC	Yadavaran Develop of Phase I	Mud Material Supply, Quality Control, Technical Support	23 Wells	7 Onshore Rigs
2011 - 2013	PEDEC	NIDC	North Azadegan	Mud Material Supply	4 Wells	2 Onshore Rigs
2008 - 2013	NIOC Exploration	DANA Kish Drilling	20 Exploration Wells 5 Years Contract	Mud Material Supply	20 Wells	3 Onshore Rigs
2008 - 2011	NIOC	NIOC Exploration	Exploration Wells	Mud Material Supply	4 Wells	1 Offshore Rig
2010 - 2011	PEDEC	SINOPEC	Yadavaran Early Production Phase	Mud Material Supply, Quality Control, Technical Support	8 Wells	4 Onshore Rigs
2010 - 2011	PEDEC	GWDC	North Azadegan Project	Mud Material Supply, Quality Control, Technical Support	1 Well	1 Onshore Rig
2008 - 2011	NIOC Exploration	NIDC	Drilling 4 Exploration Wells in Persian Gulf	Mud Material Supply	4 Wells	1 Onshore Rig
2008 - 2011	NICOC	NIDC	Drilling of 7 wells in Sarvestan	Mud Material Supply	7 Wells	3 Onshore Rigs
2002 – 2006	PEDEC	ENI/Baker Hughes	Darquin Development Phase II	Supply of Drilling Fluids Materials	15 Wells	3 Onshore Rigs

Waste Management Services

Year	Oil Company	Contractor/Operator	Project Name	No. of Wells	Number of Active Rigs
2022-2024	ZNV	POSCO	Cheshmeh Khosh	4 Wells	2 Onshore Rigs
2021-2023	PEDEC	TDDC	South Azadegan	15 Wells	2 Onshore Rigs
2021-2023	NISOC	OEID	Ahwaz 1&4	4 Wells	2 Onshore Rigs
2018-2020	PEDEC	PERSIA	North Yaran	3 Wells	1 Offshore Rigs
2018-2020	PEDEC	PERSA	South Azadegan	9 Wells	3 Onshore Rigs

ISO/IEC 17025: 2005 Certified

Our current laboratory facilities cover the following testing methods & analysis:

Laboratory Services

- Drilling Fluids Material Quality Control based on API, ASTM, OCMA and National Standard
- Water Based Mud Testing based on API13B.
- Oil Based Mud Testing based on API13B.
- HPHT Evaluation of Drilling Fluids
- Shale Inhibition Evaluation based on API 13B
- Drilling Fluids Formation Damage Evaluation
- Waste/ Water Laboratory Analysis
- Drilling Fluids Testing Reagent Standardization
- Drilling Fluids Testing Equipments Calibration

We have equipped our laboratory with international recognized equipment manufacture brands such as FANN and OFITE and we update our facilities to meet our client requirement.

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Our Material Quality Control Evaluation includes but is not limited to the following:

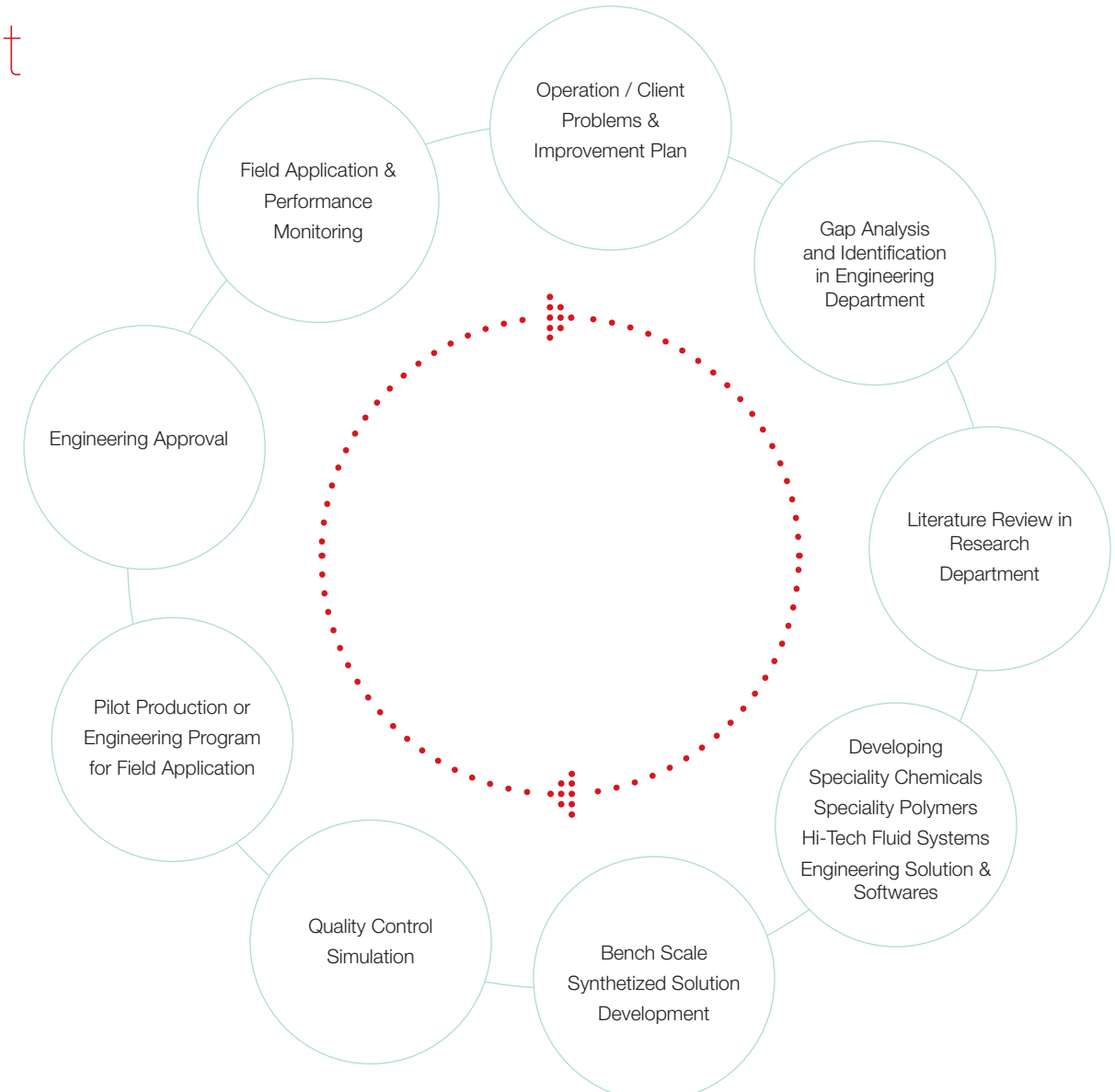
Quality Control

Our current laboratory center and its subsidiaries in Ahwaz and Kish Islands cover the following testing and analysis to meet the current active projects and oil & gas companies' quality control requirements based on API, ASTM, OCMA and National Standards.

Material Name	Standard
Barite	API 13A NISOC
Hematite	API 13A NISOC
Calcium Carbonate	ASTM - NISOC
Salt	NISOC
PAC LV	API 13A NISOC
PAC HV	API 13A NISOC
CMC LV	API 13A NISOC
CMC HV	API 13A NISOC
Xanthan Gum	API 13A NISOC
Bentonite	API 13A OCMA
Attapulgite	API 13A NISOC
Starch	API 13A NISOC
Guar Gum	ASTM
Natural Gum	NISOC
Lubricant	NIDC
Glycol	ASTM
PHPA	ASTM
Solfunated Asphalt	IS
Defoamer	ASTM/NISOC
Foamer	NISOC
Caustic Soda	ASTM/NISOC
Citric Acid	ASTM/IRISI
Sodium Chloride	ASTM/NISOC
Potassium Chloride	ASTM/NISOC
Calcium Chloride	ASTM/NISOC
Hydrated Lime	ASTM/NISOC
Quick Lime (Calcium Oxide)	ASTM/NISOC
Sodium Silicate	IS
Biocide	ASTM
Drilling Detergent	ASTM
Drilling Mud Emulsifier (DME)	ASMT/NISOC
Walnut Shell	ASTM/NISOC
Mica	ASTM/NISOC
Oyster Shell	ASTM/NISOC
Fiber Lock	ASTM/NISOC
Kwik Sell	ASTM/NISOC
Granulated Calcium Carbonate	ASTM/NISOC
Corrosion inhibitor	NACE
Pipe Lax	ASTM/NISOC
Sodium carbonate(Soda Ash)	ASTM/NISOC
Sodium Bicarbonate	ASTM/NISOC
OIL BASE MUD(OBM)	API / NISOC

Research & Development

We believe that research and development is a key element to continuous improvement. Our R&D department is interlinked from operations on the field sites to our engineering to develop tailor made specialty chemicals which result in optimized formulations. The conclusion has been the innovation of a number of wide range Specialty Hi-Tech Chemicals, Fluid Systems and Waste Management Solutions.



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Our research activities cover a wide range of specialty and high technology chemicals and additives and drilling fluids systems in order to improve drilling and production performance and solve the operational problems in the following categories;

- High Temperature High Pressure (HPHT) Reservoirs
- High Reactive Shales & Clays Formation
- ROP Enhancement
- Restricted Environmental Area to Replace Oil Based Mud
- Depleted Formations and Reservoirs
- Lost Circulations and Complete Losses
- Non-Damaged Reservoir Fluids and Drill-in-Fluids
- Production Enhancement
- Completion & Workover Fluids
- Drilling Waste Treatment Process
- Nano Technology Application in Drilling Fluids

We have successfully completed different research projects with National Iranian Oil Company Subsidiaries for replacing Oil Based Mud in High Reactive Shale Layers, HPHT Reservoir, Production Enhancement, ROP Enhancement and Lost Circulation Preventions.

Industrial Research Projects

Year	Client	Project Title
2019	NIOC-EXP	Field application of 10000 barrels of HPHT Water Base Mud to replace Oil Base Mud for Drilling Deep HPHT Exploratory Well
2019	POGC	WBM & Completion Fluid Damage Evaluation
2017	NISOC	OBM & WBM Formation Damage Evaluation
2017	PUT / NISOC	OBM Formation Damage Evaluation & LCM Bridge
2016	NISOC	OBM Formation Damage Evaluation
2014	PEDEC	OBM & WBM Formation Damage Evaluation

University Supported Research Projects

Pars Drilling Fluids supports universities' related Master and PhD student projects from top national and international universities by providing industrial research topics and laboratory facilities we interview and select high caliber students each year.

Till now, more than 50 Student Research Projects have been supported by our research department.

Submitted Patent - National

2019	Water based drilling fluid system with remarkably stable rheological properties , low fluid loss, high stability of reactive shale/clays in bottom hole conditions up to 300 ℉
2018	Nano-drilling fluid shale inhibitor as a replacement for polymer potassium chloride drilling fluid
2018	Synthesis of rheology stabilizer to control circulating density and prevent drilling fluid loss
2018	Modified component synthesis to upgrade thixotropic properties
2017	Synthesis of biodegradable and green drilling lubricant with torque and drag reducing capability in all water based drilling fluids
2017	Production of modified starch to overcome the drilling problems
2016	Synthesis a Temperature Stabilizer for HPHT Drilling
2016	Synthesis of Poly Anionic cellulose (PAC)
2015	Synthesis of Defoamer From the Waste of Petrochemical Industry.

Published Patents & Papers

We are presenting our research developments by submitting our achievement in the form of Patent, Presentation, Posters and Papers in International and National Conferences and Journals. Till now, we have registered 3 Patents, 3 International Presentations, 7 National Presentations and Papers in Intentional & National Journals.

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Published Papers for Presentation, Posters & Journals in International Conferences

Conference / Date / Acceptance Type / Paper Title

Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC), UAE / 2021 / E-Poster
Bridging Agents Optimization Based on Predicting Induced Fracture Model for Deviated Wells – A Case Study

SPE/IADC Middle East Drilling Technology Conference and Exhibition, UAE / 2021 / E-Poster
Developing New Generation of Environmentally Friendly Nano Based Low Saline Water-Based Drilling Fluid

International Petroleum Exhibition & Conference, UAE / 2020 / E-Poster
Investigating Hole-Cleaning Fibers' Mechanism to Improve Carrying Cutting Capacity and Comparing Their Effectiveness with Common Polymeric Pills

Abu Dhabi International Petroleum Exhibition and Conference / 2019 / E-Poster
Designing Innovative Wellbore Strengthening Materials to Optimize Drilling in Challenging Environments

SPE/IATMI, Indonesia / 2019 / E-Poster
A New Generation of Independent Temperature and Pressure Drilling Fluids System with Flat Rheological Properties, Low Invasion, Higher Shale Stability and Lubricity to Replace Oil Based Mud

APOGCE, Indonesia / 2018 / E-Poster
A New Generation of Flat Rheology Water Based Mud to Manage ECD, Prevent Loss Circulation, Temperature and Pressure Independent Rheology, Higher Lubricity and Shale Inhibition

APOGCE/SPE, Indonesia / 2017 / E-Poster
Now It is the Time to Forget Potassium Based Shale Inhibitors by Developing Nano Silica-Alumina Based Drilling Fluid; Laboratory Study Proves Improvement in Shale Inhibition and Temperature Stability

IADC/SPE, Singapore / 2016 / E-Poster
A Brief Introduction to High Temperature and Foam Free Water Based Drilling Fluids

SPE/IATMI, Indonesia / 2015 / E-Poster
A Case Study on the Successful Application of Solids Lubricants in Directional and Horizontal Drilling Operations to Reduce Torque and Drag and Improve ROP in One of the Carbonate Oil Reservoirs

IPTC, Doha, Qatar / 2015 / Technical Presentation
Multifunctional Nanoadditive in Water Based Drilling Fluid for Improving Shale Stability

American Journal of Oil and Chemical Technologies / 2015 / Journals
Nano-drilling Fluid for Removing Shale Formation Drilling Problems: More Qualified and Cost Effective

Published Papers for Presentation, Posters and Journals in National Conferences

Conference / Date / Acceptance Type / Paper Title

6th Iran International Drilling Conference & Exhibition / 2019 / Technical Presentation (selected as superior paper article)
Laboratory Study and Designing Water Based Mud with Very Low Salinity for Drilling Water Wells and Reducing Environmental Effect

3rd International Conference on Oil, Gas and Petrochemical, Tehran, Iran / 13-14 December, 2015 / Technical Presentation (selected as superior paper article)
Nano-drilling Fluid for Removing Shale Formation Drilling Problems: More Qualified and Cost Effective New Generation Glycol Drilling Fluids System for Drilling of Water-Sensitive Formations

2nd National Iranian Drilling Industry Congress, Tehran, Iran / 3-4 March 2015 / Poster
Diverse Unique Performances of SiO2 Nanoparticles in Drilling Fluids Industry without Costly Modifications: Shale Stability, Lubricity, Rheological Properties

2nd National Iranian Drilling Industry Congress, Tehran, Iran / 3-4 March 2015 / Oral Presentation
Syntho-drill Synthetic-Based Mud (SBM)

2nd Conference on the Role of research and new technologies in the waste management industry (upstream) / 6-7 January 2015 / Oral Presentation
Drilling Waste Management Plan for Drilling & Production Operation in Iran

Specialty Chemicals, Polymers & Hi-Tech Products

Our research department has developed different specialty and Hi-Tech Chemicals and Fluids systems to meet operational requirements.

Shale Inhibitors

GLYCO-DRILL MC	Drilling Glycol - Medium Temperature Cloud Point (70 - 90 deg C)
GLYCO-DRILL HC	Drilling Glycol - High Temperature Cloud Point (> 90 deg C)

Corrosion Inhibitors/ Scavengers/ Preservative

BIOCIDE MP	Biocide / Bacterial Control for Drilling Fluids
BRINE-COR	Corrosion Inhibitor for Completion Fluids/Brine
H2S SCAV L	H2S Scavenger for Completion Fluids/Brine - Liquid Grade
H2S SCAV P	H2S Scavenger Zinc Based for Drilling Mud - Powder Grade
OX-SCAV L	Oxygen Scavenger for Drilling & Completion Fluids/Brine - Liquid Grade
OX-SCAV P	Oxygen Scavenger for Drilling Fluids - Powder Grade
ANTI-CRYSTALINE	Crystallization Inhibitor/Prevention for Brine

Pipe Free Agent

PIPE-FREE	Pipe Free Agent / Pipe Lax

HPHT

AMYLOSE HT	Modified Pregelatine Starch – for High Temperature Condition (300 ℉) – Up to 2.4 S.G

Liquid & Solid Lubricants

ECO-LUB MP	Lubricant / Bit Lub - General Drilling Grade
TORQUE-FREE GB M100	Glass Bead Microsphere 1 - 125 mic
TORQUE-FREE GB M600	Glass Bead Microsphere 125 - 600 mic
TORQUE-FREE GB M1000	Glass Bead Microsphere 600 - 1000 mic
TORQUE-LOW GR	Graphite Powder Blend

Cleaning, Foaming, Defoaming & Emulsifier Agents

CLEAN SURF	Drilling Detergent
DEFOAM ALC	Defoamer - Alcohol Based
DEFOAM SLC	Defoamer - Silicon Base
FOAMER HP	Foamer - High Performance for Saturated Salt Water
FOAMER MP	Foamer in Salt Water
WBM-EMULSIFIER	DME - Drilling Mud Emulsifier

OBM Specialty Chemicals

OBM-EMUL P	Oil Based Mud - Primary Emulsifier
OBM-EMUL S	Oil Based Mud - Secondary Emulsifier
OBM-FLC	Oil Based Mud - Fluid Loss Control Agent
OBM-VIS P	Oil Based Mud - Viscosifier / Oragnophilic Clay
OBM-VIS L	Oil Based Mud- Liquid Viscosifier
OBM-THIN	Oil Based Mud - Mud Conditioner / Thinner & Rheology Reducer
OBM-RM	Oil Based Mud - Rheological Modifier
OBM-WET	Oil Based Mud - Wetting Agent
OBM-LUB	Oil Based Mud - Lubricant

High-Density Weightings Agents & Brines

CALCIUM BROMIDE L	Calcium Bromide- Liquid Grade 1.76 S.G
CALCIUM BROMIDE P	Calcium Bromide- Powder 98%
SODIUM BROMIDE L	Sodium Bromide - Liquid Grade- 1.3 S.G
SODIUM BROMIDE P	Sodium Bromide - Powder Grade
FORMA-DRILL I-P	Formate Salt - Sodium Base- Powder Grade
FORMA-DRILL II-L	Formate Brine- Potassium Base Liquid - 1.57 S.G
FORMA-DRILL II-P	Formate Salt Potassium Base - Powder Grade
FORMA-DRILL III-L	Formate Brine - Cesium Base Liquid -2.3 SG
MICRO-DENSE	Micromax – Density 4.6 S.G - Acid Soluble Weighting Agent
MICRO-MAX	Micromax – Density 4.7-4.9 S.G - Acid Soluble Weighting Agent

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Drilling Performance & High-Tech Chemicals

Shale Stability & Wellbore Strengthening Materials

ASPHA-SHALE MP	• High Performance Wellbore Stabilizer & Strengthening
BORE-STAB L	• High Performance Shale Stabilizer & Shale Plastering
CLAY BOND L/N	• Nano-based clay/shale inhibitor to provide shale stabilization and cutting encapsulation through coating and plastering mechanism
EMO-BLOCK	• High Performance Shale Stabilizer with Pore Blocking Technology
N-INHIBIT	• High Performance Nano based Shale Stabilizer with Pore Blocking & Physisorption

Rheology Control Agents, Hole Cleaning & Thixotropic Additives

FIBER-SWEEP	• High Performance Hole Cleaning Fiber for Deviated & Horizontal Wells
SPERSEEN L	• High Performance Rheology Control and Reducer
THIXO-VIS	• High Performance Thixotropic / Viscosifier Agent for Bentonite & Polymer Mud
WELL-SWEEP	• High Performance Polymeric Agent for High-LSRV Hole Cleaning Pills

Corrosion Inhibitors/ Scavengers/ Preservative

BIO-SAFE	• High Performance- Mud Preservative Agent

ROP Enhancers, Torque & Drag Reducer, Differential Stuck Reducer

ECO-LUB HP/EP	• High Performance lubricants for Extreme Pressure
ROP ENHANCER	• High Performance ROP Enhancement Agent
STUCK-LESS	• High Performance Differential Stuck Pipe Preventive Agent

Bit & Downhole Cleaning Agents

BIT-WASH	• High Performance Bit Balling Removal
CLEAN-SURF HP	• High Performance Cleaning Agent for Downhole Tools

HPHT Speciality Chemicals

TEMP-STAB L	• High performance Temperature Stabilizer for Starch and Polymers

Lost Preventive, Circulation Materials & Technology (LPM / LCM)

Wellbore Strengthening Materials

WELL-STRENGTH F	• Wellbore Strengthening Material (Stress Cage Forming Material) - Fine grade
WELL-STRENGTH M	• Wellbore Strengthening Material (Stress Cage Forming Material) - Medium grade
WELL-STRENGTH C	• Wellbore Strengthening Material (Stress Cage Forming Material) - Coarse grade

Bridging Agents for Reservoirs

CARBO-BRIDGE UF	• Calcium Carbonate Bridging agent (1 - 20 mic)
CARBO-BRIDGE SF	• Calcium Carbonate Bridging agent (20 - 40 mic)

LPM & Seepage Loss Controller (Less than 25 bbl/hr)

LPM-BRIDGE F	• Lost Circulation Technology Highly Effective cellulosic Loss Circulation Preventer
KWICK SEAL F	• Highly Effective LCM Blend- Fine Grade
KWICK SEAL M	• Highly Effective LCM Blend- Medium Grade

Moderate Losses (25-100 bbl/hr)

KWICK SEAL C	• Highly Effective LCM Blend- Coarse Grade
FRAC-BRIDGE	• Lost Circulation Technology for Fracture Reservoir

Severe Losses (100-200 bbl/hr)

LCM-FIBER C	• Lost Circulation Technology for Fractured Formations

Lost Circulation Technology - Complete Losses (More than 200 bbl/hr)

BCD-SEAL	• Powdered plug-forming product for curing severe/ complete loss circulation problems
WELL PLUG	• High Performance Cross Link Polymeric LCM

High Performance Water Based Drilling Fluid Systems

SWEEP-DRILL

"A High Performance Thixotropic with Efficient LSRV Hole Cleaning Fluid" to provide higher hole cleaning in Top holes / large hole sizes/Loss Zone & Fractured Zones / Loose Sands formations.

CLAY-BOND/N-INHIBIT (K-FREE)

"Nano Based Water Based KCL Free Drilling Fluids" to overcome drilling challenges while drilling moderate to high reactive clays & shales in highly sensitive areas (Cl-, K+)

ULTRA-INHIBIT

"High Performance WBM with ultra clay & shale inhibitions" for replacing OBM, in order to combat drilling challenges in Interbedded Layers with reactive clays & Micro Fractured shales with Limestone

HEAVY-DRILL

"High Temperature Heavy Weight Polymer Mud with Barite & Hematite" containing appropriate viscosifers, fluid loss control agents, temperature stabilizers and special dispersants to drill high pressure zones.

LUB-DRILL

"High Lubricity Polymer Mud with Special Lubricants" containing both liquid and solid lubricants to drill Deviated & Horizontal Wells

SALT-FREE

"Nano Based Water Based Salt Free Drilling Fluids" to combat drilling challenges in environmentally restricted areas (high chloride concentrations) and water well drilling.

Reservoir Compatible & Drill-In Fluids Systems

ULTRA-CARB (CARBO-BRIDGE)

"High performance Salt saturated polymer mud weighted with sized calcium carbonates" containing dispersants and stabilizers to overcome reservoir challenges and provide with proper rheological properties, low filtrate invasion and high shale/clay inhibition while drilling in reservoir sections.

MAX-DRILL

"High Performance WBM for HPHT reservoirs" containing Acid soluble high density weighting agents to drill HPHT reservoirs

FORMA-DRILL

"Formate-based WBM for high temperature reservoirs with high reactive shale/clays" containing Na/K-Formate brine as base fluid to prevent formation damage and corrosion problems.

CS-FORMA DRILL

"Formate-based WBM for high temperature reservoirs with highly reactive shale/clays" containing cesium formate as base fluid to inhibit inter layer clays and to prevent formation damage and corrosion problem

HI-TECH Drilling Fluid Systems

MICRO-DRILL

"Low density water based mud including foamers and foam boosters (organic)" for replacing UBD and OBM, in order to avoid of whole fluid loss and differential sticking while drilling depleted reservoirs

SBM-DRILL

"Synthetic based mud" containing primary and secondary emulsifiers, special polymers to drill Sensitive & High Reactive Shale/Clays.

HPHT-DRILL/ALL-STAB

"HI-TECH WBM for HPHT wells with stable rheological profile up to 350 deg F" for replacing OBM, in order to combat challenges while drilling in HPHT conditions, high reactive shale/clays

GEO-DRILL

"High Performance/HI-TECH WBM for Geothermal wells"

Products & Specialty Chemicals

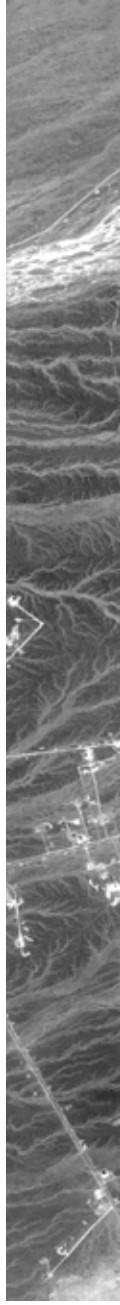
- Water Based Mud
- Oil Based Mud
- Synthetic Based Mud
- Completion & Workover Fluids
- Well Clean Up & Production Enhancement
- Production Chemicals
- Waste & Water Treatment Chemical

We stock and supply the complete package of chemicals for Water Based Mud, Oil Based Mud, Synthetic Based Mud, Completion Fluids and Workover fluids to meet drilling activity requirements.

Given the sudden unpredictable changes which occur in drilling operations, we ensure all materials are kept as contingency stock in our warehouses to sustain a readily available service. Products are kept in a safely manner on the rig sites and they are placed on mud skids which are secured with tarpaulin covers.

Packaging and labelling conditions are of utmost importance for our operations, we make sure to provide reliable packaging conditions that suit the needs of our industry. Such conditions may vary between onshore and offshore operations. All products used by PDF are purchased from our Approved Vendor List (AVL).

Specialty chemicals produced for specific applications are very beneficial for our operations as they tackle issues which have been identified due to 'hands-on experiences' gained by our operational and technical teams on the rig sites. The experiences gained from our drilling operations are analyzed by our R&D team and this procedure has promoted the development of several Specialty Chemicals and Fluent Systems. The result of such specialty chemicals has helped to remedy drilling problems, such as: improving operations to increase ROP, decrease torque and drag, obtain stability in HPHT environments, inhibit reactive shale, reduce formation damage and in-turn improve production.



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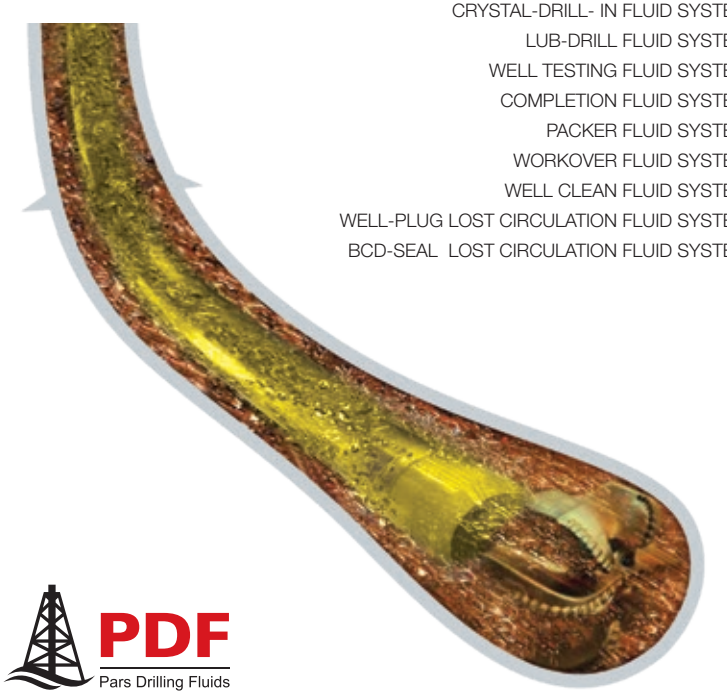
Our Product Portfolio

WEIGHTING AGENTS	Barite, Ferro-Bar, Calcium Carbonate
SALTS	Sodium Chloride, Potassium Chloride
VISCOSIFIERS	Natural Gum, CMC HV, PAC R/HV, Xanthan Gum, XCD Polymer HT, Guar Gum
FLUID LOSS CONTROL ADDITIVES	Starch, Modified Strach, Amylose HT, CMC LV, PAC LV, Polymer HT
SHALE INHIBITORS	Clay-Bond (PHPA), Glyco-Drill, Glyco-Drill HT, Sulphonated Asphalt
PH & ALKALINITY CONTROL	Caustic Soda, Soda Ash, Sodium Bicarbonate, Potassium Hydroxide
LUBRICANTS	Bit Lub, EP Lubricant, HT Lubricant
TORQUE & DRAG REDUCERS	Torque Low, Torque Free
STUCK PIPE FREE AGENTS	Pipe-Free W/UW, Pipe Lax
PRESERVATIVES	Biocide
DISPARSANTS & DEFLOCCULANTS	Disparsants, WBM Thinners
CLEANING AGENTS & SURFACTANTS	Rig Wash, Detergents
FOAMING & DEFOAMING AGENTS	Foamer, Defoamer, Anti-foam
CORROSION INHIBITORS	Drill Pipe Corrosion Inhibitors, WBM Corrosion Inhibitors
SCAVANGERS	Oxygen Scavangers, H2S Scavangers
LOST CIRCULATIONS	Mica, Walnut Shells, Cellophane Flake, Fiber Lock, Oyster Shells, Carbo-Sized
OIL BASED MUD PACKAGE	Primary & Secondary Emulsifiers, OBM FLC & Viscosifiers
SYNTHETIC BASED MUD PACKAGE	Synthetic Base Fluids
HPHT ADDITIEVES FOR HP-WBM	HT Polymers, HPHT Stabilizers
WORKOVER & COMPLETION FLUDIS	Calcium Chloride, Sodium, Calcium and Zinc Bromide
WASTE TREATMENT CHEMICALS	Coagulants, Flocculants

SPUD-DRILL FLUID SYSTEM
SWEEP-DRILL FLUID SYSTEM
CLAY-BOND FLUID SYSTEM
HEAVY-DRILL FLUID SYSTEM
ULTRA-WEIGHT DRILL FLUID SYSTEM
ULTRA-DRILL FLUID SYSTEM
POLY-DRILL FLUID SYSTEM
GLYCO-DRILL FLUID SYSTEM
SHALE-DRILL FLUID SYSTEM
ULTRA-INHIBIT FLUID SYSTEM
SILCO-DRILL FLUID SYSTEM
AMINE- DRILL FLUID SYSTEM
N-INHIBIT-DRILL FLUID SYSTEM
LOW-WEIGHT-DRILL FLUID SYSTEM
APHRO-DRILL FLUID SYSTEM
HPHT-DRILL FLUID SYSTEM
SYNTHO-DRILL FLUID SYSTEM
OBM-DRILL FLUID SYSTEM
CARBO-DRILL FLUID SYSTEM
S-FORMA-DRILL FLUID SYSTEM
P-FORMA-DRILL FLUID SYSTEM
CS-FORMA-DRILL FLUID SYSTEM
CRYSTAL-DRILL- IN FLUID SYSTEM
LUB-DRILL FLUID SYSTEM
WELL TESTING FLUID SYSTEM
COMPLETION FLUID SYSTEM
PACKER FLUID SYSTEM
WORKOVER FLUID SYSTEM
WELL CLEAN FLUID SYSTEM
WELL-PLUG LOST CIRCULATION FLUID SYSTEM
BCD-SEAL LOST CIRCULATION FLUID SYSTEM

WELL-PLUG LOST CIRCULATION SYSTEM



Drilling Fluids Engineering Design & Programming

Our Engineering, Operation & Research Departments have petroleum industry experts, managers and engineers who work closely together to design proper drilling fluids systems based on geological information and nearby wells data. We offer engineering solutions to cover a wide range of operational requirement in different drilling geological environments as following:

- HPHT wells in Exploration and Development Projects
- High Pressure Geological layer with influx contamination
- Troublesome Shale Zones and associated problems
- Reservoir Protection and formation damage Reduction by using Non-Solids Drill-in-Fluids
- Environmentally Fluids in replacement of Oil Based Mud
- Complete and moderate losses in High Permeable or Fracture Zones
- Bit Balling and Clay Stickiness
- Environmentally Friendly Synthetic Based Mud for Hard Drilling
- ROP Enhancer and Performance improving
- Cost Effective solutions for workover and completion fluids

Fluid Track Software is an engineering software which records and tracks all relevant drilling-fluid information:

- Wellbore Geometry
- Bit and BHA Information
- Drilling-Fluid Property Checks
- Volume Accounting and Hydraulics Calculations
- Inventory Tracking
- Cost Allocation
- Solids-Control Equipment
- Chemical Concentrations
- Treatment Discussions
- Daily Mud Report (DMR)
- Final Drilling Fluids Report
- Benchmarking the Performance of the Provided Services

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Pars Drilling Fluids

Pars Drilling Fluids Company (PDF) offers wide range of drilling fluids engineering solutions to cover client's engineering and operational requirement in drilling activity. Our expert engineers provide the following value for our clients:

- Drilling Fluids Engineering
- Project Operational Management
- Drilling Fluids Design and Programming
- Final Well Report and Recap
- Completion and workover Fluids Design
- Advance Technologies and Applications
- Total Fluids Management
- Project Benchmarking and Performance Evaluation

FluidTrack Software is an engineering software solution for preparing daily mud report and final drilling fluids report by online data transmission between rig site and engineering department to provide all required data for analyzing and benchmarking the performance of the provided services for our client.

Mud Engineering & Operational Services

Operational Services are provided for both onshore and offshore projects by supporting drilling operations in a safe and cost-effective manner. Our experts and senior mud engineers are fully trained and familiar with the drilling operations to advise and provide on-site treatment by providing quick actions and solutions.

Our main target in our operational services is to be proactive regarding the upcoming requirement and we believe this approach is key to optimize drilling operations. Shale formations in Iran can create difficult conditions that are challenging especially in HPHT wells. We therefore analyze geological properties in advance to understand what solutions are required before encountering problems to ensure minimal lost circulation and maintain well stability.

Our on-site operational services are fully equipped with laboratory units to monitor mud properties on-time and on a regular bases to provide complete mud check report for our clients.

Daily Mud Reports (DMRs) are generated systematically and reported to our clients on a regular basis, moreover, meetings with our clients and operation team take place frequently to assess drilling conditions.

Every reasonable effort is made to prevent NPTs (nonproductive time) as we understand the costs incurred for our clients and the loss of valuable time which is unrecoverable.

Solids Control Services

Solids build up is one of the main concerns that causes ROP reduction and changes mud properties during drilling. This also becomes a serious problem in the reservoir section due to the potential formation damage which in turn results in reduced hydrocarbon production. High performance solids control can remove solids up to 5 micron which can improve mud properties and drilling performance.

We supply high performance solids control equipment with different specification and capacity associated with professional engineering services to monitor and improve solids removal efficiency. Our solids control equipment includes but is not limited to the following:

- Flow Line Divider
- Gumbo/Primer Removal
- Shale Shakers Liner / Elliptical Motion
- Mud Cleaners / Desanders / Desilters
- Degassers
- Shale Shaker Screens

Shale Shaker

- Shale Shaker – 3/4 Panels is a high G force and performance shale shaker with 3 / 4 shaker screens panels with linear and elliptical motion.
- Shake Shaker Double Decks is a high G force shale shaker with 2 Panel Decks which is able to handle higher capacity fluids with linear and elliptical motion.
- Shake Shaker Triple Decks is a high G force and high performance shale shaker with 3 Panel Decks which is able to handle higher capacity fluids with linear and elliptical motions.

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Shale Shaker Screens

- Variety of Shale Shaker Screens is provided for different applications and required performance to achieve higher solids removal on the shale shakers based on API RP 13C Screen Designation Table.
- We are also supplying high performance shale shaker screens for Long Life and High Performance application.

Mud Cleaners, Desilters & Desanders

- Mud Cleaner is a combination of high performance high-G force shale shaker associated with a 20 X 4” Desilter to remove solids content of mud up to 325 mesh and a 3 X 10-12” Desander cone.
- Desilter HP is high-capacity 4” Desilter cone which is upgradable to various types of shale shaker or set up on mud tanks. The number of cones is adjustable according to flow capacity.
- Desander HP is a 10-12” Desander cone which is upgradable to various types of shale shaker or set up on mud tanks. The number of cones is adjustable in accordance with the flow capacity.

Decanter Centrifuge

- Decanter Centrifuge HGS-1500 is a high performance, low speed decanter centrifuge which is designed for the removal of high gravity solids in a barite recovery system.
- Decanter Centrifuge LGS-4000 is a Variable Frequency Drive (VFD) with high capacity and high speed up to 4000 rpm. The variable speed control panel allows for the adjustment of the bowl speed for optimum removal of low gravity solids.

Environmental Services Drilling Waste Treatment Technology

PDF offers a wide range of waste management services to minimize generated waste and contaminated discharged cuttings during drilling operations. This helps keep the environment clean and ensures that our operations are in compliance with DOE (Department of Environment) legislations.

Waste Management Services

We provide cost-effective and optimum solutions from environmentally acceptable procedures to achieve zero-discharge plans and improve fluids recovery. The outcome reduces operational costs and enables recycling.

Wastes are analyzed for various parameters such as chloride, nitrate, phosphate, BOD (Biological Oxygen Demand), COD (Chemical Oxygen Demand) and oil content. Other analysis are carried out to monitor treatment processes on a regular basis during waste generation. Our waste management personnel are fully trained, experienced and have the competencies in place to provide the best reliable services with concentrated support and the least liabilities.

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Waste Management Services

1. Identification

- Environmental Impact Assessment
- Check List Questionnaire
- Consultancy Service

2. Planning

- Waste Water Treatment Solutions
- Cuttings Treatment Methods
- Solutions Optimization

3. Design

- Waste Treatment Process Design
- Equipment Selection
- Zero-Discharge Process Design
- Waste Pit Design
- Treatment Chemical Selection
- Simulation
- Pilot Test

4. Implementing

- Treatment Equipment Supply
- Custom Made Equipment
- Dewatering Equipment
- Cuttings Treatment
- Biological Treatment
- High Performance Oil Recovery by a 3-Phase Separation Unit
- Commissioning and Start Up

5. Monitoring

- Waste Treatment Analysis
- Dewatering Performance
- Waste Fixation & Stabilization
- Biological Parameters
- Oil Separation Recovery
- Laboratory Analysis

6. Improvement

- Process Design Improvement
- Cost Optimization
- Training
- Lesson Learned Record

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We provide the complete range of Waste Management Equipment and Engineering Services to reduce and recycle drilling associated wastes in order to protect the environment and reduce the related cost. Our waste management equipment includes but is not limited to the following:

Cuttings Treatment Equipment

- Cutting Transport Auger/Screw Conveyer
- Dryer Shale Shaker
- Vertical Cutting Dryer
- Fixation/Stabilization Equipment
- Thermal Treatment Unit
- OBM Cutting Box

Waste Water Treatment Equipment

- Dewatering Unit / Automatic Flocculation Unit
- Decanter Centrifuges
- Hydraulic Filtration Unit
- Chemical Dosing Units
- Submersible Pump
- Air Diaphragm Pump
- Centrifugal Pump

Oil Spill Removal Equipment

- Oil Removal Unit
- Oil Skimmer

Waste Analysis Test Kit

- Photometer
- Turbidity Meter
- BOD/COD Measurement
- Flocculation/Jar Test
- Reagents

Total Fluids Management

At Pars Drilling Fluids Total Fluids Management System (TFM) we closely monitor the performance of Drilling Fluids System, Solids Control Efficiency and Waste Management Services to introduce the optimum solution to our operators which results in the reduction of the drilling fluids and waste treatment costs. Our engineering team designs an environmentally friendly drilling fluids system and selects high performance solids control equipment to recover the drilling fluids and reduce discharge waste. Also, we offer a survey plan to operators to benchmark the current practices and improvement capacities.

4R

Reduce
Re-Use
Recycle
Replace

Drilling Fluids Services
Waste Management Services
Solids Control Services

IADFT

After holding several international mud schools during the recent years, We have established an International Advance Drilling Fluids Technology Center as a MUD SCHOOL in Kish Islands with the cooperation of well-known universities in 2015 in order to provide training courses for our employees and our clients for different levels from Basic to advances courses in Drilling Fluids and Waste Management Technology.

International Advance Drilling Fluids Technology Center (IADFT)

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Trainings we offer

Our trainings are focused on the needs of delegates who attend so that they may gain necessary skills and knowledge which is useful within the workplace. We care about what we do and we value the opinions of all delegates and clients who provide constant feedback which allows us to monitor quality and wherever necessary implement any required changes.

Our expert consultants assist us when discussing training details with our clients. We listen to clients and identify their needs, allowing us to design and deliver cost effective training solutions, tailored wherever necessary, to meet specific company requirements.

In addition, we aim to help employers to meet statutory requirements imposed on them related to training and assist them to develop a proactive training culture where the staff are encouraged to play an integral role in the implementation of industry wide, safe working, practices.

For existing employees, we use the competency models to assess employees against their specified job competencies, identify gaps, and then design a custom training program for each individual. The individual then takes ownership of his or her competence development, participates in the requisite training, and is reassessed after completing the training to ensure proper application in the workplace.

We are able to offer a wide range of training courses to clients from a variety of industrial backgrounds. Many of our courses can be delivered in other languages if required.

We can design company specific courses to meet client requirements where necessary and if facilities and equipment permit, training programs can also be conducted on client premises to suit their own individual needs.

1	Basic Mud Engineering Course	Is for new comers to the field who intend to learn the basics of drilling fluids engineering as a profession
2	Intermediate Mud Engineering Course	Is for those who are engaged in drilling fluids engineering and seek to improve their abilities in a more professional application as junior trainee mud engineers.
3	Advanced Mud Engineering Course	Is for junior and experienced mud engineers who aim to become senior mud engineers, this requires being familiar with advanced drilling fluids techniques.
4	Drilling Fluids Managerial Course	Is for senior mud engineers and drilling managers who would like to improve their fluids management knowledge.
5	Drilling, Completion Fluids ,Drill-in-Fluids Design & Programming Course	Is for senior mud engineers and drilling engineers who wish to design drilling fluid and programming applications.

Center Office

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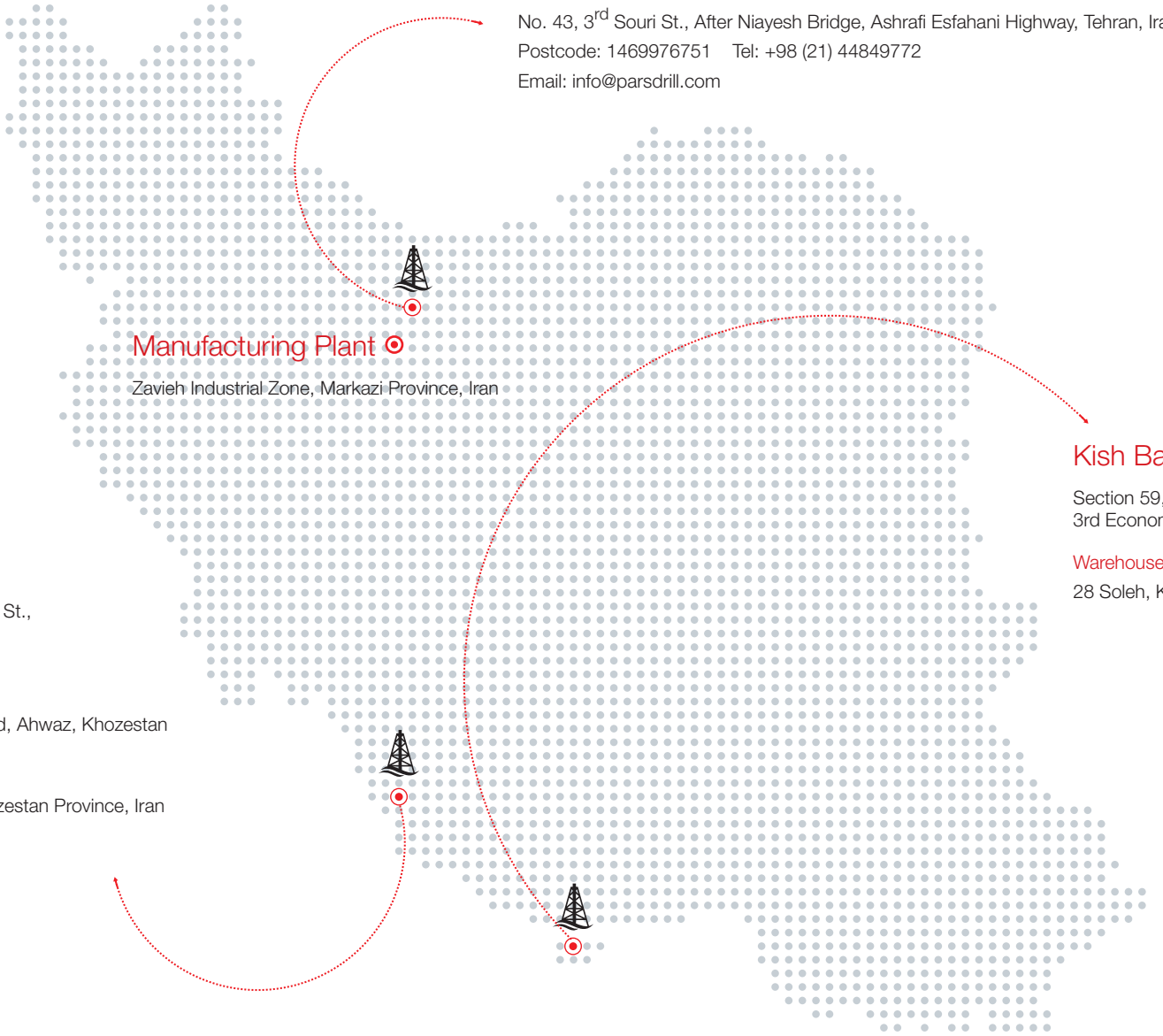

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Imagine The Possibilities

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