acceleware®

enhanced oil recovery:

Innovating Heavy Oil and Bitumen Extraction with Radio Frequency Heating

November 1, 2018

FORWARD LOOKING STATEMENTS & ADVISORY

Certain statements in this presentation include forward-looking information (as defined in Canadian securities legislation). Such statements appear in Slides 6 & 7 [RF Economics for E&P Companies], Slide 8 [Environmental Benefits of RF], Slide 9 [Commercial-Scale Test], Slides 12, 13 and 14 [Energy Efficiency], and Slide 15 [Next Steps to Commercialization].

These statements involve numerous assumptions about future economic conditions and courses of action, and are therefore subject to various risks and uncertainties. These risks and uncertainties include, but are not restricted to, the ability of Acceleware Ltd. (“Acceleware”, “AXE” or the “Corporation”) to fund its research and development (“R&D”) activities, the timing of such R&D, the likelihood that the patent applications filed by the Corporation will be granted, continued increased demand for the Corporation's products, the Corporation's ability to maintain its technological leadership in various fields, the future price and cost of producing heavy oil and bitumen, the availability of key components and the Corporation's ability to attract and retain key employees and defend itself against any future patent infringement claims.

There can be no assurance that such statements will prove to be accurate. Actual results could differ materially from those anticipated in such statements. These and all subsequent written and oral forward-looking statements are based on the estimates and opinions of management on the dates they are made and expressly qualified in their entirety by this notice. The Corporation assumes no obligation to update forward-looking statements should circumstances, or management's estimates or opinions, change except as required by law.

ACCELEWARE (“AXE”)

An Established Technology Company Developing a Game-Changing Process for Enhanced Oil Recovery (“EOR”)

AXE is developing a technology that uses electro-magnetic energy in the radio frequency (“RF”) spectrum to heat and mobilize heavy oil and bitumen at a fraction of the cost of current processes.

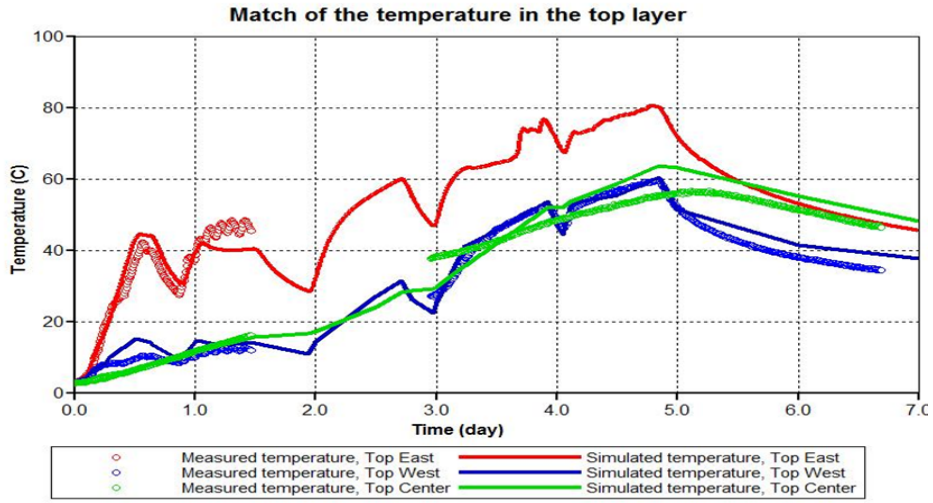
As an EOR technique, AXE’s RF solution yields dramatic benefits quickly, generates higher production than steam assisted gravity drainage (“SAGD”) and uses half the energy.

RF PATH TO COMMERCIALIZATION

Setting The Table For Success

1/20 Scale Test Success

- Delivered high power to the formation with scaled components
- Heated the formation as predicted by simulation
- Tested and confirmed proprietary system design



2018 | Signed commercial-scale test agreemer with Prosper Petroleum Ltd.

2017 | RF XL 1:20 scale field demo

2016 | GE partnership announced & additional RF XL Patents filed

2015 | AXE modular RF tank tests & patent filing

2011 | Design, simulation & field tests begin

2010 | AXE RF Heating studies for super-major oil company

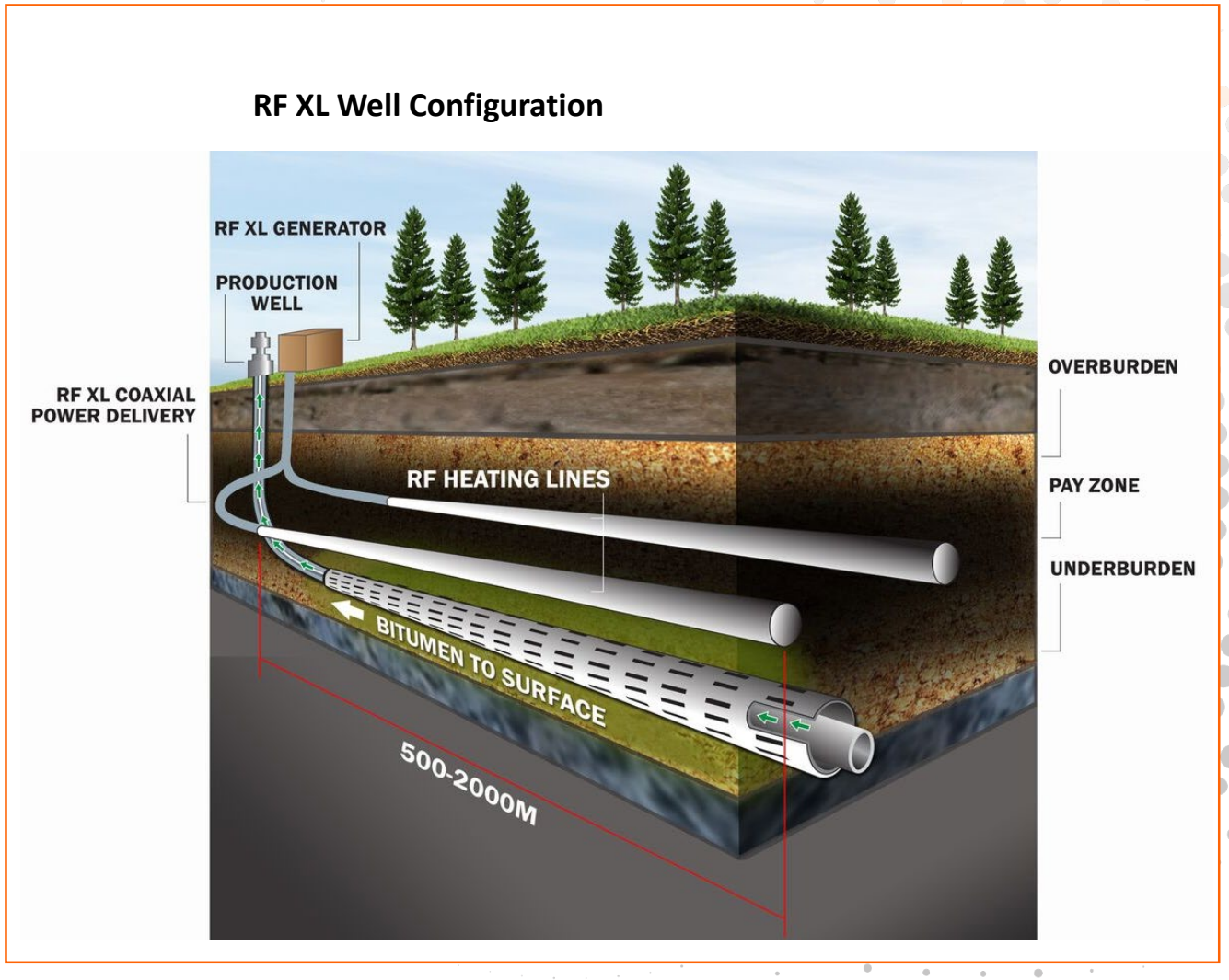
2005 | AXE EM Solver SW was released

GETTTING TO HERE

WHAT IS RF XL?

An Innovative Solution for Recovering Heavy Oil and Bitumen

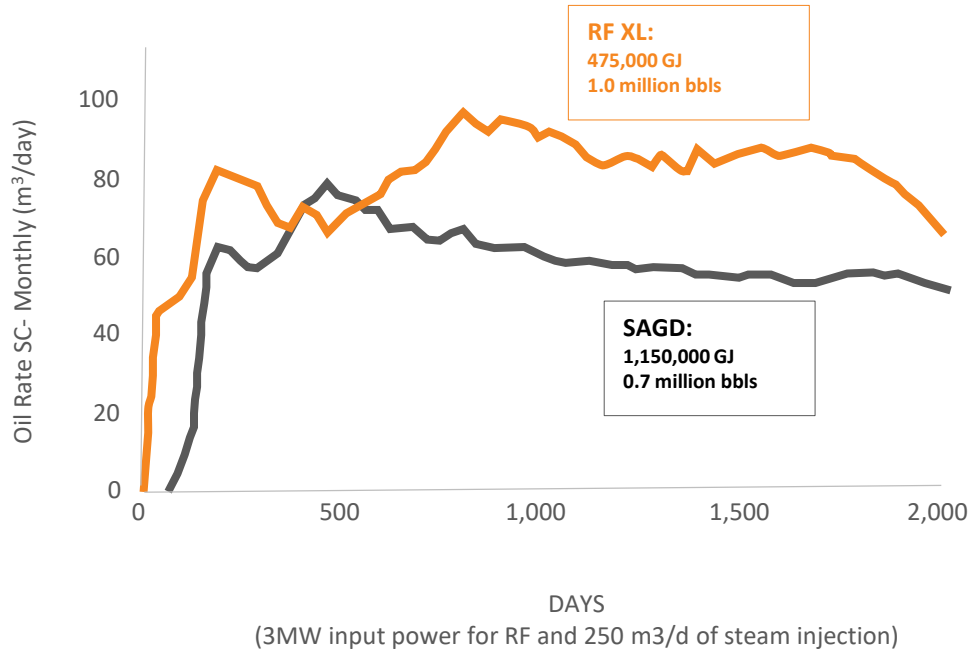
- RF heating works like an “inside-out” microwave oven: RF XL lines heat connate water in the formation, lowering the viscosity of the bitumen, and stimulating **oil** production
- RF XL is designed for:
  - Efficiency
  - Cost reduction
  - Ease of deployment
  - Flexibility / applicability
  - Scalability



RF XL – ECONOMIC ADVANTAGES

Driving a More Energy Efficient, Accessible and Environmentally-Friendly Solution

- Economically scalable – well by well
  - Simple, inexpensive, easy to deploy
  - Standard components and processes
- Lower capex (60%) and opex (42%)
- More energy efficient[1]
  - Retains 97% of “useful heat” v. 70% for SAGD
- Quicker to first production
  - No steam plant construction and no pre-heating
- Specifically developed for long-reach horizontal wells
- Design and components allow for rapid commercialization.



1. Internal AXE estimate

RF ECONOMICS FOR E&P COMPANIES

Deploying Capital More Efficiently than SAGD

1,000 Meter Horizontals[1]		AXE RF XL[2] Greenfield	SAGD[3] Greenfield
WTI (constant pricing)	US/bbl	$65.00	$65.00
Steam Oil Ratio	bbl/bbl	N/A	3.0
Energy/Oil Ratio	GJ/bbl	3.25	7.65
Initial Capital - Facilities	000	$591,000	$1,512,000
Initial Capital - Wells	000	$282,000	$440,000
Subsequent Capital	000	$2,236,000	$3,308,000
Total Capital	000	$3,109,000	$5,260,000
Estimated Ultimate Recovery	000 bbls	403,000	403,000
Average Production Rate	bbls/d	36,800	36,800
Time to First Oil	Years	<2	3
After Tax NPV 10%	000	$1,211,485	($78,840)
F&D	$/bbl	$7.72	$13.05
Capital Intensity	/bbl/d	$21,830	$48,800
Opex	/bbl	$7.00	$10.41
Payback	Years	4.8	10.5
IRR after tax		28%	9%

1. 40 well pairs: 1 producing well paired with 1 RF/steam injector
2. Source – Internal Estimate
3. Source – GMP First Energy

Economics reflect a 40,000 bbl/d operation, a standard measure for SAGD projects

- RF generates a significantly higher return
- RF economics relative to SAGD improve further with smaller project sizes

RF opens the door to smaller heavy oil and bitumen projects

RF XL - ENVIRONMENTAL BENEFITS

Elimination of Water and Steam Reduces GHG Emissions and Minimizes Surface Disturbance

- GHG emission reductions ranging from:
  - A 23% reduction based on Alberta's current power grid
  - A 56% reduction based on Alberta's the 2030 power grid
  - 50% reduction using Combined Cycle Gas Turbine power.
  - Potential for a 100% reduction when using renewable sources of electricity
- No external water is required and no tailings ponds.
- No solvent injection or recovery required, eliminating associated economic and environmental risks.
- 67% less land than comparable SAGD operation

RF Operation - Footprint

SAGD Operation - Footprint

Rigel Commercial-Scale Test

Commencing Commercial-Scale Test of Innovative RF XL Technology with Prosper Petroleum

- July 2018 AXE and Prosper Petroleum Ltd. (“Prosper”) agreed to complete a commercial-scale test of RF XL at the Rigel property.
- The pilot will run on an 1100m RF XL heating well and producer.
- The first phase will run for six months using Acceleware’s two-megawatt Silicon Carbide (SiC) generator developed with partner General Electric (GE)
- The test may be extended to run longer at four megawatts of power to complete a full production cycle on the pilot well.

  - AXE / GE work started January 2018 with the first unit ready late 2018.
  - Design and engineering phase to be completed in December 2018.
  - Drilling and construction at the site will begin in Q1 2019
  - Six month heating test scheduled for the second half of 2019.

Rigel Test Site – Reservoir Properties

High Quality Resource

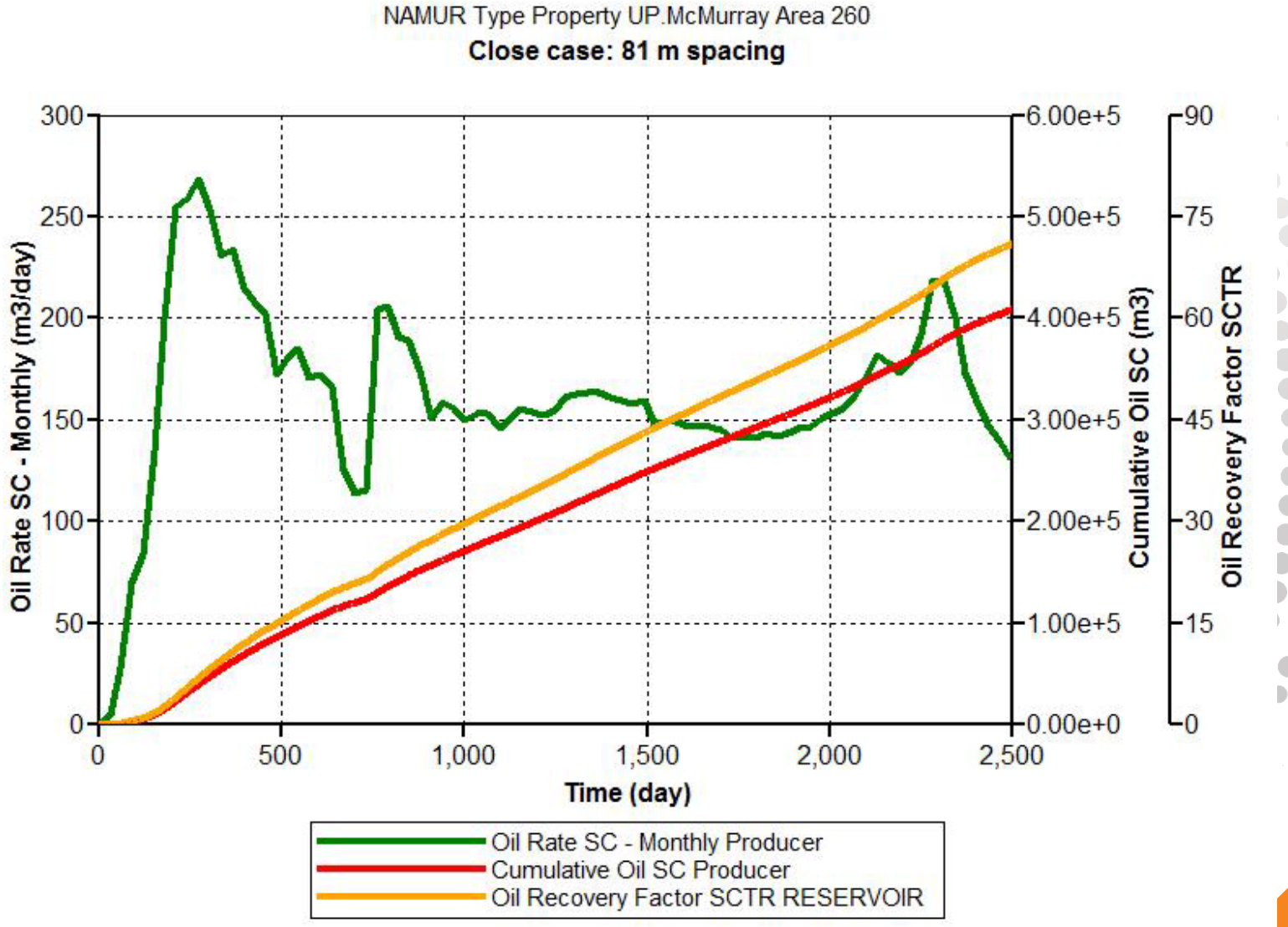
- Depth: 424m
- Spacing: 81m
- Well length: 1100m
- Thickness: 26m
- Porosity: 0.34 (average)
- Permeability:
  - Horizontal: 8-9 D (average
  - Vertical: 5.5-6 D (average)
- Initial Oil Saturation: 0.75 (average). Sw = 0.25 (average)

- Swr: 0.235 (some initial water is mobile, layers with Sw=0.35)
- OOIP: 575,400 m^3 (3.6 MBls)
- Initial oil viscosity: 747,900 cp (live oil, 2% gas mol fraction)
- Initial pressure: 900 kPa the whole reservoir
- Initial temperature: 13C
- Initial GOR: 0.85 m^3/m^3

Rigel Simulations – Oil Rate, Cum. Oil, & RF

Initial Simulations Show Very Strong Production Results

- Rapid early production – no pre-heating
- Average production of 1,070 bbl/day at 2500 days
- Cum energy/oil ratio of 3.5 GJ/m3 vs 7.5 GJ/m3 projected for SAGD.
- Cum oil 2.5 million bbls



Energy Efficiency Comparison – EOR[1]

RF is more efficient than steam for energy input and cost.

- Steam (SAGD) for Oil Sands: 6.3 – 9.0 GJ/m3
- RF XL for Oil Sands: 2.5 – 4.5 GJ/m3
- RF XL for Heavy Oil: 2.0 – 3.5 GJ/m3
- RF XL Heavy Oil ON/OFF: 1.5 – 2.5 GJ/m3

Energy efficiency drives both economic and environmental results.

Energy Efficiency Comparison – OPEX/bbl[1]

RF is more efficient than steam for energy input and cost.

- Steam (SAGD) for Oil Sands: $10.81/bbl
- RF XL for Oil Sands: $6.65/bbl
- RF XL for Heavy Oil: $5.86/bbl
- RF XL Heavy Oil ON/OFF: < $4.50/bbl?

Potential operating costs reductions per barrel are significant.

1. Internal AXE estimate

Energy Efficiency Comparison – CO2/bbl[1]

Efficiency translates into lower GHG emissions as well.

- Steam (SAGD) for Oil Sands: 100.42 kg
- RF XL for Oil Sands: 57.84 kg
- RF XL for Heavy Oil: 45.80 kg
- RF XL Heavy Oil ON/OFF: 0 - 33.77 kg

Emission reduction potential is equally compelling.

1. Internal AXE estimate

Next Steps to Commercialization

The RF XL test project is now fully underway.

- Rigel oil sands pilot test in 2019
- Heavy oil pilot tests and initial commercial deployments in 2020
- Simulation work and plans for other heavy oil and oil sands deployments are ongoing.

FAQ : QUESTION ONE

Two key questions to address

Why will RF work now when it didn't before?

- We've tested the traditional approaches to RF heating, identified their limitations, and abandoned those elements.
- We've designed a completely new approach combining our RF XL heating lines with partner GE's SiC generator, eliminating the use of dipole antennae.
- The RF XL design was proven successful in our 1/20th scale field test in Q1 2017.
- We continue working with industry experts and thought leaders to ensure the pilot is successful.

FAQ : QUESTION TWO

Two key questions to address

How do you produce oil without “filling the void?”

- Void space is filled by:
  - Expansion from water to steam.
  - Change pore volume due to rock compressibility.
  - Solution gas release.
- Mobilized oil is produced via gravity drainage.

CONTACT

RF XL: a Better, Cleaner Alternative for Enhanced Recovery

Acceleware Ltd.

435 – 10th Avenue SE

Calgary, AB T2G 0W3

Mike Tourigny, VP Commercialization RF Heating

T: 403.249.9099

E: mike.tourigny@acceleware.com

W: www.acceleware.com