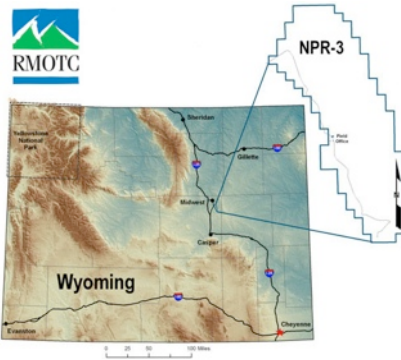


AOT™ Deepwater Testing Brief



STWA-RMOTC Harsh Environment Applied Oil Technology Testing

AOT™ Deepwater Simulation Testing

On September 16, 2010, STWA, Inc. met on site with representatives from the U.S. Department of Energy (DOE), contractor field operations personnel and a source manufacturer for review of the upcoming testing to commence at the DOE's RMOTC facility within the Naval Petroleum Reserve No. 3 (NPR-3) located 35 miles north of Casper, WY.

The purpose of this meeting was to review and determine testing logistics, parameters, blueprints, cost estimates and schedules related to all parties involved to ensure parity and successful establishment of timelines and objectives to be achieved.

There is a direct correlation between the time and expense of extracting and transporting crude oil with its viscosity. STWA aims to provide a turnkey solution to make petroleum transport providers and wholesalers more efficient and profitable.

The Company will be using a field-scale, multi-phase flow loop at Naval Petroleum Reserve No. 3 (NPR-3), Wyoming managed by the DOE's RMOTC for simulating real world conditions associated with offshore oil production for upcoming testing of its Applied Oil Technology (AOT™). The testing at the facility will provide data from which the market value and pricing will be derived.

About the Facility “Deepwater on Land”

Originally planned in 1998, with construction beginning in 1999, the “Harsh Environment Flow Assurance Test Facility” was created to mimic underwater sea conditions for the testing of new technology for mitigating risks to productivity and pipeline integrity.

The Naval Petroleum Reserve No. 3 (NPR-3) was chosen for its low ambient temperatures, terrain character, and existing oilfield infrastructure. At this facility, the RMOTC can simulate the harsh conditions typical of deepwater environments, enabling testing of new technology with relative ease.

Research and Development opportunities of land-based testing facilities are usually constrained in their length, terrain and ambient temperatures. However, this particular facility is ideal in its construction and configuration in that it allows for a 5-mile total length, set in 5 sections, and at a buried depth of 4ft. The test loop is able to recreate subsurface conditions experienced by offshore production, with access-points on each section of the 5-mile line.

Rated at 3600psi, the six-inch diameter test loop has 5 sections (3 will be used in the upcoming testing for a total length of 22,000 feet) and is ideal due to its ready supplies of crude oil, natural gas, electricity and large, customizable liquid storage capacity.



AOT™ deepwater testing will utilize these test loops to the fullest advantage, with measuring and monitoring equipment at points along the line, feeding pre-test and post-test data back throughout the testing process.

The versatile facility is able to yield key data, enabling a better understanding of the benefits and their market value yielded by scaled-up testing of AOT™ technology, taking it from the laboratory to simulated deepwater conditions.

OVERVIEW

THE VISIT

On Sept. 16, 2010, STWA met with representatives from the U.S. Dept. of Energy and a source manufacturer at the Rocky Mountain Oilfield Testing Center in Casper, WY to review the upcoming testing of the Company's AOT™ technology.

THE FACILITY

The Deepwater test loop was created to mimic underwater harsh conditions, common to production fields.

TEST OBJECTIVES

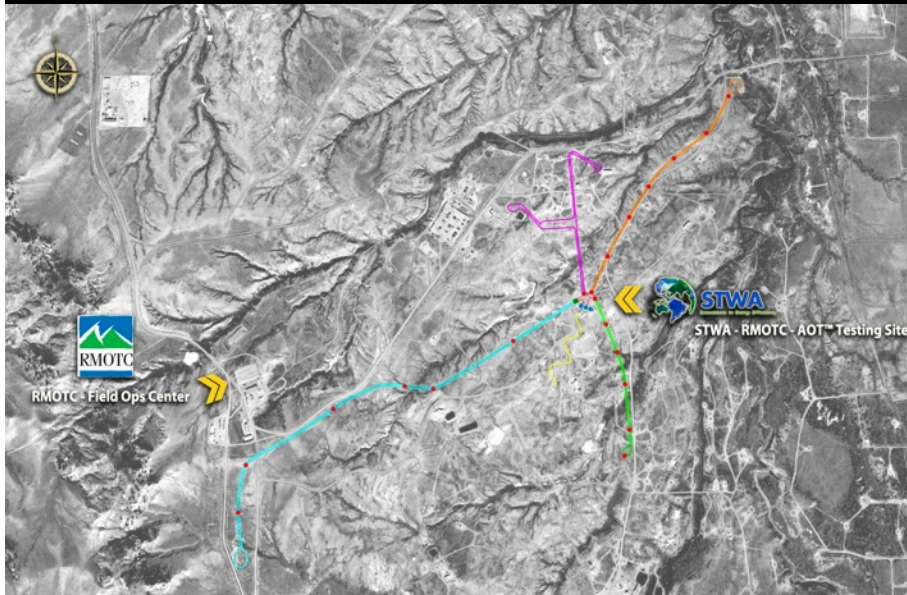
The testing will yield critical data for recording and analysis, important for value-chain propositions.

FACILITY DETAILS

The facility is able to recreate subsea temperatures and pressures with monitoring equipment capabilities perfect for testing the transient effects of AOT™ at large scale, laminar-flow conditions.



RMOTC Field Operations Headquarters
Naval Petroleum Reserve No. 3 (NPR-3), Wyoming



ABOUT RMOTC:
ROCKY MOUNTAIN OILFIELD TESTING CENTER



RMOTC is an energy testing center that partners with industry to test new ideas and products that lead to increased recovery or reduced operating costs. RMOTC's test site is a 10,000-acre U.S. Department of Energy facility located within Naval Petroleum Reserve No. 3 (NPR-3), also known as Teapot Dome Oil Field, about 35 miles north of Casper, Wyoming.

Field Testing | Technology Transfer | Demonstration | Neutral Environment
www.rmotc.doe.gov

STWA AOT™ Test Objective Data Gathering

The U.S. Department of Energy's Rocky Mountain Oilfield Testing Center (RMOTC) facility for simulated deepwater testing is ideal for controlled testing conditions for STWA's Applied Oil Technology (AOT™) in that, like a laboratory, it enables finite control over testing parameters, but on a scale unachievable in a laboratory.

AOT™ technology has been successfully developed under laboratory conditions and tested in state-of-the-art facilities. The RMOTC test facility is the next natural step in scaling-up this technology for commercial use.



Dr. Rongjia Tao & personnel onsite, running initial calculations for infrastructure requirements.

The testing will begin with benchmarking the many variables and parameters to establish a baseline value of the line with the AOT™ unit turned off. Once those measurements and values have been recorded and analyzed, the unit will be turned on, and the initial values will be recorded.

The initial test data will be measured against the baseline values to determine effectiveness and to provide a starting point for the rest of the data collection period.

After the initial data has been collected and analyzed, the unit will be adjusted and data recorded repeatedly for a predetermined set of voltage, amperage, polarity shifting, pulse duration(s), horsepower settings, flow rates, temperatures and other associated factors under laminar flow conditions.

The testing period for this initial run will take place over approximately 5-7 business days, and yield data and parameters from which AOT™ value can be better established under controlled, scaled-up conditions.

About the RMOTC Facility Characteristics

Constructed in 1999 to replicate deepwater conditions on land, the facility offers STWA some distinct advantages and useful attributes, key to AOT™ current development.

The test loop has the following characteristics:

- 6" Single Pass Line
- 30°F Temperature Subcooling
- Ambient Temp of ~ 45°F
- 3600psi Max Operating Pressure

The Naval Petroleum Reserve No. 3 (NPR-3) is now used as a test site for emerging and developing technologies to address critical energy issues.

The Naval Petroleum Reserve No. 3 (NPR-3) Oilfield is a 10,000-acre

operating oil field offering a full complement of associated facilities and equipment on site. There are approximately 700 well bores with 300 producing wells ranging in depth from 500 to 5,000 feet. The federally managed facility is available to partners who wish to test their technologies in a field setting.

The test loop originates and terminates in one central location, with bell holes regularly spaced along the three main lines for valving, instrumentation and access for sampling.

To maintain an ambient temperature similar to those found in offshore operations and other harsh environments, the line is buried to a depth of approximately four feet to insulate it from Wyoming's extreme temperature variances and adverse weather. The oil will originate and terminate in three 400 barrel storage tanks onsite, making supply and delivery of the oil consistent and under controlled conditions.



The RMOTC facility is equipped with numerous facilities and infrastructure.

Test Loop Specs

- 6.625” OD
- Schedule 80
- 0.432 wall thickness
- X-42 steel pipe
- 3600 PSIA
- 5mi total length capacity
- 48” nominal depth
- 2.3mi bare pipe
- 2.7mi pipe-in-pipe jacket
- 13,300 stbpd liquid capacity
- Calc'd pressure drop of ≤500psi



Basic schematic of the deepwater test loop to be used in the upcoming AOT™ testing.

Manifolds

There is the option for variable manifolding to enable various combinations to be used of the different flow loops. This will enable them to be tied together, used separately, or in any combination therein to customize the flow loop characteristics.

This design allows for the use of chokes, multi-phase test stand equipment, chilling and heating sections and pigging equipment.

Chilling Option

The two chilling loops have the ability to use an outer jacketing pipe of 10.75”OD and 0.203 wall thickness for the ability to induce and control ambient temperature by surrounding the internal pipe with approximately 30,000 bpd of water, enabling a heat transfer rate of 8.50 MMBtu/hr enabling a reduction from 75°F to 40°F if desired.

Heating Option

The heated section offers the ability to use a similar jacketed pipe construction to raise the test fluid from 40°F to 140°F through its 3000ft section length using approximately 20,000 bpd of water for a heat transfer rate of 18.3 MMBtu/hr.

Fluid Storage

The testing facility has substantial storage capacity which can be installed to spec. For the AOT™ testing purposes, (at time of this writing) it is estimated that three 400bbl storage tanks will be used to



Typical Fluid Storage Units Onsite

achieve the storage capacity at the test loop’s central location. The tanks will allow the AOT™ effect to return to baseline while in storage between runs.

Bell Holes

There are 17 total bell hole access points at regular intervals along the three main test loops which provide access to the pipeline for installation of testing equipment, valving and measuring devices. Each bell hole will enable monitoring equipment to process and relay information to the main facility in realtime for data recording and processing.



STWA CEO, Cecil Bond Kyte looks on as U.S. Department Of Energy contractor field operations personnel showcase one of the bell holes.



View into bell hole. Virgin pipes are ready for monitoring equipment installation.



About the RMOTC Testing Tomorrow’s Technology Today.

RMOTC partners with service companies and equipment manufacturers to test new ideas and products leading to increased recovery or reduced operating costs. Independent oil producers leverage technologies tested at RMOTC by evaluating new recovery processes before application. National laboratories and government organizations field test assumptions in a real-world setting.

RMOTC offers access to equipment and highly experienced workforce in the following areas:

- Drilling
- Oil & gas
- Geothermal
- Mining
- Oil and Gas Production
- Artificial lift
- Operations
- Enhanced oil recovery
- Completions
- Production enhancement
- Geothermal
- Enhanced Geothermal Systems (EGS)
- Low-temperature / Co-production
- Renewable Energy
- Solar
- Wind
- Enhanced Oil Recovery
- Flow Assurance
- Environmental
- Energy Efficiency
- Exploration
- Geology
- Geophysics
- Carbon Management

RMOTC is online at: www.rmotc.doe.gov