

Single Entry Multi Lateral Jetting Systems

Maple Group is a company focused on reversing the global trend in declining oil production. Through a combination of 'New Technologies' and 'Strategic Alliances', Maple are now 'enabling' their Clients with a variety of opportunities, not only to maintain their current oil production, but in many instances, actually increase it.

While it might be said, that oil 'is' still being discovered in new and untapped reserves throughout the World, what many people are not always aware of, is that those reserves are more often than not located in ever harder to reach locations.

Deeper water, difficult terrain and problematic reservoir environments, are just a few examples of the issues being faced today; issues that are ultimately contributing to more and more complex operations, an increasing need for newer, more advanced technologies and inevitably resulting in higher oil recovery prices.

"But what about those existing reserves?," many people ask; "What is happening to all of those hundreds of thousands of Well's throughout the World that are already there?," well, actually in many cases, not a lot.

Globally, on average, more than 50% of the oil from those existing reserves is never recovered at all. Pressure and fluid depletion; poor formation porosity; wellbore damage and certain oil qualities, are just a number of underlying issues that can cause the oil to remain trapped within the reservoir.

Maple Group however, is now providing newer solutions; through their ability to re-enter those existing marginal fields, and to accelerate the extraction of as much of the trapped reserves as possible.



Enhanced Oil Recovery

Known collectively as 'Enhanced Oil Recovery' solutions, Maple's main objective is to become a global leader in this field of expertise; sourcing a variety of new proprietary technologies, that can work alongside those of their own; thus creating a total EOR solution for their Client's.

Through a number of strategic alliances and international joint ventures, Maple are now able to offer a full range of complimentary services; assuring seamless operations and some impressive enhanced recovery results.

From the initial reservoir engineering and 'well' selection stages; through to fluid compatibility, equipment applications, and the post treatment testing; Maple are now able to provide a very comprehensive operation, breathing new life into mature fields and unlocking those valuable reserves.

Multi-Lateral Jetting

Multi-Lateral Jetting Technology in its current form today, was actually invented during 2007, in Alberta Canada by a company known as Petro-Surge. An invention that was borne through the need to drastically improve an older EOR technology, more commonly referred to as Radial Jetting.

While Radial Jetting has already been around for more than 20 years, the technology as a whole, has never really progressed much from those earlier days; most probably due to limited demand for advanced EOR technologies internationally, as well the fact that Radial Jetting was mainly focused on the simpler domestic Wells, of North America; that was until now;

As the World's demand for oil increases and the global reserves decline, there has been a realization, that abandoning all of those mature, under produced oil fields, is no longer an option and EOR technologies now appear high on the list of interest, for both the major International Operator's and the smaller ones alike. Not only that, numerous Governments are also seeking a push in finding newer solutions, to enhance their domestic reserves and to provide cheaper, local energy to their people.

Under an exclusive license agreement, Maple are therefore able to offer their own version of this revolutionary technology; throughout a number of regions; and under the trade-marked name of Single Entry Multi-Lateral Jetting, or SEMJet for short.

With a number of years experience in Seismic Operations, Conventional Drilling and also Radial Jetting, the original founder of Petro-Surge noticed the huge potential in the Radial Jetting concept, of boring additional ultra short radius, multi-lateral passages off an existing wellbore, and effectively creating a larger down hole surface area and exposing more of the producing formation.

This ability also allows a physical down-hole bypass, of some of the main factors in production depletion, such as near well-bore damage; pore plugging and fracture plugging, all issues that are prevalent in both new Wells and old Wells alike.

Almost two years of research and design was then applied to a create a New Generation system, and to overcome all of the inherent problems associated with the more traditional Radial Jetting services that were still operating in the market.

After initial release in Canada in January 2009, Maple Group are now also positioned to offer their International systems with immediate effect.



Health, Safety & Environment

The long-term business strategy and success of Maple is built around the ability to continually improve the quality of all their products and services; with an emphasis being placed on protecting the health and operational safety of its staff, as well as those working alongside. In addition Maple and Petro-Surge are jointly committed to the research and development of additional environmentally friendly EOR technologies and services.

Technological Advantages

Unlike their competitors, who are restricted by limited capability with their own Radial Jetting systems? Maple's SEMJet Technology is far more advanced, in regards to both its overall design and it also being multi-functional. Combining all the key hardware and service components required for a successful operation, into a single unit has further raised the interest of SEMJet to numerous Clients.



By design, Maple can now deploy a single system to perform all the services that previously required 3 or 4 companies. This instantly increases the efficiency of any international operation, by reducing the number of personnel required; eliminating any misunderstanding between the services and their data; and ultimately cuts down on the operational cost to the client.

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In addition, Maple provides a range of patented Down-Hole Directional Tools and in-line casing mills under their exclusive license; tools that ensure a greatly reduced operational time spent in the well-bore.

Through its design, that again incorporates a number of functions within a single tool string, Maple need just 1 run, to mill a section of casing and jet out 4 horizontal laterals up to 100m in length; whereas traditional Radial Jetting services require 8 runs, or more to perform the same operation.

There are obviously a number of advantages of this capability over its competitors; none more so than cutting down on any prolonged periods of time during which a service company is tripping in and out of the hole with various tools and tubing. A reduction in the risks, associated with damaging a well, or being stuck in the hole is sometimes enough for a Client to choose the most effective system such as SEMJet.



Summary

The SEMJet technology has repeatedly demonstrated its ability over a number of similar, but less efficient competitors. In its own right, this system could be deployed as a standalone unit, increasing the overall drainage radius of a wellbore, and thus increasing the access to additional recoverable reserves. However, Maple aim to provide more than this, by supplying the SEMJet service not only as an advanced EOR function, but as a unique delivery system for other proprietary enhancement technologies, and thus, maximizing the results for all their Clients.

System Overview

- Built in wire-line logging unit for remedial pre-jetting operations, casing logs & reservoir surveys.
- Stainless steel micro-tubing unit for multi functional tool deployment (scrapers, brushes, cameras) jetting & fluid injection.
- BOP, Flow spool, Isolation valves & Flow-lines, for Well control, Clean-ups & Testing.
- Automated high pressure fluid pumps and suction tank; for jetting, spotting acid, chemicals & mini-frac capabilities.
- Automated low pressure fluid pumps and suction tank; for spotting acid, chemicals or enzyme (micro-biological) technology.

Application Overview

- Gamma-ray, Casing collar locator, Cement bond log & Gyro services (GR, CCL, CBL).
- Single Entry – Casing reaming & Multi-lateral directional service.
- Lateral jetting service; creating an increased drainage radius off the wellbore, enhancing the ability of extracting recoverable reserves.
- Lateral jetting service; creating an increased injection area off the wellbore; precisely placed laterals for increased acid-frac potential; for Water, Steam, Nitrogen or CO2 flooding operations; or for enzymes (micro-biological) technology.

EOR Alliance & Services

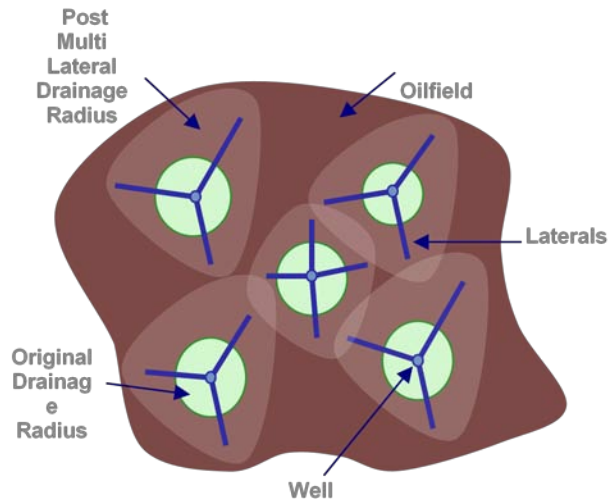
To maximize the overall effectiveness of the SEMJet Technology for their Clients, Maple have embarked on an ambitious plan to build a structured and highly versatile EOR Alliance.

By incorporating a number of service capabilities into a single unit was the 'first step' in being able to provide a total solution; the 'second step' however was to source a variety of other, unique and proprietary technologies to work alongside, both domestically and internationally.

Therefore, Maple are now positioned to offer, Reservoir Analysis & Feasibility Studies; Specialty Fluid, Chemical & Micro-biological Solutions (Enzymes); plus a full Clean up & Multi-phase Flow Metering systems for Production & Flow Rate Testing.

Operational Advantages

As indicated throughout this document, Maple’s technology is far more advanced than any other system on offer from their competitors, while not forgetting, that it can also provide a variety of additional functions and deploy a number of proprietary EOR applications, to maximize its utilization once on location. Although in summary;



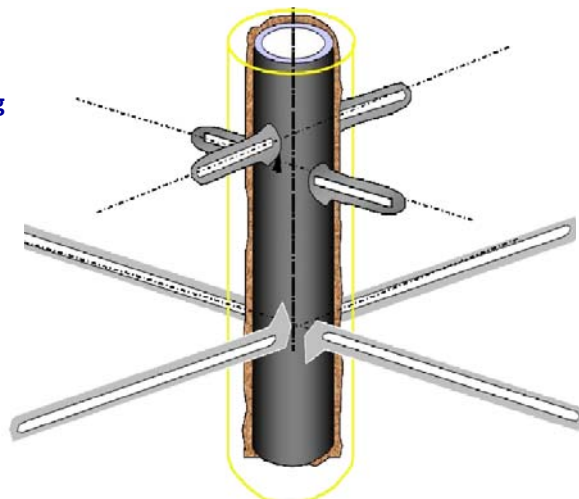
The principal purpose for jetting lateral channels, is to penetrate the formation far beyond any wellbore damage and to improve the access to any trapped reserves; it also provides a reduction in any pressure drop in the near vicinity of the well, thereby improving the drainage radius and flow profile of fluids into the wellbore.

This process ultimately offers the Client a huge potential in increasing the productivity of any mature reservoir that maybe either damaged or irregular; linking together those areas of the formation effected.

All channels jetted out from the central wellbore will far exceed the distance created by traditional perforating by up to 80m. Each lateral should also be approximately 4 to 5cm in diameter, depending on the formation.

In addition, pre-engineered and specifically placed lateral configurations can vastly improve the number of options available to a Client that is considering reservoir flooding program.

**Traditional Perforating
average up to 20m**



**Multi-Lateral
Jetting up to 100m**

Operational Process

SEMJet is a service that provides a number of new opportunities to the Client, even though it is made up of traditional services found regularly in conventional drilling and well-service operations. The key however, to this technology being an overall success is the way that SEMJet is packaged, with a number of services into a single multi-purpose system; together with the utilization of the patented, Down Hole Directional Tools and an ability to deploy additional proprietary EOR technologies alongside

- A service rig, pulling unit or snubbing unit is used to retrieve the production tubing and submersible pump, if applicable.
- Service rig will make up the SEMJet BHA tools in tandem; first the casing mill & then the Down Hole Directional tool above it.
- Maple will rig up wire-line & run into the hole with any of the following, CCL, GR, CBL, as per the Clients requirements.
- After logging, pull out of hole & set aside the wire-line equipment.
- Pick up BHA & run in to required depth, as per logging results.
- Circulate thru tubing & 'mill' a 5 to 10 inch section of the casing.
- Drop down 3ft to align Directional tool, with the milled section.
- Rig up BOP & tubing injector head; drop an activation ball.
- Pump the ball into the tool seat; pressure up & activate the Down Hole Directional tool.
- Run in hole with jetting assembly through the BOP on micro-tubing, while pumping a disposable fluid at a low rate.
- At depth, switch Jetting fluid to one that has been selected during the Well Engineering stage.
- Jet a lateral to desired distance & pull back into tubing.
- Rotate tubing 90deg's, Jet next lateral.....continue process until all 4 laterals are completed.
- If selected to do so, switch fluids at surface and re-enter each lateral to spot any in-situ acids, traditional acids or enzymes.
- In the event that the Client requires confirmation of 90deg orientations a Gyro can be run on wire-line, locating into a key within the BHA. (A directional monitoring system is currently under development as part of the jetting system and nozzle)
- In the event 8 or more laterals are required, the casing sections are all milled out first, from bottom up; before running back down to jet laterals at each destined target.



Economical Advantages

Regardless of any operational benefits that new technologies may offer today, the most important factors considered by many Client's are always the economical ones. Here again Maple's SEMJet service can hold its head up high and claim a long list of economical advantages.

- Almost immediate indication of increased recoverable reserves can be seen, after the insertion of the new laterals; with average production improvements of 288%. Calculated from a range of successful operations across North America with 50% to 500% increases in many instances.
- Accelerated increase in production can also be achieved by applying other EOR technologies in conjunction with Maple's SEMJet system, without having to call out any other Service companies.
- SEMJet programs can replace the more time consuming Infill Drilling campaigns; with 4 to 8 laterals, or more being performed within a single wellbore in less than 24hrs.
- Maple would provide a maximum of 2 trucks and 4 personnel, to complete all the services that would normally be provided by 4 different service companies and up to 10 personnel.
- The overall cost of jetting 4 laterals and injecting an in-situ type acid solution, into precisely the required areas; is on average, ¼ of the cost of traditional acid stimulation operation and all the equipment required to inject it.
- The precise placement of large bore channels, increases the overall reservoir face exposed and maximizes the injection performance related to Water, Steam, N₂ or CO₂ flooding; reducing the amount of compression equipment required on surface.
- Overall field life can be regained; through the unlocking of recoverable reserves and ultimately increasing revenues that were, in many cases were never budgeted for.
- Multi-Lateral channels allow for a more stable and consistent draw down on the reservoir; eliminating any further damage to the near wellbore areas and therefore reducing the need for additional stimulation operations.
- Reduces the chances of water coning and therefore negates the need for additional, expensive surface separation and water disposal equipment.
- Improves the operational efficiency and performance of any submersible pumps used; due to a more consistent and sustained oil production.
- Delays indefinitely, the high cost of abandoning wells and fields, that were deemed totally depleted; increasing the overall utilization of any field production facilities.
- High on the scale of environmentally friendly services, with a small footprint; limited number of personnel; and short period of time required on a location.
- Multi-Lateral Jetting, enables the Client to revisit marginal fields, deemed un-economical or so severely depleted that they were considered as abandonment candidates.

Summary

With an abundance of oil still remaining trapped in reservoirs throughout the world, and the demand for oil on the rise, it was only a matter of time that a company would come up with an economical solution; a solution to unlock those recoverable reserves and one that is provided at a reasonable cost.

Quality Assurance and International Support

It was recognized early on, that the key to building a successful business around a new technology, was the selection of World class companies to assist in the Design, Engineering and Manufacturing stages.

Globally exclusive agreements, were therefore entered into with two companies to provide SEMJet proprietary components; NOV Hydra Rig for the Multi-Lateral Jetting Units and Hunting Energy Services for the Down Hole Directional systems.

In addition, like many new technologies being promoted on a global basis, the after sales service needed to be established and available also. Remote and hostile environments are common place in the oil industry, as are repairs, redressing and modification requirements. Regional support will therefore be made available from various International locations, and where these two major organizations (NOV & Hunting) have parts and service facilities.

Licensing & Investment Opportunities

Maple Group (Hong Kong) Limited, is a privately owned company that is keen to expand and therefore broaden its reach into the International markets. Understanding that there was a need for EOR solutions was their initial reason to introduce the new generation SEMJet Technology; however by offering the service under sub-license agreements is now their way of ensuring it reaches numerous Clients throughout the industry quickly.

Maple are therefore looking for experienced International Companies to offer their services through; either as Joint Venture Partners, or as Independently Operated Sub-licensee's.

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