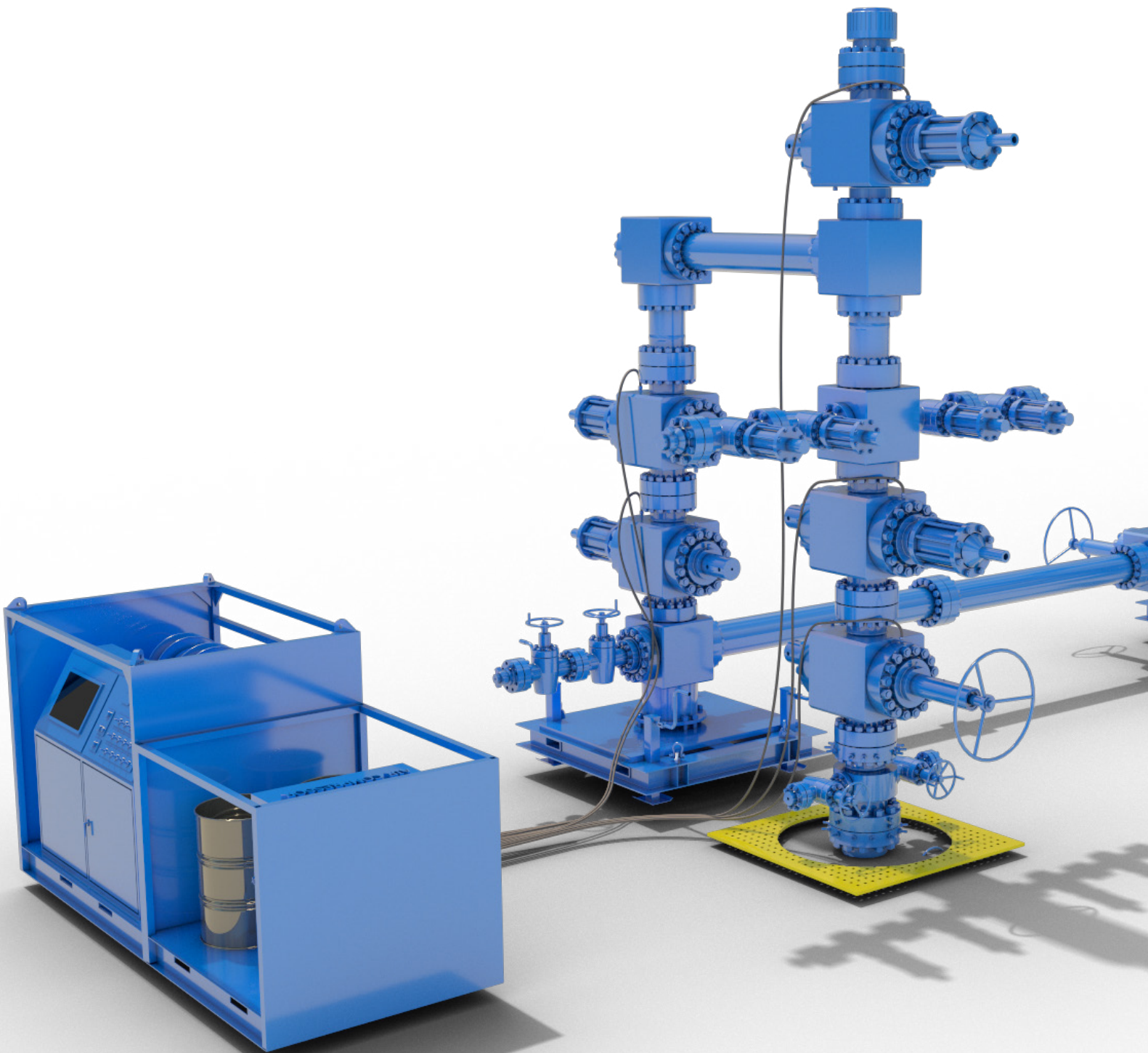


SPM™ Oil & Gas

A Caterpillar Company

Frac Rental System



Excelling in engineering intelligence

SPM™ Oil & Gas, Inc. (SPM) provides superior products and service solutions to make our customers more efficient and lower total cost of ownership. More customers choose our SPM pressure pumping solutions than any other. We provide SPM well service and stimulation pumps, flow control products, replacement expendable parts and supporting engineered repair services. SPM's Pressure Control solutions include Seaboard™ and KOP™ wellheads, API valves, frac trees, managed pressure drilling equipment including Mathena™ chokes, separators and containment equipment. Globally, we deliver engineered mechanical and rotating equipment repairs and upgrades, oilfield and drilling equipment repair and certification, rapid prototyping or spare parts, robust asset management and field engineering services.



COMMITMENT TO QUALITY

SPM's Quality Management System (QMS) is qualified under ISO 9001 and 14001, as well as OHSAS 18001 requirements. Internal audits of SPM's manufacturing and service centers are performed semi-annually to verify all policies are being followed and that lean focused continuous improvement drives value for the customer. External audits are performed at a minimum of every three years by a third party certifier. All products are manufactured in the North America. SPM holds licenses to manufacture product that is API 6A and API Q1 compliant."

COMMITMENT TO SAFETY

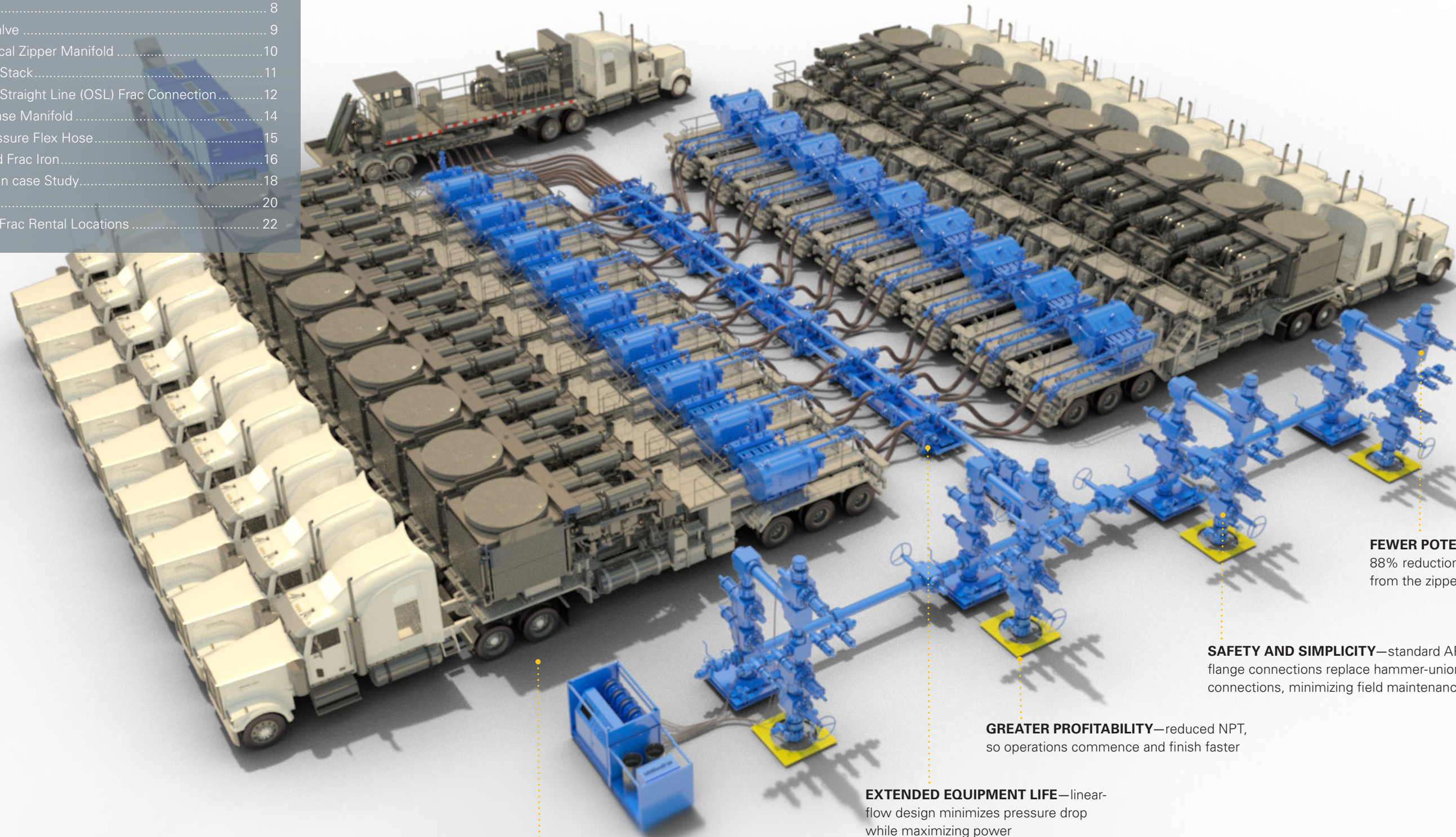
SPM is committed to managing its activities to safeguard its employees, clients, and the communities within which SPM operates in addition to the environment. SPM global QHSE standards have been disseminated throughout our operations. These standards, based upon a robust risk assessment approach and recognized QHSE management systems, provide a platform for continual improvement.

COMMITMENT TO CUSTOMERS

SPM prioritizes its ability to provide a rapid response to service needs through its global network of SPM™ Edge Service centers and engineering field assist teams. Service center teams are located in close proximity to all major shale plays and key production locations around the world to support customers with all repair and maintenance needs.

Contents

The Capabilities and Availability of the Frac System.....	6
Project Planning and Analysis	7
7" Plug Valve	8
1640RS Gate Valve	9
Seaboard™ Vertical Zipper Manifold	10
Seaboard™ Frac Stack.....	11
Seaboard™ One Straight Line (OSL) Frac Connection.....	12
Automated Grease Manifold	14
SPM™ High-Pressure Flex Hose.....	15
SPM™ Simplified Frac Iron.....	16
North American case Study.....	18
SPM™ Edge.....	20
North American Frac Rental Locations	22



REDUCED LABOR COSTS—less rig-up time and maintenance required

EXTENDED EQUIPMENT LIFE—linear-flow design minimizes pressure drop while maximizing power

GREATER PROFITABILITY—reduced NPT, so operations commence and finish faster

SAFETY AND SIMPLICITY—standard API-6A flange connections replace hammer-union connections, minimizing field maintenance

FEWER POTENTIAL LEAK PATHS—88% reduction in connections per well from the zipper to the frac stack

The Simplified Frac Iron System

The Capabilities and Availability of the Frac System

Adaptability

The SPM Oil & Gas' OSL systems adaptability to differing pad layouts make installation quick and easy regardless of pad size, shape, or alignment. Strategically spaced Rotating spools allow for misalignment from well to well, and from zipper to well, while maintaining as few turns as possible for optimized flow characteristics. Accommodations can be made for multiple banks of wells, unique shapes, or restricted spaces.

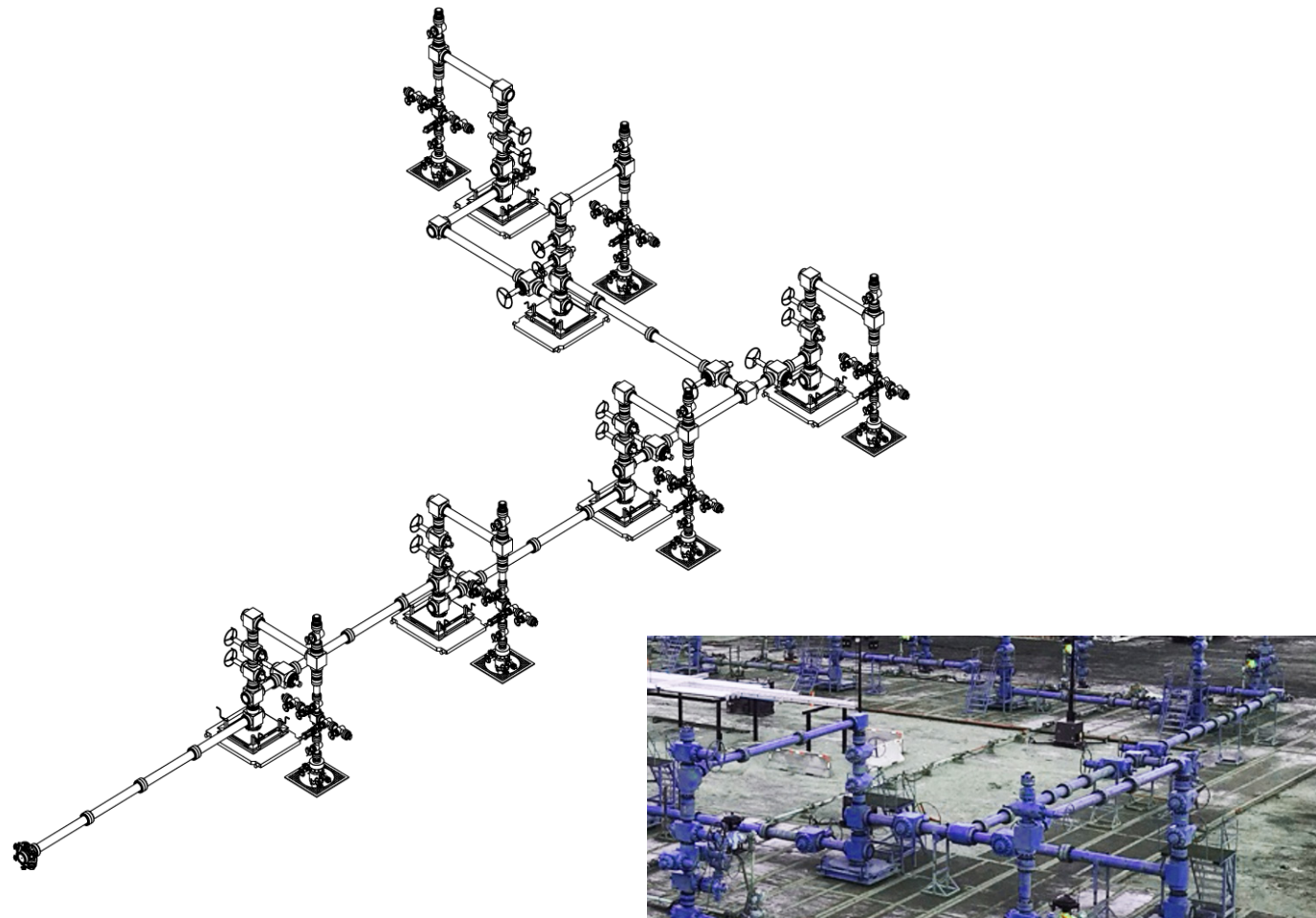
RENTAL OFFERING INCLUDES	10K	15K
4" API Flange	✓	✓
5" API Flange	✓	✓
7" API Flange	✓	✓

Availability

SPM carries an extensive fleet of rental Frac trees and OSL systems. This equipment can be relocated to the service center nearest the customer's operations and remain there for the duration of the program.

Reliability

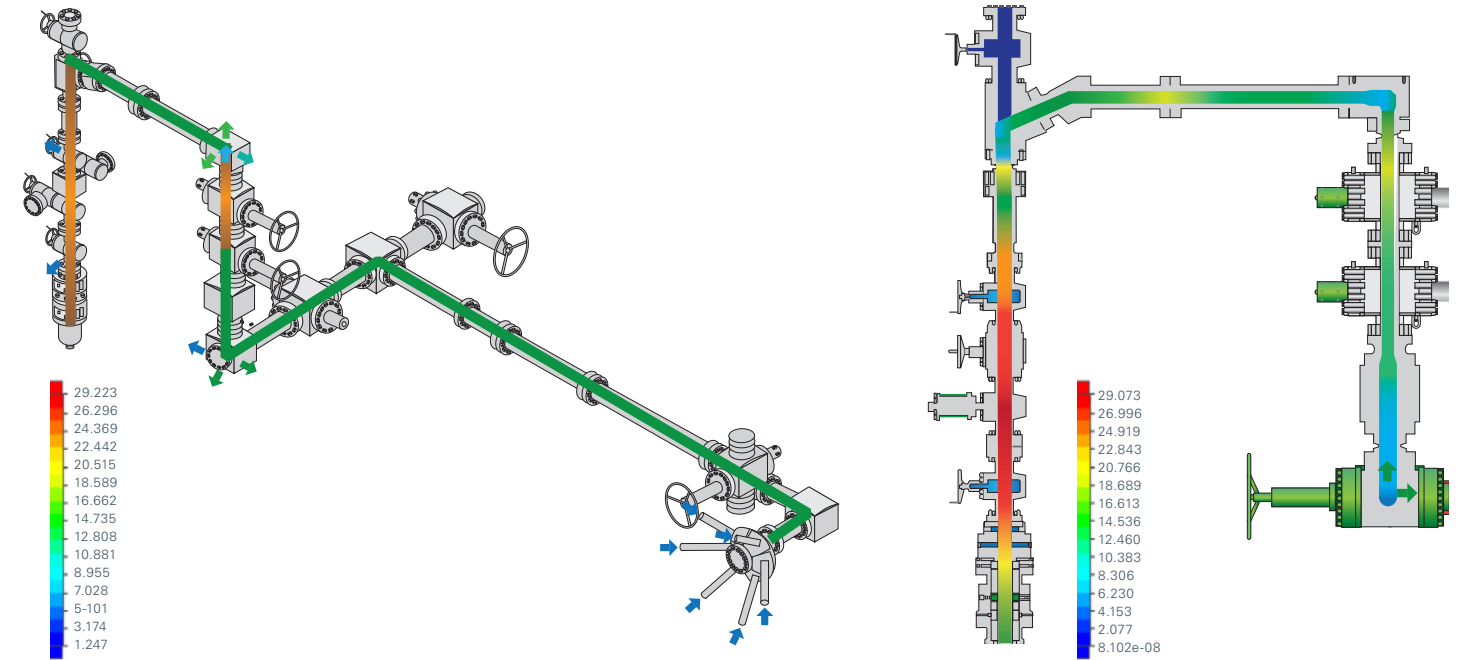
All equipment returned from location is completely disassembled, cleaned, and inspected by trained personnel. Consumable studs and nuts are discarded, and gaskets are never reused. Gate valves have all sealing elements replaced with premium seals designed to work in all harsh and unique North America climates.



Planning and Analysis

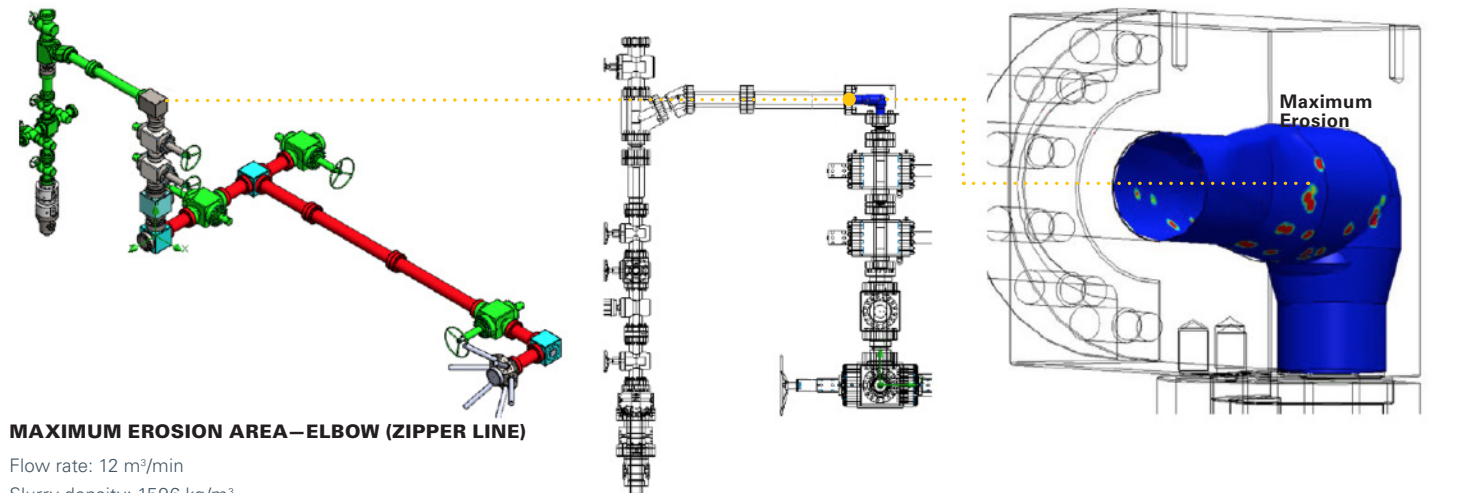
Project Preparation and Analysis

SPM utilizes Computational Flow Dynamics (CFD) programs to model the flow properties of a frac program in the specified Frac tree and Manifold System. Using unique customer supplied slurry density, lubricity, flow rates, tonnage, and duration SPM can calculate pressure drops, flow directions, and flow velocity. The dynamics are then used to model erosion predictions showing predicted area and depth wash.



Erosion Mitigation and Inspection

Using the application specific erosion predictions, SPM will work with customers to develop an effective and efficient Inspection and Erosion Mitigation plan. On high rate, high tonnage frac programs where erosional concerns are predicted by the CFD or past experiences, SPM will modify the installation of the manifold and Frac trees to allow visual access to key points in the system. By removing a blind flange during scheduled down time, we are able to assess the condition of the component and document the progression of any erosion. Predictions can be made on the advancement of the erosion and replacement schedules can be developed where required.



MAXIMUM EROSION AREA—ELBOW (ZIPPER LINE)

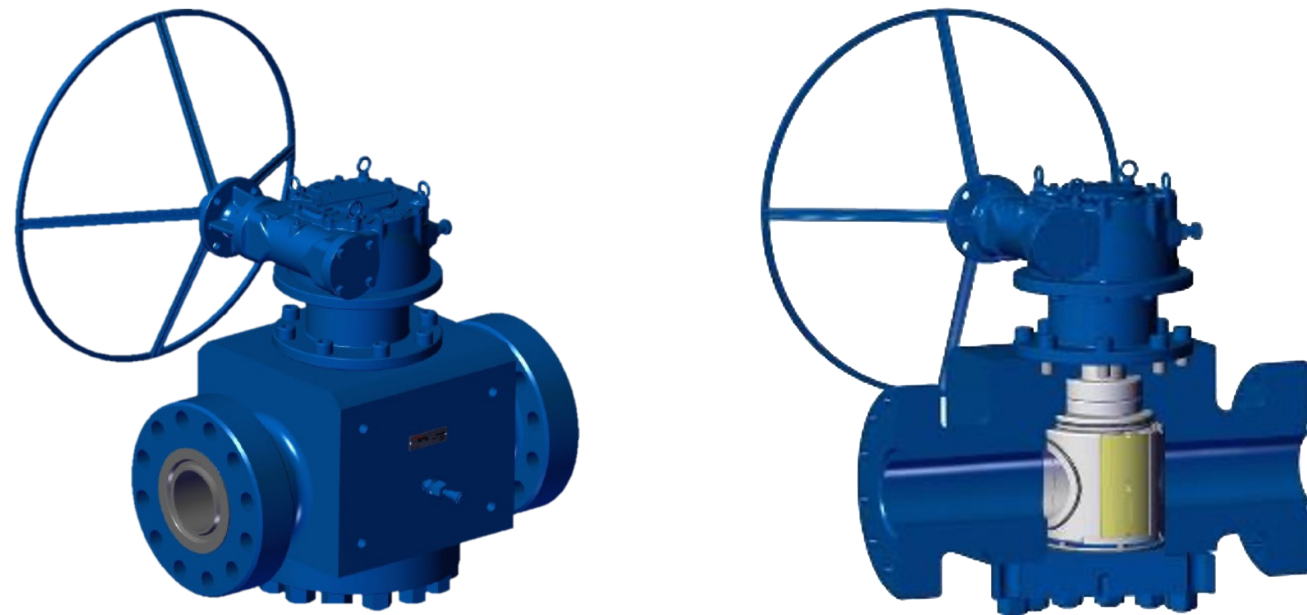
Flow rate: 12 m³/min
 Slurry density: 1596 kg/m³
 Velocity at high erosion region: 20.776 m/s at 15° impact angle
 Erosion for 44 stages of operation: 0.071 inch

7" Plug Valve

Durability with easy operations

A decades-proven technology, the SPM™ 7" Plug Valve is easily maintained, hydraulically or manually operated, and offers greater durability. Plug valves require less than 2% of the grease needed for gate valves, reducing labor and material costs. Our plug valves are lighter and more compact and have a smaller hydraulic actuator for faster cycle time. Closure requires minimal force, eliminating the potential of a valve-cavity pressure lock.

Available for Seaboard™ Vertical Zipper Manifold and Frac Stack.



1640RS Gate Valve

Designed for Tough Fracing

The Seaboard™ Model 1640RS Gate Valve is engineered for demanding frac operations environments. Designed with a forged body, bi-directional slab gate, pressure balancing stem, metal-to-metal sealing technology and stem back-seating capability, the Seaboard™ Model 1640RS gate valve's design has been rigorously field-tested to maintain the highest standards of quality. The one-piece slab gate's floating seats use line pressure to supply the sealing force. Stem packing is chemically inert, using spring energizing rings that require no adjustment or plastic injection.

Engineered for demanding frac operations

- Industry leading PR2 qualified gate valves designed for frac operations
- API 6A flanged ends
- Sizes: 4 1/16" – 7 1/16"
- Pressures: 10,000 – 15,000 psi
- 10+ years of field history (Ole' Reliable)
- Convertable between ball screw and hydraulic configurations



Seaboard™ Vertical Zipper Manifold

Advantages stacked high

The Zipper Manifold technologies allow for simultaneous operations across multiple wells for optimum efficiency. The vertical design of the Seaboard™ Vertical Zipper Manifold improves upon this efficiency by reducing the footprint and inhibiting the accumulation of erosive proppant in the manifold components.

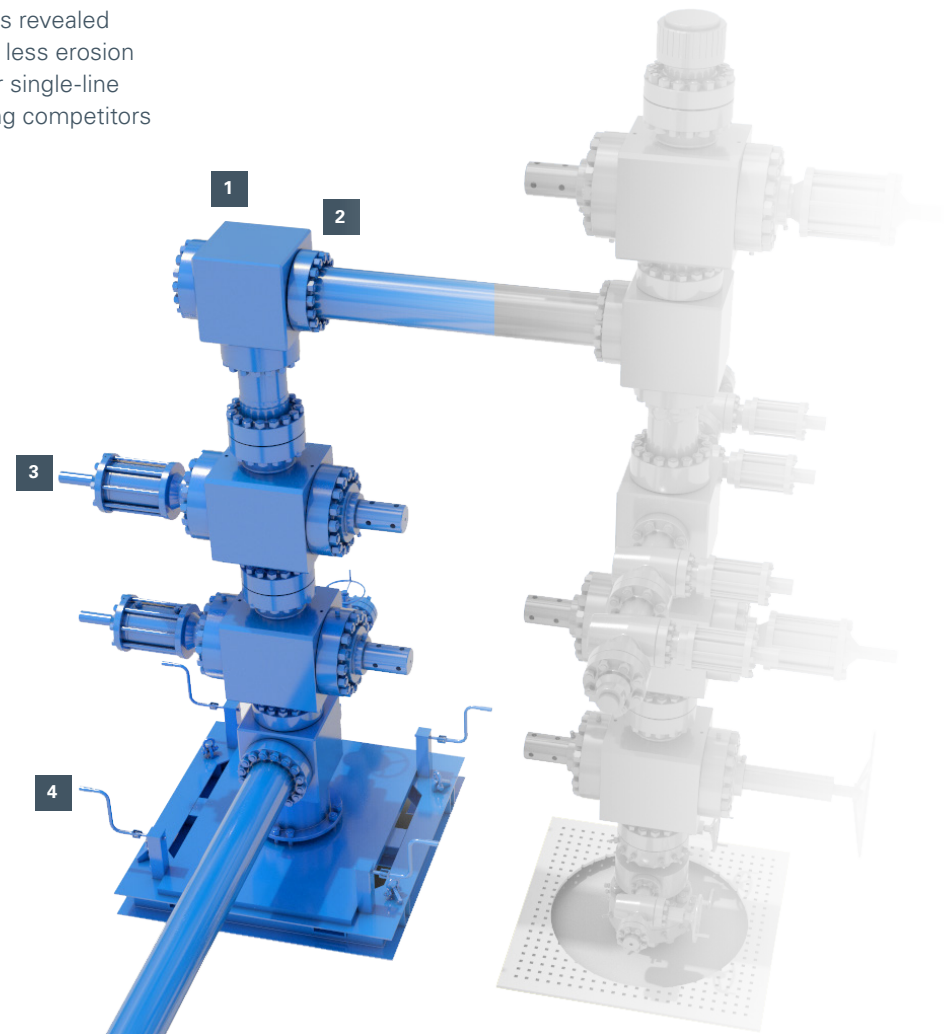
Available for rent, with service centers in every basin; fully inspected and rebuilt after every job.

Features

- Accommodates from 4" up to 7" connections up to 15,000 psi
- Temperature rating: L-U
- Employs standard API – 6A gasket for seal faces

- 1 Vertical design, smaller footprint
- 2 Single, large-bore outlet
- 3 Rotating spools for quick alignment
- 4 Adjustable skid with integral lifting points

A 2017 CFD analysis revealed approximately 70% less erosion compared to similar single-line designs from leading competitors



Seaboard™ Frac Stack

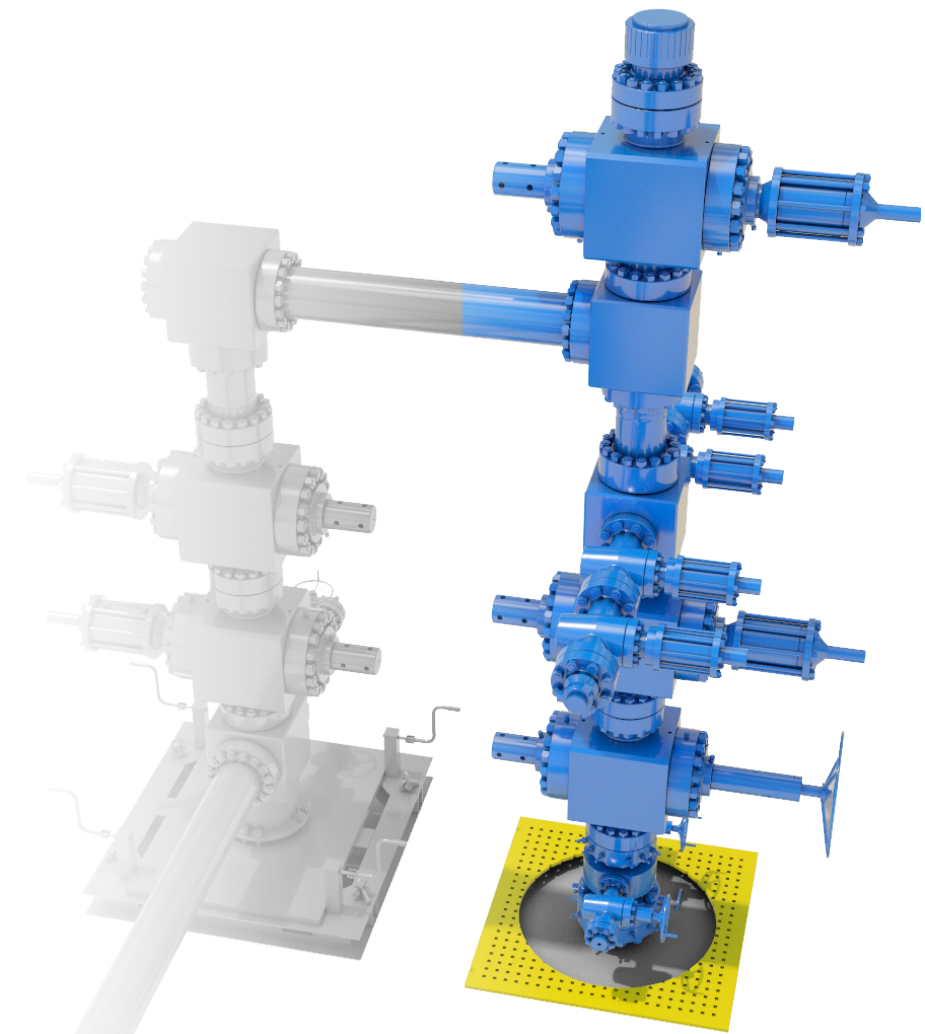
Simplicity finds the sweet spot

Greasing takes significantly less time, plus valves are easier and less costly to maintain with the Seaboard™ Frac Stack. Supported by qualified technicians, this integrated solution enhances safety while saving time and money. The single large-bore inlet of the frac stack replaces the multiple tie-in lines on a conventional frac tree, reducing non-productive time, labor costs, potential leak paths, and safety hazards.

Available with 1640RS gate valves or plug valves.

Features

- Design employs standard API-6A gaskets and accommodates 4" to 7" connections at 15,000 psi.
- Rotating flange on frac tree allows for quick alignment with the Seaboard™ OSL Frac Connection
- Options include accumulator, automated grease manifold, frac-ball launcher, and coiled-tubing frac heads.



SPM™ One Straight Line (OSL) Frac Connection

Simplifying the frac site even more

Engineering for demanding frac applications, the patent-pending design of the OSL allows for quick alignment between the vertical zipper manifold and the frac stack. This significantly reduces the amount of iron on the wellsite and has 88% fewer of connections. The single, controlled-torque connection replaces the 4-6 flow lines and safety restraints on a typical configuration.

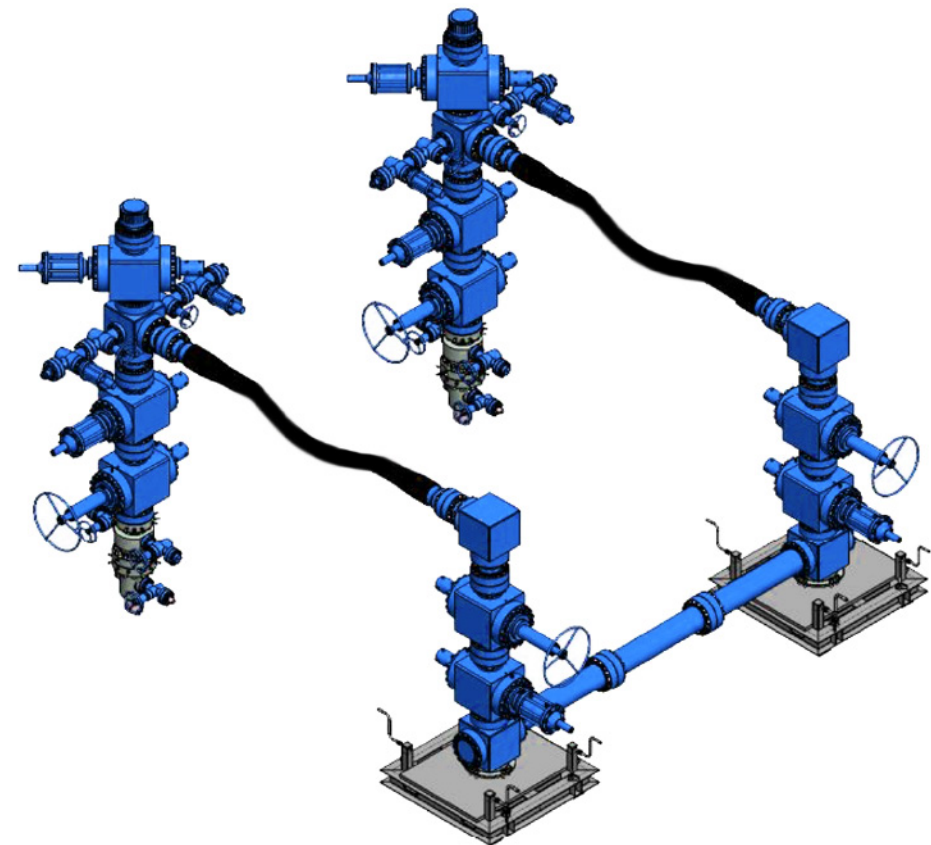
Available for rent with every basin, the OSL takes less even further.

Features

- Design allows standard API-6A gaskets and accommodates 4" to 7" connections at 15,000 psi.
- **Rigid or Flexible** 7 1/16" trunk line and isolation valves
- 7 1/16" crosses with rotating flange spools for ease of alignment
- Hydraulic and manually operated valves available

Benefits

- Fewer connections significantly reduce NPT, hazards, and potential leak paths.
- Single, direct line of flow minimizes fluid friction and pressure drop.
- Fit-for-purpose system for any well, condition, or basin



Available with SPM Flex Hose.

Quick alignment

Between vertical zipper manifold & frac stack

88%

fewer connections

Controlled torque connection

replaces the 4-6 flow lines and safety restraints on a typical configuration



2017 CFD analysis revealed ~70% less erosion vs. competitors' single-line designs

Automated Grease Manifold

Innovation in Lubrications

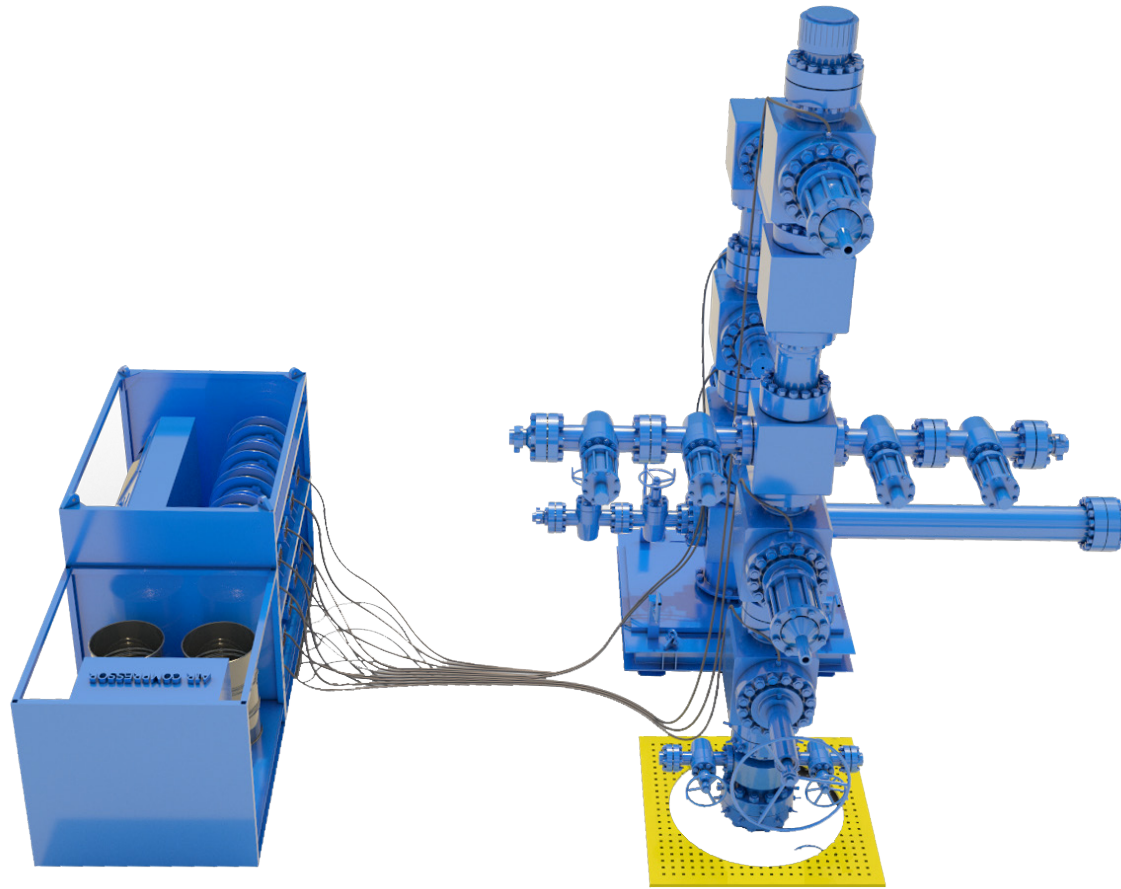
Designed to accommodate gate or plug valves, the Automated Grease Manifold improves safety and efficiency at the wellsite. With the pumping and distribution of valve grease controlled at a single manifold, the process is greatly simplified. This helps reduce labor costs and eliminates the need for employees to perform these functions at hazardous elevations for access to the frac tree.

Benefits

- Automation capability available to enable autonomous greasing, removing personnel from the red zone and increasing value-added time
- Manual or Remote Operated command center with multiple automated grease programs available
- Grease pumping and distribution is controlled at one manifold, reducing labor costs and eliminating the need to perform activities at dangerous elevations.

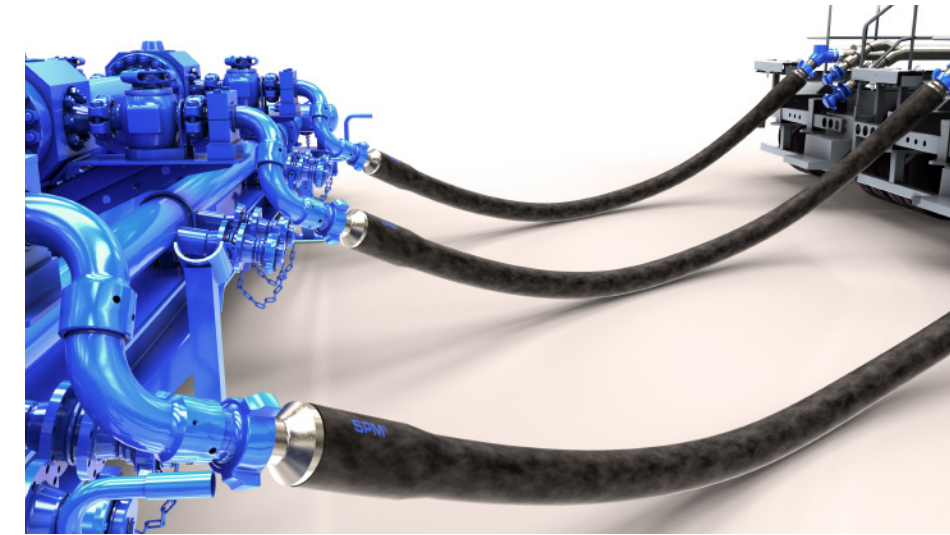
Features

- 3 wells / 15 valves is standard configuration system but can be configured for any number of valves on any frac tree
- Rated up to 15,000 psi, all components meet or exceed applicable API standards.
- Data recording capability to log quantity of grease used and history



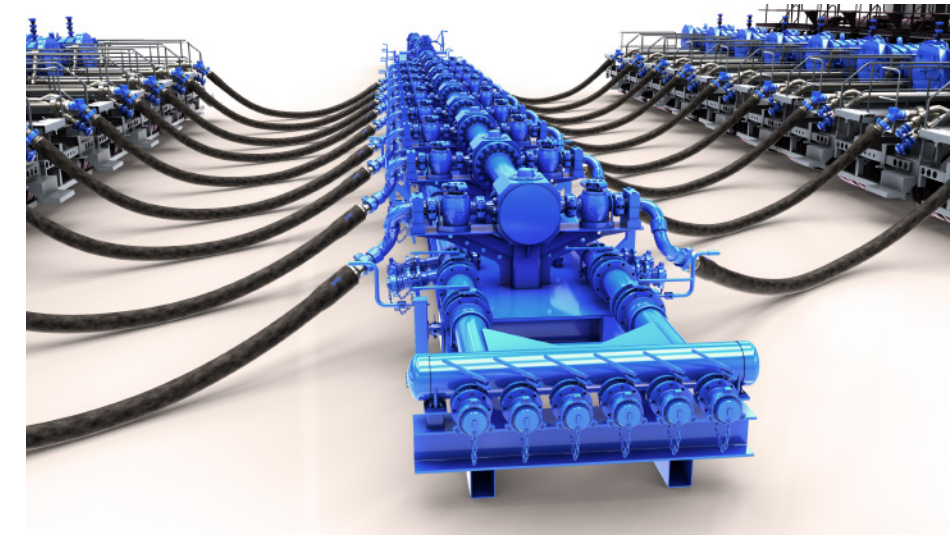
SPM™ High-Pressure Flex Hose

High-pressure hose enhances job efficiencies and reduces iron management costs



The SPM™ High Pressure Frac Hose from SPM decreases the number of iron pieces and connections, minimizing potential leak paths and streamlining iron management. Manufactured in accordance with API 7K standards, the high-performance hose features abrasion and corrosion resistant liners and specialized couplings, for reliable, long-lasting performance.

The SPM™ High Pressure Frac Hose can be paired with the Simplified Frac Iron System for an even safer and more streamlined large-bore design.



With fewer connections between the pump and manifold system, the SPM™ High Pressure Frac Hose helps reduce assets, potential leak paths, and non-productive time.

Design Features

- Available in 2-inch, 2.5-inch and 3-inch sizes
- Available in both hammer union and Safety Iron connections
- Abrasion- and corrosion-resistant hose material
- -13°F to 212°F operating temperature rating
- Detachable wing style featuring the industry-leading SPM™ EXL Wing Nut
- 15,000 psi working pressure and 22,500 psi test pressure
- Couplings utilize SPM™ stringent material specifications with higher yield strength for greater fatigue resistance
- Color wear indicators show hose damage severity
- Lifting safety clamps enable safer movement and handling
- Heavy-duty spiral wrap protects hoses from harsh external forces

Benefits

- Lower risk of potential leak points between pump and manifold system
- Reduced iron management, maintenance and inspections
- Enhanced field efficiency and economics
- Improved fluid dynamics and reduced pressure drop

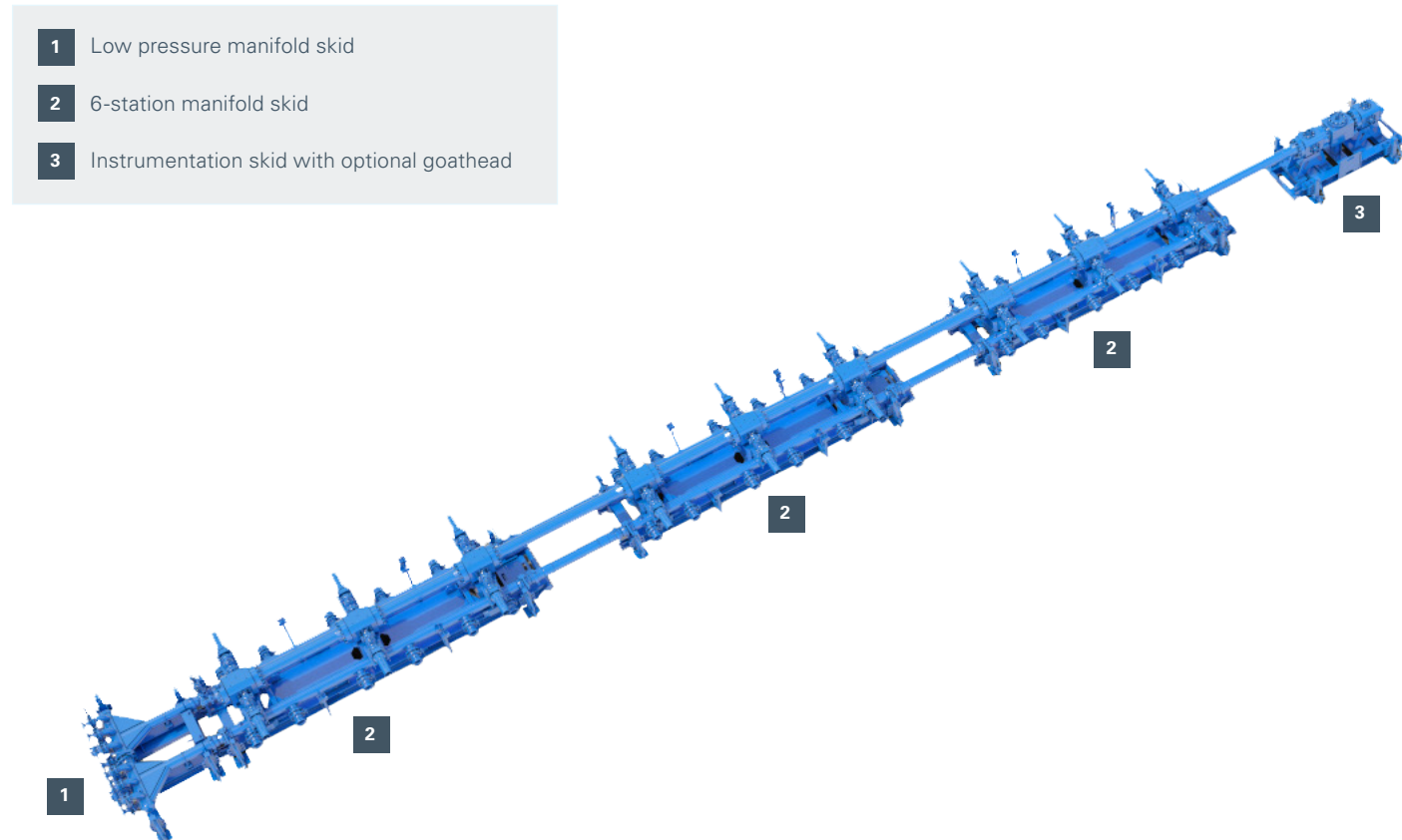
SPM™ Simplified Frac Iron

Traditional frac sites require multiple lines of iron, which increases rig-up time, labor costs, potential leak paths, pressure drop, and trip hazards. These operational challenges can stop production and compromise safety on-site.

With fewer connections, SPM's Simplified Frac Iron significantly reduces rig-up time to 3 hours or less and eliminates much of the ground iron. Its linear flow design minimizes pressure drop, and significantly reduces vibration of flow lines.

The system is available in both an all-skid modular system as well as a manifold trailer and skid configuration, each featuring a 7 1/16" 15,000 psi main line capable of providing a 123 bbl/min flow rate. The system is designed to connect directly into a zipper manifold trunk line, or an optional goathead can be installed to transition to traditional iron.

- Available with 12-station manifold trailer or 4-station manifold skids
- Optional 2-station extension is available to increase configuration to 20 stations
- Manifold skids and trailer feature robust SPM™ 3" 15K Safety Iron inlets
- Station-to-station spacing throughout manifold ranges from 7'-8'
- Total length of 18-station configuration is approximately 100-105' depending on variation



- 1 Low pressure manifold skid
- 2 6-station manifold skid
- 3 Instrumentation skid with optional goathead

Features

- Hammer-union connections have been replaced with robust API flange connections, improving reliability while enhancing safety margins and fastener redundancy.
- Low pressure manifold comprised of schedule 80 material and low pressure manifold mounted on tracks with the ability to slide and lock in place after positioning
- SPM's standard iron material spec utilized resulting in minimum strength of all pressure bearing components being 160% over the requirement in API-6A
- Skids feature manual jacks for installation alignment
- Available in both an all-skid modular system or a manifold trailer and skid configuration
- Connects directly into a zipper manifold trunk line, or an optional goat-head can be installed to transition to traditional iron
- Available with 12-station manifold trailer, 6-station manifold skids, 4-station manifold skids
- Manifold skids and trailer feature SPM 3" 15K Safety Iron inlets
- Station-to-station spacing throughout manifold ranges from 7'-8'
- Total length of 18-station configuration is approx. 100-105'

Benefits

- Significantly reduces rig-up time and eliminates much of the ground iron
- Decreased pressure drop and reduces vibration of flow lines
- 7 1/16" 15,000 psi main line capable of 123bbl/min flow rate at 42fps

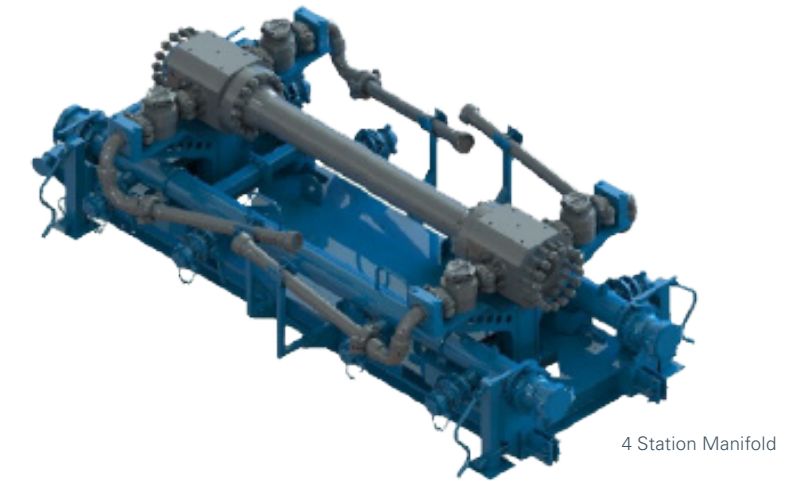
Processes

- 7" valves recommended to be inspected on a 6-month interval; 7" blocks and spools within main line recommended for full inspection on 12-month interval

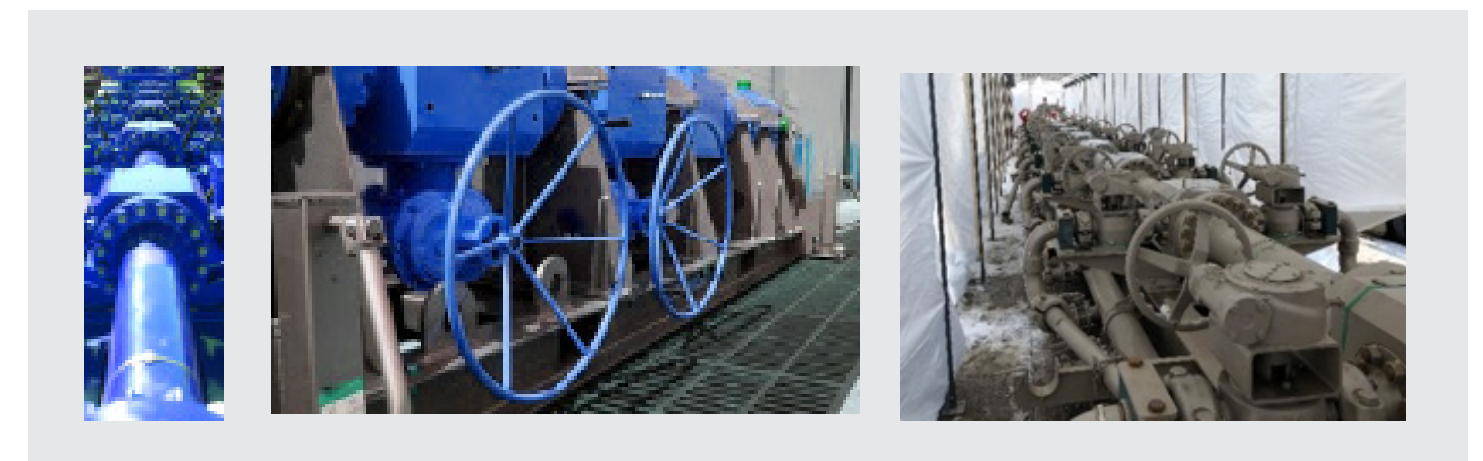
CONFIGURATION OPTIONS

Flexible configurations to meet customer needs while maintaining consistent component parts for improved aftermarket support

12 station trailer, 6 station skid, 4 station skid



4 Station Manifold



Simplified Frac Iron

North American Case Study.

Traditional frac sites require multiple lines of iron, which increases rig-up time, labor costs, potential leak paths, pressure drop, and trip. Comparing traditional rig up to the Simplified Frac Iron with eight (8) different tier-one customers, they experienced an average of 88% reduction of potential leak paths, rigged up in three hours or less, and a significant reduction in the number of valves utilized with the 7" plug and check valves.



12

employees



**12
HOURS**

~75%
**INCREASE IN
OPERATIONAL
EFFICIENCY**



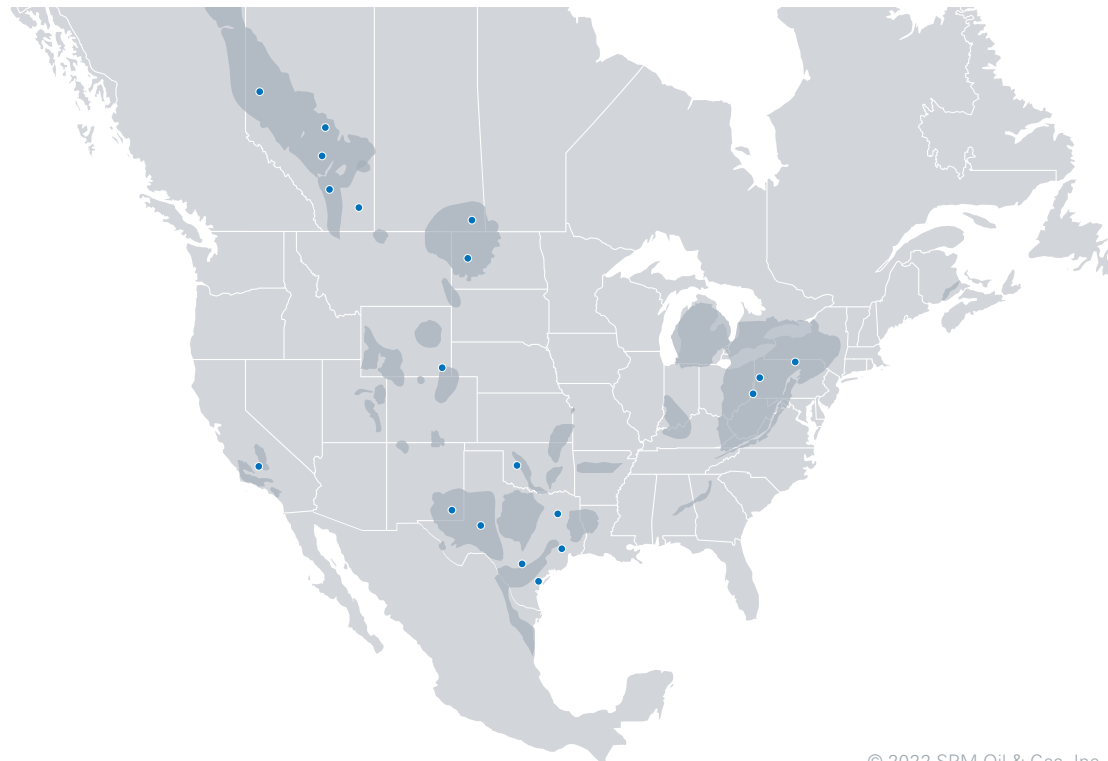
3

employees



**4
HOURS**

~38 FLEETS OPERATIONAL IN EVERY MAJOR SHALE PLAY



We approach every aspect of your pressure pumping operation with an engineering mindset, so you can overcome challenges across your operation, slash downtime and compete to win.

For additional Pressure Pumping support, please contact your SPMTM Edge Engineering Field Assist Team.

techservices@spmoilandgas.com

T +1 817 248 2703

www.spmoilandgas.com

**GO BEYOND FIXING
TO SOLVING**

Repairs, parts and support

We find the root cause to minimize NPT and maximize equipment life

**OPTIMIZE YOUR ASSET
UTILIZATION**

Empowerment tools

Our technologies allow you to streamline inventories and maintenance

**GAIN INSIGHTS
FOR IMPROVEMENTS**

Engineering expertise

Our experts come onsite to analyze issues and train your people

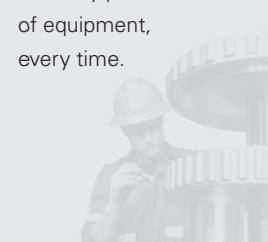
SPMTM Edge Service Centers & Centers of Excellence

We have the largest global footprint covering all major basins, including a US network that puts us no more than 3 hours from anywhere you're working. Our service centers are staffed with certified refurbishment experts and embedded repair teams to operate mobile repair units. Plus, we constantly reinforce our technical expertise through ongoing training and certifications.



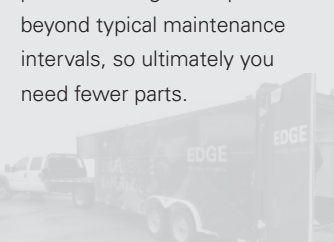
Engineered Repairs

Our engineered processes are audited, tracked and evaluated through our 13-pt flow, 16-pt pump and 19-pt fluid end inspection and repair procedures, all to ensure your equipment returns to the field ready for optimal performance. We give you full visibility into our engineering process on every piece of equipment, every time.



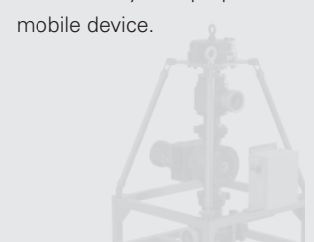
SPMTM EdgeX Delivered Parts & Onsite Stores

From plungers to valves and seats to packing, our expendable parts are built to take abuse under the harshest operating conditions and keep you up and running. Everything can be delivered off the shelf, or we can set up SPMTM EdgeX Delivered to keep the critical parts you need always on hand at your site. Our industry-leading parts are designed to perform beyond typical maintenance intervals, so ultimately you need fewer parts.



SPMTM SafeEdgeTM Rental Systems

We've developed the industry's leading safety systems to help you maintain site integrity and keep your people safe. The SPMTM Flowline Safety Restraint (FSR) System is the only solution tested on a full scale simulated flowline failure to validate performance. The SPMTM SafeEdge ARC with remote access allows you to control pop-off pressure from the convenience and safe distance of your laptop or mobile device.



SPMTM Edge Customer System

Our multi-layer learning platform provides training documents, procedures, guides, tools and more—everything you need to educate your field teams and turn them into maintenance professionals. We continue to develop new digital resources to empower our customers, including a portal that will soon provide inventory visibility and give you e-commerce access to replacement parts.



SPMTM RFID/AMP

SPMTM Edge delivers advanced technologies to help you track assets, improve efficiency and ultimately reduce the time and man hours required to manage inventory by up to 97%. Our SPMTM RFID/AMP system gives you full visibility into your inventory to track equipment movements. You get full traceability of the certification process based on your established standards, including maintenance records to ensure compliance, failure modes, inspection records and additional reports.



SPMTM Edge Engineering Field Assist Team

Our specialists will come to your worksite, evaluate your operational challenges and deliver solutions that strengthen your business and your people. Our field teams don't just replace parts; they solve problems by finding the root causes. Wherever you are, whenever you need us, we have engineering experts worldwide ready to deploy to your site, resolve downtime issues quickly, and train your crews to recognize and prevent impending failures.



North America Frac Rental Locations



UNITED STATES

Midland, TX

7010 W Interstate 20
Midland, TX 79706
T +1 432 580 3887

Fort Worth, TX

601 Weir Way
Fort Worth, TX 76108
T +1 800 342 7458

Sayre, PA

36 Progress Lane
Sayre, PA 18850

Buckhannon, WV

52 Norwins Drive
Buckhannon, WV, 26201

CANADA

Grande Prairie, AB

8801 99th Street
Clairmont, AB T0H 0W0
T +1 780 567 3857

Edmonton, AB

4737-97 Street NW
Edmonton, AB T6E 5W2
T +1 780 439 4833

Estevan, SK

116 Supreme Street
Estevan, SK S4A 1C8
T +1 306 634 6325



SPM™ Oil & Gas

A Caterpillar Company

601 Weir Way
Fort Worth, TX 76108
USA

T +1 800 342 7458

F +1 817 977 2508

www.spmoilandgas.com

Copyright 2022 SPM Oil & Gas, Inc. All rights reserved. SPM is a trademark(s) and/or registered trademarks of SPM Oil & Gas, Inc. Certain features of some of the products disclosed in this document may be protected worldwide by patents pending and registered in the name of SPM Oil & Gas, Inc.

Copyright 2022 SPM Oil & Gas PC LLC. All rights reserved. Seaboard is a trademark and/or registered trademark of Seaboard International, Inc. Certain features of some of the products disclosed in this document may be protected worldwide by patents pending and registered in the name of SPM Oil & Gas PC LLC.

All confidential information in this document, which must not be copied in whole or in part, in any form or by any means, and the information in it must not be used for any purpose other than the specific purpose for which it has been provided without the prior written consent of the copyright owner.