Forward Looking Information and Advisories

This Presentation contains forward looking information including, expectations for future production and total bitumen recovery, estimates of reserves, future development of the SAGD+® process commercial project at Algar and mini-steam expansion at Pod One and the anticipated impact thereof, growth potential associated with certain additional capital investment options and development projects to be undertaken at Algar, sustainability of production, well and plant performance, the steam to oil ratio (“SOR”), and plant reliability.

Forward looking information is based on management’s expectations regarding the Company's future growth and financial position; results of operations and production, future commodity prices and foreign exchange rates; future capital and other expenditures (including the amount, nature, and sources of funding thereof), plans for and results of drilling activity; environmental matters; business prospects and opportunities; and future economic conditions. Forward looking information involves significant known and unknown risks and uncertainties, which could cause actual results to differ materially from those anticipated. These risks include, but are not limited to: the risks associated with the oil and gas industry (e.g., operational risks in development, exploration and production; delays or changes in plans with respect to exploration or development projects or capital expenditures; the uncertainty of reserve and resource estimates; the uncertainty of geological interpretations; the uncertainty of estimates and projections relating to production, costs and expenses; and health, safety and environmental risks), risk of commodity price and foreign exchange rate fluctuations, risks associated with the impact of general economic conditions, risks and uncertainties associated with maintaining the necessary regulatory approvals and securing the financing to proceed with the operation and continued expansion of the Great Divide oil sands project.

This presentation includes information pertaining to the reserves as at December 31, 2016, as evaluated by GLJ Petroleum Consultants Ltd., in their report for the year ended December 31, 2016 (the “GLJ Report”). Statements relating to reserves are deemed to be forward looking statements, as they involve the implied assessment, based on certain estimates and assumptions, that the reserves described exist in the quantities predicted or estimated, and can be profitably produced in the future. Certain information and assumptions relating to the reserves reported herein are set out in the Corporation's Statement of Reserves Data and Other Oil and Gas Information for the year ended December 31, 2016, which is available on the System for Electronic Document Analysis and Retrieval (SEDAR) at www.sedar.com. There is no assurance that the forecast price and cost assumptions contained in the GLJ Report will be attained and variances could be material. The reserves estimates of Connacher’s properties described herein are estimates only. The actual reserves on Connacher’s properties may be greater or less than those calculated.

Design capacity is not necessarily indicative of the stabilized production levels or steam generation capacity that may ultimately be achieved at Connacher’s SAGD project sites. Reported average production levels may not be reflective of sustainable production rates and future production rates may differ materially from the production rates reflected in this presentation due to, among other factors, difficulties or interruptions encountered during the production of bitumen.

Although Connacher believes that the expectations in such forward looking information are reasonable, there can be no assurance that such expectations shall prove to be correct. The forward looking information included in this presentation is expressly qualified in its entirety by this cautionary statement. The forward looking information included herein is made as of the date of this presentation and Connacher assumes no obligation to update or revise any forward looking information to reflect new events or circumstances, except as required by law.
Subsurface - Background
Assets

- Connacher is a focused developer, producer, and bitumen marketer from its in-situ oil sands projects in Alberta’s Athabasca oil sands.

- Primary driver of value is the continued development of its bitumen production at its Great Divide oil sands operations using in-situ recovery methods.

- Oil sands reserves and resources include 444,973 Mbbl of 2P reserves (as of 31 December 2017 per GLJ Petroleum Consultants) (1)

(1) See Slide AppendixB for Reserve Definitions
Great Divide Assets

Pod One

- First Steam September 2007
- First Bitumen October 2007

Algar

- First Steam May 2010
- First Bitumen July 2010
Highlights - 2018 Connacher Presentation

No Changes to Net Pay and other Geology Maps

Pod One production stable following ramp-up

Mini Expansion at Pod One Approved

Algar production steady following ramp up

SAGD+® Process Commercial Project Approved at Algar

Pad 104
- 10 Well Pairs Approved
- 4 Wells Drilled and Producing

Other
- Pump Performance Update
- Water Recycle Update
- Facilities and MARP updates
- HSE Updates
Pod One Current Development

- 23 Well Pairs and 13 Infills
  - Pad 101N - 5 Well Pairs
  - Pad 101S - 6 Well Pairs, 6 Infills
  - Pad 102W - 5 Well Pairs, 5 Infills
  - Pad 102S - 3 Well Pairs, 2 Infills
  - Pad 104 - 4 Well Pairs 80m interwell spacing

Pod One Development History

- Original 15 Well Pairs Drilled in 2007
  - all well pair interwell spacing 100m except Pad 104
- 2 Well Pairs Drilled in 2009 (101S and 102S)
- 2 Well Pairs Drilled in 2010 (102S)
- 4 Infills Drilled in 2013 (102W)
- 4 Well Pairs Drilled in 2013 (104)
- 9 Infills Drilled in 2014 (102W(1), 102S(2), 101S(6))
Great Divide (Approval 10587) Development

Algar Current Development

- 18 Well Pairs Producing
  - Pad 201S - 5 Well Pairs 100m interwell spacing
  - Pad 202S - 6 Well Pairs (1 re-drill) 100m interwell spacing
  - Pad 203S - 7 Well Pairs 100m interwell spacing

Algar Development History

- Original 17 Well Pairs Drilled in 2009
- Replacement Well Pair (202-01) drilled in 2013
- Approved for 5 Infills on Pad 203 in 2014
# Great Divide Summary

<table>
<thead>
<tr>
<th></th>
<th>Pod One @ Sept 30, 2018</th>
<th>Algar @ Sept 30, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Steam</td>
<td>September 2007</td>
<td>May 2010</td>
</tr>
<tr>
<td>First Sales Oil</td>
<td>October 2007</td>
<td>June 2010</td>
</tr>
<tr>
<td>Cumulative Bitumen Produced $e^3m^3$</td>
<td>4,053</td>
<td>2,718</td>
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<tr>
<td>Cumulative Steam Injected $e^3m^3$</td>
<td>15,237</td>
<td>12,701</td>
</tr>
<tr>
<td>Cumulative SOR</td>
<td>3.76</td>
<td>4.67</td>
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<tr>
<td>Number of Producing Well Pairs</td>
<td>22</td>
<td>18</td>
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<tr>
<td>Number of Circulating Well Pairs</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Infill Wells Producing</td>
<td>9</td>
<td>0</td>
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<tr>
<td>Wells Using Gas Lift</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Wells Using Downhole Pumps</td>
<td>31</td>
<td>0</td>
</tr>
<tr>
<td>Operating Pressure Gas Lift</td>
<td>N/A</td>
<td>3850 - 4000 kPa</td>
</tr>
<tr>
<td>Operating Pressure Pump</td>
<td>1300 - 3000 kPa</td>
<td>N/A</td>
</tr>
<tr>
<td>Directive 51 Operating MOP</td>
<td>6205 kPa Maximum Operating Pressure</td>
<td>6205 kPa Maximum Operating Pressure</td>
</tr>
</tbody>
</table>
Subsurface - Geology
Great Divide Area Type Well

Great Divide Area Stratigraphy

Base Fish Scales
Viking
Joli Fou
Grand Rapids
Lower Grand Rapids
Clearwater
Wabiskaw
McMurray
Top Oil Sand
McMurray C Bitumen Reservoir
Paleozoic

McMurray Gas Zones
Devonian Carbonates

Resistivity (ohmm)
Density Porosity (dec)
Neutron Porosity (dec)
GR (api)
TVD 514.6m

1AA/01-17-082-12W4/00
1:2000

McMurray Gas Zones
Devonian Carbonates
Great Divide Area Core & Log Data

Typical Composite Log with Interpretation and core data comparison.

• Log vs Core Comparison
• Analytical interpretation of geophysical logs to determine bitumen saturations (wt%) gives good correlation with core derived bitumen saturations (wt%). Examples shown below.

<table>
<thead>
<tr>
<th>Well</th>
<th>Log Net Pay</th>
<th>Core Net Pay</th>
<th>Log Bitumen Wt %</th>
<th>Core Bitumen Wt %</th>
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</thead>
<tbody>
<tr>
<td>100/08-17-082-12W400</td>
<td>21.3</td>
<td>23.3</td>
<td>13.6%</td>
<td>14.0%</td>
</tr>
<tr>
<td>1AA/03-17-082-12W400</td>
<td>13.2</td>
<td>12.0</td>
<td>11.6%</td>
<td>12.7%</td>
</tr>
<tr>
<td>1AA/03-21-082-12W400</td>
<td>14.9</td>
<td>13.3</td>
<td>10.2%</td>
<td>10.4%</td>
</tr>
<tr>
<td>1AA/07-16-082-12W400</td>
<td>25.9</td>
<td>27.7</td>
<td>11.5%</td>
<td>12.7%</td>
</tr>
<tr>
<td>1AA/10-21-082-12W400</td>
<td>20.8</td>
<td>17.2</td>
<td>13.2%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Parameter</td>
<td>Pod One</td>
<td>Algar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reservoir Thickness (m)</td>
<td>Range 10 - 30</td>
<td>Range 10 - 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average 22</td>
<td>Average 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth to Top of Reservoir (m)</td>
<td>Range 450 - 490</td>
<td>Range 465 - 500</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average 475</td>
<td>Average 485</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reservoir Net Pay (m)</td>
<td>Range 10 - 25</td>
<td>Range 10 - 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average 21</td>
<td>Average 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil Saturation (%)</td>
<td>Range 75 - 85</td>
<td>Range 72-80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average 80</td>
<td>Average 76</td>
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<td></td>
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<tr>
<td>Bitumen Density (kg/m3)</td>
<td></td>
<td>1018</td>
<td></td>
<td></td>
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<tr>
<td>Bitumen Viscosity (cPs)</td>
<td>&gt; 1 million</td>
<td>&gt; 1 million</td>
<td></td>
<td></td>
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<tr>
<td>Porosity (%)</td>
<td>Range 32 - 34</td>
<td>Range 32 - 34</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average 33</td>
<td>Average 33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Permeability (mD)</td>
<td>Range 1500 - 4000</td>
<td>Range 1500 - 4000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Permeability (mD)</td>
<td>Range 2000 - 5000</td>
<td>Range 2000 - 5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Reservoir Temperature (°C)</td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Reservoir Pressure (kPa)</td>
<td>3500</td>
<td>4500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Bottom Water Pressure (kPa)</td>
<td></td>
<td>2500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3D Seismic has been successfully used by Connacher to define edges, sand thickness and paleo structure, and ultimately reduces the drilling costs.

No new Seismic was shot during the 2015-16 exploratory season.
Great Divide Area Oil Sands Facies and Pay

Zones
Defined by Vshale

Connacher Cut-Offs
Z1 (Sand): 0-10% fines
Z2 (Sandy IHS): 10-20% fines
Z3 (IHS): 20-50% fines
Z4 (Muddy IHS): 50-80% fines
Z5 (Mud): 80-100% fines
Z6 (Breccia): >10% clasts

Pay Base Criteria
Minimum bitumen grade: 7wt%
Minimum Net/Gross ratio: 80%
Maximum included shale interval: 2m
Minimum zone thickness: 10 m

Core displayed is from a number of separate wells

Facies Z1, Z2, and Z3 are included in net pay
Net Pay Map Great Divide Area

Minimum Criteria:

- Continuous Net Pay >10m
- Saturation 7% Bitumen by Weight
- Porosity >25%

Net Pay (m)
- 10-15m
- 15-20m
- 20-25m
- 25-30m
- >30m

Great Divide Project Approval Area
Great Divide Approved Development Area
Original pressure of the gas cap was 2027 kPa in 1988. Subsequent to depletion, the lowest pressure recorded was 746 kPa in 2003.

Estimated original BW pressure of 2500 kPa based on lowest (520 mKB) gauge in Algar observation well 100/15-13-082-12W4 prior to steam injection May 2010.
Top of Oil Sands Elevation
Paleo Structure Elevation

R12W4

R11W4

T82

Paleo Structure Elevation (m)
Typical Section - Pod One

Pad 101N is characterized by a higher abundance of IHS in the upper part of the reservoir. As seen in well 05 - 21, the sand body gradually thins to the west. In contrast, the reservoir to the south is dominated by clean Z1 sand facies but develops a gas cap with a lean zone above the bitumen pay column.
The Algar reservoir has a some IHS along with a breccia deposit to the north seen in well 100/04-19. Despite poor gamma ray, well 1AB/09-13 confirms high quality reservoir to the east which can be seen on the resistivity curve and verified by core. The poor gamma ray is caused by inaccurate log calibration.
The cap-rock in the Great Divide Area consists of a mixture of muddy inclined heterolithic strata (IHS) and a mudstone that average over 10 meters in thickness. The muddy IHS consists of 80% volume of shale that is bio-turbated with mud-lined and sand-filled burrows. Muddy IHS is interpreted to be deposited in a muddy point bar. The light grey mudstone is thinly bedded with the top containing siderite nodules and rootlets. It is interpreted to be deposited in a mud flat to swamp environment. Above are core photos of the cap rock from well 1AA/06-21-82-12W4.

This regionally extensive McMurray caprock is considered the caprock for the project. The McMurray caprock is overlain by the Wabiskaw and Clearwater shales described on the following slide.
A Mini Frac test was conducted in well 1AB/14-27-082-12W4 in February 2010. Certain concerns were raised about one test being representative for the whole project area and also the closure pressure determined for the Wabiskaw which could have been influenced by local changes in rock mechanical properties.

Consequently a second test was conducted at 1AC/09-22-082-12W4 in April 2013, and this is reported in the table below. Results for the second test are similar to the first. Although the Wabiskaw measured the highest stress gradient it was reduced from the first test.
Directive 51 Maximum Operating Pressure = 6,205 kPag
Directive 51 Maximum Operating Pressure = 6,205 kPag
Subsurface - Recovery Process
Great Divide SAGD Recovery Process

Basic Process

![Diagram showing circulation, peak SAGD production, and low pressure SAGD production]

Additional Process

Pod One
- Pressure Balancing under a gas cap and lean zone
- Infill Wells
- Gas Cap Repressurization
- Natural Gas Co-injection (intermittent pressure maintenance)

Algar
- Pressure Balancing over a water zone
- Infill Wells
- SAGD+® Commercial Project
- Natural Gas Co-injection (intermittent pressure maintenance)
<table>
<thead>
<tr>
<th>Description</th>
<th>Stage</th>
<th>Reason</th>
<th>Approvals</th>
</tr>
</thead>
</table>
| Pressure Balancing Under a Top Gas & Lean Zone & Bottom Water             | Developed            | • Eliminate steam losses into a gas and lean zone, lower SORs and improve productivity.  
• Required the parallel development of reliability on high temperature downhole pumps. | Operating within existing approvals                                        |
| Gas Co-injection                                                          | Implemented          | • Natural gas can replace steam to maintain pressure                    | Approved for full field at Pod One                                          
Approved for full field at Algar                                             |
| Gas Cap Repressurization                                                   | Implemented          | • Reduces steam losses into gas cap and lean zone                       | Approved                                                                   |
| **SAGD+® Process Trial / Commercial**                                      | Trial Completed      | • Reduces bitumen viscosity lower than steam alone to improve production rates, SOR, and recovery. | Commercial **SAGD+®** Commercial Project approved at Algar                    |
| Infill Wells                                                               | Implemented          | • Additional production and reserves at low capital and SORs           | Approved for 5 Infill Wells at Algar Pad 203                                |
Pressure Balancing (Top Gas & Lean Zone)

Well Pair 101S-09

- Temporary production impact during pressure balance
- Improved SOR with low pressure operation
- Pad 104 is being operated in a similar manner except that the re-pressurization is expected to reduce the quantity of steam losses when the steam reaches the lean zone and pumps are being installed earlier
Pressure Balancing (Bottom Water)

- No update in strategy for pairs operating above bottom water
- Monitoring injection pressure, SOR, and produced water chlorides for signs of steam loss and bottom water production
- Continued operation with mechanical lift (pump) and injection via steam diverter in 201-I03
Re-Pressure Pod One Gas Cap

The purpose of gas cap repressurization is to increase the pressure in the gas cap and bitumen lean zone immediately above Pad 104 and institute a more effective pressure balancing process. Simulations have shown long term benefits to production and SOR by repressurizing to just below the SAGD operating pressures, 2000 - 3000 kPa with mechanical lift. Details are discussed in Connacher’s Pressure Balancing paper, available upon request.

- The repressurizing process was underway prior to the start up of Pad 104 in 2013. Methane was injected into the 9-17 well at the injection rates shown in the graph below.

- The gas cap pressure at the 7-17 observation well was approximately 1600 kPa prior to gas injection, and the average pressure for September 2017 was 2833 kPa in the gas cap and 2901 kPa in the lean zone.

- Currently the well is injecting methane to maintain the pressure.

- The response to gas injection at the 7-17 observation well is shown in the following slide.
The chart shows the response at various pressure transducers in observation well 7-17 (approximately 600m south of the gas injection at 9-17). The transducers are set at the KB elevations shown on the adjacent log. Connacher is able to pressure the lean zone and gas cap to the target pressure from the 9-17 gas injector.
SAGD+® Commercial Project

Phase 1

- In January 2011, ERCB granted approval for a trial of light hydrocarbon - steam co-injection in the seven well pairs of Pad 203.
- Connacher selected two well pairs 203-2 and 203-3 for an initial test (Phase 1) of the process.
- In Phase 1, a commercially available solvent was co-injected with the steam starting in July 2011 at initial rates of approximately 10% by volume and increased to 15% by volume in October 2011. Compared to an April 2011 baseline, daily average per well bitumen production volumes during the months of August 2011 through October 2011 increased approximately 28% percent with a SOR decrease of 16%. The SOR decrease was limited by the necessity to increase steam injection rates to maintain normal operating pressure.
- Phase 1 injection ended November 2011. Solvent was recovered from the Phase 1 wells until April 2012 just prior to the start of Phase 1.5, 89% of the solvent had been recovered to surface.

Phase 1.5

- Phase 1.5 commenced in May 2012 with solvent injection of approximately 10% until August when injection rates were reduced to approximately 6%, and further reduced in March 2013 to approximately 4%. In 2014 solvent injection rates averaged 5.9%.
- In the 12 months May 2012 through April 2013 bitumen rates increased by approximately 30% compared to the four months prior to the test. The SOR decreased 32% over the same period.
- In July 2013 an ESP was installed in 203-01. Following operational issues the pump was removed in December 2013. The bank of solvent built up during the ESP issues resulted in improved results following the return to gas-lift.
- The SOR for Well 203-01 during the life of the test is 3.0 significantly lower than other wells in the project.
- Solvent injection was stopped in Well 203-1 on April 21, 2015.

Note: details of the measurement of solvent injection and recovery are discussed in the attached Steam Solvent SAGD Paper and the Algar MARP
• Strategy for Pad 101N has not changed, going forward the plan is to continue to produce 101-P04 using rod pump
• No further steam injection is planned
• Pad 101N was approved for produced water disposal on February 8th, 2016. Approval No. 10587S
• Produced water disposal into 101-I01 and -I02 began on April 15, 2017 and is ongoing

• Charts show the production history from 101N
Pad 101N Produced Water Disposal

- Produced water disposal into 101-I01 and -I02 has declined from the peak in August 2017 as oil cut on SAGD production has recovered following the 2016 production curtailment.

- Prior to August 2017, Connacher required a disposal strategy for produced water that was in excess of steam generation capacity.

- Disposal of approximately 750 m³/d of produced water into 101N allowed Connacher to maximize production and accelerate time required for BS&W of SAGD pairs to “recover” following the production curtailment period.

- Charts show the disposal history as well as the cumulative produced water disposal into 101N since April 2017.
Pad 101N Produced Water Disposal

- Produced water disposal is conditional on not interfering with SAGD production operations
- Disposal into 101-I01 and 101-I02 only, 101-03 not operational, production from 101-04, 101-05, and 102-01
- Active monitoring of reservoir pressure in 102-I01 and 101-I04 for signs of communication with 101-I01 and -I02
- Bubble tubes on 101-I01 and I02 were mistakenly shut in until from April through mid-June 2017
- Bubble tube on 101-I01 (blue) was plugged and not reading accurate bottomhole pressure until mid-September 2017
- Downhole packers were installed on 101-I01 and I02 in February 2018, making bottomhole pressure measurement, via annulus gas pressure inference, impossible
- There has been no indication of communication between 101-I01 and -I02, and 101-03 nor 102-01
- There has been no indication of loss of injectivity in either well; Connacher has no preventative maintenance planned for either well
NCG Co-injection

Non-condensible gas (NCG) co-injection is intended for use in pressure maintenance and ability to replace steam with NCG during times of steam shortage.

Commercial Scheme Approval issued for Full Field NCG Co-injection at all wells at Pod One and Algar:

• maximum of 10 $e^3$ m$^3$ per day
• limited to a maximum of 4 mole per cent with steam (monthly basis)
• limited to a maximum 20 per cent NCG replacement with steam (6 month average basis)
Infill Wells at Pod One - Pad 102W

- Infill wells were drilled shorter than the adjacent well pairs to avoid penetrating the thin channel edge.
- Temperature logs prior to the steam injection indicated wide variations in temperatures along horizontal sections of the infill wells.
- In order to increase temperature in the wells steam cycles were initiated as shown in the graph to the right.
- Infill well 02 received the smallest volume of steam and responded the fastest and also had the highest temperature measured in the pre-steam survey.

Bottom Hole temperature surveys were carried out prior to steaming the infill wells.
New Infill Wells at Pod One - Pad 101 & 102

<table>
<thead>
<tr>
<th>Well Pad</th>
<th>Infill Well</th>
<th>UWI</th>
<th>Production Start Date</th>
<th>Cum Oil (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>101S</td>
<td>101-INF07</td>
<td>109/16-17-082-12W4/00</td>
<td>18-Sep-15</td>
<td>31,009</td>
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<td>101S</td>
<td>101-INF08</td>
<td>108/16-17-082-12W4/00</td>
<td>13-Sep-14</td>
<td>71,553</td>
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<td>101S</td>
<td>101-INF09</td>
<td>105/09-17-082-12W4/00</td>
<td>17-Jul-14</td>
<td>58,052</td>
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<td>101S</td>
<td>101-INF10</td>
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<td>101S</td>
<td>101-INF11</td>
<td>114/12-16-082-12W4/00</td>
<td>18-Aug-14</td>
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<td>101S</td>
<td>101-INF12</td>
<td>113/12-16-082-12W4/00</td>
<td>4-Oct-14</td>
<td>84,648</td>
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<td>102W</td>
<td>102-INF06</td>
<td>112/08-20-082-12W4/00</td>
<td>3-May-15</td>
<td>51,396</td>
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<td>102W</td>
<td>102-INF13</td>
<td>115/12-16-082-12W4/00</td>
<td>19-Oct-15</td>
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<td>102W</td>
<td>102-INF14</td>
<td>116/12-16-082-12W4/00</td>
<td>17-Jan-17</td>
<td>49,167</td>
</tr>
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Subsurface - Completions
Typical bottom hole pressure and temperature measurement

**Injector well BHP measurement:**

- Blanket gas on annular side of the wellhead which is isolated from steam injection points for short and long strings

**Producer well BHP measurement:**

- Algar (gas lift), read by the short string lift gas pressure at surface. This is landed at the heel of the well. The annulus of the well, function as a bubble tube.
- Pod One, read by instrumentation coils which function as a bubble tube. This is landed at the toe of the well. The coil has a check valve at the end to prevent fluid from backing up inside.

**Injector well BHT measurement**

- Connacher does not measure injector well BHT. This is interpreted from injector reservoir pressure using saturated steam temperature tables.

**Producer well BHT Measurement**

- Connacher uses instrumentation coil strings with fiber or thermocouples to measure producer well BHT at both Algar and Pod One.
Typical Injector Completion

**Injection port**
- Allows for an increased volume of steam injection through the long string (hydraulic limitations)
- Promotes more uniform steam distribution throughout the slotted liner

**Short String**
- 88.9 mm tubing to ? mKB
- 73.0 mm tubing ? to ?? mKB

**Long String**
- 88.9 mm tubing to ? mKB
- 73.3 mm tubing ? to ?? mKB
- 88.9 mm tubing ?? to ??? mKB
Typical Producer Gas Lift Completion

**Production port**
- Allows for an increased volume of fluid to move to surface from the toe (due to pressure drop)
- Promotes more uniform steam chamber development (production optimization) due to production of fluid draining in central region of the well bore

![Diagram of typical producer gas lift completion](image)

- **Short String**
  - 88.9 mm tubing to \( mKB \)
- **Gas lift mandrel**
  - 25.4 mm landed at heel of long string
- **Instrument String**
  - Fiber optic or thermocouple
- **Long String**
  - 88.9 mm tubing to \( mKB \)
Typical Producer Mechanical Lift

**Electronic Submersible Pump**
- Metal on metal Progressive cavity pump
- Tubing pump (hydraulic pump jack)

**ESP development**
- Connacher was the first company to run the high temperature limit ESP
  - Previous temperature limit: 218°C
  - Current temperature limit: 250°C

**Production tail pipe**
- Allows for an increased volume of fluid to move to surface from the toe
  - Reduces preferential production from the heel (more uniform chamber)
  - Allows for more cooling prior to reaching pump (less steam at pump)
Improved Well Bore Design (Algar)

**Injector**
- Short inj string
- 7" slotted liner
- Inj port
- Long inj string

**Producer**
- Instrument string
- Short prd string
- Gas lift coil
- 7" slotted liner
- Prd port
- Long prd string
Typical Infill Well Completion

Surface Casing

Production casing

Guide String

Tubing

Corod

Instrument String

Tailpipe tubing

Pump

Production Port

Liner

Slotted Liner Hanger
Subsurface - Artificial Lift
Artificial Lift Performance - Pod One

These Pads produce from good quality oil sands reservoir and are a good application of ESP’s. The pump history for 101N and 104 pads is shown here as an example.

The higher rate wells can accommodate ESP’s whereas lower rate wells and infills operate more efficiently with rod pumps.

Pads 101S, 102W, 102S & 104

<table>
<thead>
<tr>
<th>Pad</th>
<th>Well</th>
<th>Pump Type</th>
<th>Pump</th>
<th>Install date</th>
<th>failure date</th>
<th>Run Time (days)</th>
<th>Current</th>
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</table>
In late-2017 and 2018 the remaining three rod pumping wells, 201-03, -04, and -05, were converted to gas lift.

Going forward, artificial lift at Algar will solely gas lift until a conversion back to mechanical lift is warranted by reservoir pressure and operating strategy.

Historically, both ESPs and rod pumps have been on Pad 201 due to the proximity of the wells to a limited bottom water zone.

As part of the SAGD+™ pilot, ESPs were installed in three wells in Pad 203. Due to reservoir characteristics and economics, these wells were converted back to gas lift.
• SCVF tests were conducted on all injectors and producers at Pod One and Algar in September, 2017. No issues were identified and the results have been reported to the AER through DDS.

• SCVF tests will be completed in late-2018, the results of which will be reported to the AER through DDS.
Subsurface - Monitoring
Pod One Observation Wells

100/11-21-82-12W4, Operational Apr 2011
- Monitor North Pad Performance (47 m from Well Pair 101-04)
- Five temperature and five pressure measurements all operational
- Temperature readings suspect - all at original reservoir temperature ~14 °C
- Pressure gauges operational
- Continue collecting data

100/06-21-082-12W4, Operational Dec 2007
- Purpose was to measure rise of steam and to determine if steam moved into any overlying gas caps (39 m from Well Pair 101-05)
- Operational but readings suspect
- Maximum temperature 20 °C
- Pressure gauges not operational
- Continue collecting data

111/12-16-82-12W4, Operational Mar 2010
- Provided observations on effects of low pressure operations (40 m from Well Pair 101-10)
- Five temperature measurements all operational. 3 of 5 Pressure gauges not operational
- Continue collecting data

111/05-21-82-12W4, Operational Mar 2012
- Drilled to acquire information on temperature between well pairs for future infill wells (40m from Well Pair 102-03)
- Five temperature measurements operational. Lower pressure gauge not operational
- Continue collecting data

100/07-17-82-12W4, Operational Mar 2012
- Drilled to acquire information on gas cap repressurizing (33m from Well Pair 104-P03)
- Five temperature and five pressure measurements operational
- Continue collecting data
Pod One - Typical Observations Well

Blue line = Piezometer Cables
Red line = MI Thermocouple Cable

Pres 3 & Temp 5: 430.07mKB
Temp 4: 431.36mKB
Temp 3: 434.05mKB

Location of Piezometers for Pres 1 and Pres 2

Pres 2: 456.36mKB
Temp 2: 459.05mKB

Open Hole

De-Centralizing Clamps for Piezometer Windows

Pres 1 & Temp 1: 468.05mKB

Surface Casing

Note: As the 3 piezometers are landed within 3m of each other above the heated zone, it is expected that they should read the same temperature to within their range of accuracy.

Prepared by Petrospec Engineering Ltd.
Pod One Obs Well - 111/12-16-82-12 W4

Chamber appears to be fully developed. Steam is suspected to be leaking to gas cap and lean zone. Temperature readings provide support for gas cap repressurization. No valid pressure readings for 3 of 5 gauges.
Temperature response observed by April 2016. Pressure response to steam injection observed. Note that steam injection to Pad 104 commenced in September 1, 2013.
No valid pressure readings at the lowest gauge after January 1, 2013. The piezometer at 445.5 m has failed and is no longer reporting accurate reservoir pressure.
Temperature readings confirm that steam distribution in Pad 101N was a challenge. Note that Pad 101N is on blowdown. Temperature and pressure readings portray a relatively fast response to blowdown.
Pressure and Temperature readings are suspect.

39m from 101-05
Algar Observations Wells

100/04-19-082-11W4M Operational February 2011
- 6m from Well Pair 203-04
- Monitors Pad 202 performance
- Five temperature measurements operational
- Pressure measurement at 503.5 mKB failed Aug 2013

100/01-24-082-12W4M Operational February 2011
- 20m from Well Pair 203-06
- Five thermocouples operational
- Four pressure gauges operational

100/15-13-082-12W4M Operational February 2011
- 8m from Well Pair 201-04
- Five thermocouples operational
- One pressure gauge operational

100/09-13-082-12W4M Operational February 2011
- 37m from Well Pair 202-04
- Five thermocouples operational

111/16-13-82-12W4W4 Operational March 2012
- 48m from Well Pair 203-05
- Five thermocouples operational
- Five pressure gauges operational
Temperature readings at 490 m depth suggest that steam is moving to higher IHS zones. This suggests that the IHS zone are discontinuous at this location.
Temperature readings show temperature development in intense IHS zones. Pressure readings at this location are suspect.
Temperature readings supports the development of infill wells at this location. No pressure readings available.
Temperature readings show temperature response in IHS zone.
Temperature readings show temperature development in the IHS zone. It is expected that there will be more temperature response at lower depths in the future. Pressure response is observed in the entire column.
Notes on Obs Well equipment failure

Pod One

12-16-082-12W4 - Thermocouples at all measurement depths are operating properly. Piezometers at depths of 471, 478, and 487 m are not operating due to gauge failure. There are no plans to replace the equipment.

5-21-082-12W4 - Thermocouples at all depths are operating properly. Piezometer located at 445.5 m and 454 m are not operating due to gauge failure. There are no plans to replace the equipment.

6-21-082-12W4 - Thermocouples at all depths are operating properly. All piezometers in this well are not operational. There are no plans to replace the equipment.

Algar

04-19-082-12W4 - Thermocouples at all depths are operating properly. Piezometer at 503.5 mKB is not operational. There are no plans to replace the equipment.

09-13-082-12W4 - Thermocouples at all depths are operating properly. All piezometers in this well are not operational. There are no plans to replace the equipment.

15-13-082-12W4 - Thermocouples at all depths are operating properly. Piezometer at 516 m is the only pressure gauge operating properly. There are no plans to replace the equipment.

16-13-082-12W4 - Thermocouples at all depths are operating properly. Piezometers at 503.3 and 497.5 mKB are not operational. There are no plans to replace the equipment.
Highway 63 Profile Survey
16 km of Highway 63’s road profile adjacent to the Great Divide Project Area was resurveyed in 2018. Southbound lanes (original highway) continues to have agreement between the 2016 - 2017 data with no deviations of concern. Northbound lanes (recently constructed) observed post-construction subsidence and surface elevation changes continue to occur. Deviation, if present, cannot be differentiated from post-construction subsidence at this time.

Static Monument Survey
39 monuments resurveyed in 2018 (16 at Algar, 18 at Pod One, & 5 controls). At Algar, slight subsidence in the area north of the Algar CPF was observed. At Pod One, slight uplift in the area southwest of the Pod One CPF was observed. Highway 63 road profiles and all static monuments will be resurveyed in summer of 2019.
Pod One 4D Seismic

Geological cross section across seismic data

PP(Base) (Primary) conventional seismic is the difference between the 2005 and 2010 seismic volumes.

PS(Shear) data shows changes in the shear component—which is an indicator of steam in the rock since 2010.

NRMS (Normalized Root Mean Square of the differences between the 2005 and 2010 surveys) which highlights and confirms change in the reservoir since 2005.
NRMS - normalized root mean square represents the % change in the seismic signal since steaming operations began

Shear Data - should represent the extent of the steam chamber

The NRMS represents the percent change in the reservoir since steaming operations commenced in 2007. This roughly corresponds to produced bitumen and should represent the various steam chambers. The shear data is not affected by steam, gas or bitumen heated above 80 C, as this acts like a liquid. The resulting map should show the current extend of the steam chambers. The two maps should be similar and are not, therefore the results of the 4D seismic are inconclusive. Possible reasons for this include plant and highway noise, and errors resulting from using different geophones at different locations in the two surveys.
Subsurface - Scheme Performance
Great Divide Well Layout

Pod One
- 23 Well Pairs (101N, 101S, 102S, 102W and 104)
- 13 Infills
- SAGD well pairs in 101N, 101S, 102S and 102W were drilled at 100m spacing
- SAGD well pairs in 104 were drilled at 80m spacing
- All infills (except 102 INF06 @35m) were drilled at 50m spacing between the SAGD producers

Algar
- 18 Well Pairs (201, 202 and 203)
- All SAGD well pairs except 202 R01 were drilled at 100m spacing
- 202 R01 was drilled 35m from 201-01 and 65m from 202-02 well pair
Pod One Performance

Average of Produced Bitumen per day
Average of Prod Water per day
Average of Steam Inj per day
Average of CSOR
Average of CSWR
Sum of Well Pair Count

Great Divide SAGD Facilities - 10587
Algar Performance

Great Divide SAGD Facilities - 10587
Pod One - Pad 101N Production

Average of Allocated Oil (m³) - 101N
Average of Allocated Water (m³) - 101N
Average of Allocated Steam (m³) - 101N
Pod One Pad 102S Production

Average of Allocated Oil (m³) - 102S
Average of Allocated Water (m³) - 102S
Average of Allocated Steam (m³) - 102S
Pod One Pad 104 Production

Average of Allocated Oil (m3) - 104
Average of Allocated Water (m3) - 104
Average of Allocated Steam (m3) - 104
Algar Pad 203 Production

Average of Allocated Oil (m³) - 203
Average of Allocated Water (m³) - 203
Average of Allocated Steam (m³) - 203
Great Divide Performance - Cumulative Production by Pad

Great Divide SAGD Facilities - 10587
Great Divide Performance - Cumulative Steam to Oil Ratio by Pad

Cumulative Steam to Oil Ratio (CSOR) by Pad:
- 101N
- 101S
- 102S
- 102W
- 104
- 201
- 202
- 203

Data spans from 2007-12 to 2018-09.
# Pod One Performance - Well Summary

<table>
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<tr>
<th>Well Pad</th>
<th>Well Pair</th>
<th>Date</th>
<th>Months On</th>
<th>Cum Oil m³</th>
<th>Cum Steam m³</th>
<th>Oil Rate (m³/day)</th>
<th>CSOR</th>
<th>Lift</th>
<th>Comments</th>
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<tr>
<td>Well Pad</td>
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<td>Date</td>
<td>Months On</td>
<td>Cum Oil m³</td>
<td>Cum Steam m³</td>
<td>Oil Rate (m³/day)</td>
<td>CSOR</td>
<td>Lift</td>
<td>Comments</td>
</tr>
<tr>
<td>----------</td>
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<tr>
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<td>62</td>
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<td>102-INF03</td>
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<td>102-INF04</td>
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<tr>
<td>Well Pad</td>
<td>Well Pair</td>
<td>Date</td>
<td>Months On</td>
<td>Cum Oil m3</td>
<td>Cum Steam m3</td>
<td>Oil Rate (m3/day)</td>
<td>CSOR</td>
<td>Lift</td>
<td>Comments</td>
</tr>
<tr>
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<tr>
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<td>101</td>
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<tr>
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<td>Sep-2017</td>
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<td>Intermittent, Sand Issues, BW</td>
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<td>Sep-2017</td>
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<td>5.85</td>
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<td>BW / Evaluating Pump Strategy</td>
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<tr>
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<td>Sep-2017</td>
<td>101</td>
<td>77,413.6</td>
<td>487,583</td>
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<td>6.30</td>
<td>Gas Lift</td>
<td>BW / Evaluating Pump Strategy</td>
</tr>
<tr>
<td>202</td>
<td>202-01</td>
<td>Sep-2017</td>
<td>101</td>
<td>94,503.8</td>
<td>207,702</td>
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<td>2.20</td>
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<td>Edge Well</td>
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<tr>
<td>202</td>
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<td>Sep-2017</td>
<td>101</td>
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<tr>
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<tr>
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<tr>
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<tr>
<td>203</td>
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<td>Average Well, Near Edge</td>
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<td>5.65</td>
<td>Gas Lift</td>
<td>Edge Well, Delayed Start Up</td>
</tr>
</tbody>
</table>
Pod One - Water Balance
Cumulative Steam In / Water Produced

Steam / Water Ratio

- 101N
- 101S
- 102S
- 102W
- 104
Algar - Water Balance
Cumulative Steam In / Water Produced

Steam / Water Ratio

Great Divide SAGD Facilities - 10587
Notes:

1. Pad 101N only 101-04 and 101-05 are producing
2. Additional of estimated infill recoveries of approximately 8% for Pads 101S, 102W, 102S, and 104
3. Estimated Pad Recovery is based on the basic SAGD process
4. Pad 101N injectors were plugged back approximately 1/3 back from well toes
5. Initial Pad recoveries are proving to be on the conservative side
Algar - Recoverable Bitumen by Pad

Notes:

1. Pad 203 has completed SAGD+ ® on a trial basis. Reserves will be adjusted when the commercial project begins. An additional recovery between 5 to 8% of the OBIP is estimated.

2. Estimated Pad Recovery is based on the basic SAGD process.
Surface - Facilities
Pod One Plant

- Steam Generation Building
- Boiler Feedwater Tanks
- Source Water Pumping Building
- Pad 104
- Temporary Incinerator
- Evaporator Building
- Evaporator Towers
- Glycol Building
- Treater / FWKO Building
- Trucking Facility
- Surface Water Collection Pond
- Control Room and Admin Building
- Tank Building
- Tank Farm
Pod One Facilities

Key Points
Design Capacity ~ 1,600 m³/day bitumen

Steam Generation: Drum boilers
  Operating pressure 6,300 kPa
  Deliver 4,300 m³/day steam @ 98% + Quality

Treating: Diluent addition

Water Recycle: IGF, WS Filter, Two vertical tube falling film evaporator towers

Waste Water: Waste water shipped to Algar 2nd Stage Evaporators

Source water: 3 operating source water wells in the Lower Grand Rapids formation, 1 other source water well approved
Algar Facilities

**Key Points**

Design *Capacity* ~ 1,600 m³/day bitumen

*Steam Generation*: Drum boilers
  - Operating pressure 6,700 kPa
  - Deliver 4,800 m³/day steam @ 98% + Quality

*Treating*: Diluent addition

*Water Recycle*: IGF, WS Filter, Two vertical tube falling film evaporator towers

*Waste Water*: All water shipped from facility to approved disposal sites

*Source water*: 3 operating source water wells in the Lower Grand Rapids formation, 1 other source water well approved
Great Divide Plant Modifications

Pod One

- Replaced corroded 10,000 bbl tank with new 10,000 bbl tank from inventory
- Replaced Water and Process Lab with a new Water and Process Lab
- Upgraded Sumps in buildings
- Upgraded Tank thief hatches to stainless steel

Algar

- Upgraded Sumps
- Upgraded Tank Thief hatches to stainless steel
- Converted wells 201-P3, P4 and P5 to gas lift
- Installed Inspection Manway Culvert on Diluent Pipeline from Pod One to Algar
Pod One and Algar Integration

Great Divide SAGD Facilities - 10587
Surface - Facility Performance
The reliability considers the two steam Boilers at the plant.

For the period October 1, 2017 to September 30, 2018 the steam plant has averaged 101.7% of the original design basis (4,320 m$^3$/day) and 92.6% of the designed total fluid capacity (5,920 m$^3$/day).

This performance compares to the previous 12 months. Which had a steam generation of 95.4% and a total fluid throughput of 85.5% of plant design capacity.

Downtime Hours is the reported downtime for the Well Pairs.
Algar CPF Performance

The reliability considers the two steam Boilers at the plant. The Cogen steam is not included.

For the 12 months from October 1 2017, to the of September 30, 2018 the steam plant output has averaged 96.4% of the original design basis (4800 m³/day) and 81.8% of the designed total fluid handling capacity (6400 m³/day).

This performance compares to the previous 12 months which had a steam generation of 96.7% and total fluid throughput of 85.0% of plant design capacity.

Downtime Hours is the reported downtime for the Well Pairs.
Pod One Energy Balance

Greenhouse Gas Emissions Reported for December, 2017 = 237,333 t CO₂ equivalent
Greenhouse Gas Emissions Reported for December, 2017 = 288,064 t CO₂ equivalent
Algar Co-Generation Facility

- Designed to produce 13.1 MW electricity from GT and 588 m$^3$/d of steam from the HRSG
- Horse River sub-station on line June 2011
- Running near capacity with power distributed to both Algar and Pod One
- Steam being used at Algar
Surface - Measurement and Reporting
Changes to MARP

1. Updated MARP to include disposal well at Pod One, Pad 101.
Pod One uses manual oil cuts however procedures implemented 2012 are clearly showing improved results.

The proration factor at Algar is calculated from the interconnect pipeline volumes whereas the Pod One proration factor is calculated from truck receipts less the Algar pipeline volumes and is subject to typical truck measurement differences.
Surface - Water Recycle
Source Water Wells - Pod One

<table>
<thead>
<tr>
<th>Year</th>
<th>Pod One Water Withdrawals (m$^3$/year)</th>
<th>Licenced Maximum Annual Diversion (m$^3$/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>132,670</td>
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<tr>
<td>2013</td>
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<td>292,000</td>
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<td>2016</td>
<td>156,313</td>
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<td>2017</td>
<td>87,536</td>
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<td>2018</td>
<td>86,310</td>
<td>292,000</td>
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</table>

Water Act Licence 00240458-01-00

<table>
<thead>
<tr>
<th>Well Location</th>
<th>Production Interval (meters below grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-17-082-12 W4M</td>
<td>300 - 350</td>
</tr>
<tr>
<td>09-17-082-12 W4M</td>
<td>300 - 350</td>
</tr>
<tr>
<td>08-17-082-12 W4M</td>
<td>300 - 350</td>
</tr>
<tr>
<td>02-17-082-12 W4M (standby)</td>
<td>324 - 330</td>
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</table>

All wells use the Grand Rapids Formation for source water.
**Source Water Wells - Algar**

<table>
<thead>
<tr>
<th>Year</th>
<th>Algar Water Withdrawals (m³/year)</th>
<th>Licenced Maximum Annual Diversion (m³/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>96,164</td>
<td>330,000</td>
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<tr>
<td>2013</td>
<td>78,917</td>
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<td>2014</td>
<td>45,632</td>
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<td>2015</td>
<td>45,142</td>
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<tr>
<td>2016</td>
<td>68,956</td>
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<td>2017</td>
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<td>2018</td>
<td>21,854</td>
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**Water Act Licence 00240527-00-02**

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<th>Well Location</th>
<th>Production Interval (meters below grade)</th>
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<td>02-19-082-11 W4M standby</td>
<td>356 - 382</td>
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<tr>
<td>03-19-082-11 W4M</td>
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<td>04-19-082-11 W4M</td>
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<tr>
<td>06-19-082-11 W4M</td>
<td>347 - 382</td>
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</table>

**Monthly Water Diversion Volumes (Algar)**

All wells use the Grand Rapids Formation for source water.
Evaporator Waste Integration

Pod 1

Evap waste

T-728

Truck-Transfer

Truck-Out

T-726

Algar

Algar Evap. System

Source Water Wells

FT 51704 52604 53204

FT 90304

T-400

Utility Water

FT 55805

Process Make-up Recycled to Process

Truck-Out
• Evaporators produce high quality boiler feed water efficiently while generating a highly concentrated brine for disposal.

• At Algar a second stage evaporator further concentrates both the Algar brine and a portion of the Pod One brine to improve water reuse and minimize disposal.

• Disposal concentrations are close to crystallizer performance.

• Chemical optimization has significantly improved evaporator reliability.
Water Recycle Ratio

- The series evaporator operation at Algar provides high recycle rates and improved reliability.

- The Algar operation accommodates waste from the parallel evaporators at Pod One and brine is shipped from Pod One to Algar.

- By treating part of the Pod One blow-down at Algar the average yearly water recycle ratio for both plants is approximately 99.2%.
Water Disposal and Directive 81 Compliance

### Pod One Water Volumes
- Fresh Water Make-up: 98,662 m³
- Produced Water: 1,563,307 m³
- Disposal: 44,380 m³

### Algar Water Volumes
- Fresh Water Make-up: 19,921 m³
- Produced Water: 1,621,906 m³
- Disposal: 0 m³

### Directive 81 Compliance

<table>
<thead>
<tr>
<th></th>
<th>Disposal Limit</th>
<th>Actual Disposal</th>
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</thead>
<tbody>
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<td>Pod One</td>
<td>9.6%</td>
<td>2.7%</td>
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<tr>
<td>Algar</td>
<td>9.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Great Divide</td>
<td>9.7%</td>
<td>1.3%</td>
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</table>
Surface - Gas Recycle
### Pod One Natural Gas Usage Summary

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<thead>
<tr>
<th>Production Month</th>
<th>Purchased Gas (e3m³)</th>
<th>Solution Gas (e3m³)</th>
<th>Consumed Gas (e3m³)</th>
<th>Flared and Vented (e3m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct-17</td>
<td>9,527</td>
<td>277</td>
<td>10,050</td>
<td>76</td>
</tr>
<tr>
<td>Nov-17</td>
<td>9,396</td>
<td>327</td>
<td>9,937</td>
<td>68</td>
</tr>
<tr>
<td>Dec-17</td>
<td>9,509</td>
<td>371</td>
<td>10,132</td>
<td>65</td>
</tr>
<tr>
<td>Jan-18</td>
<td>9,557</td>
<td>174</td>
<td>9,987</td>
<td>62</td>
</tr>
<tr>
<td>Feb-18</td>
<td>8,027</td>
<td>423</td>
<td>8,684</td>
<td>52</td>
</tr>
<tr>
<td>Mar-18</td>
<td>9,499</td>
<td>489</td>
<td>10,259</td>
<td>43</td>
</tr>
<tr>
<td>Apr-18</td>
<td>9,334</td>
<td>347</td>
<td>9,937</td>
<td>46</td>
</tr>
<tr>
<td>May-18</td>
<td>9,327</td>
<td>563</td>
<td>10,157</td>
<td>49</td>
</tr>
<tr>
<td>Jun-18</td>
<td>9,189</td>
<td>330</td>
<td>9,778</td>
<td>44</td>
</tr>
<tr>
<td>Jul-18</td>
<td>9,385</td>
<td>312</td>
<td>9,969</td>
<td>43</td>
</tr>
<tr>
<td>Aug-18</td>
<td>9,088</td>
<td>745</td>
<td>10,057</td>
<td>50</td>
</tr>
<tr>
<td>Sep-18</td>
<td>8,693</td>
<td>1,048</td>
<td>9,921</td>
<td>33</td>
</tr>
</tbody>
</table>

### Algar Natural Gas Usage Summary

<table>
<thead>
<tr>
<th>Production Month</th>
<th>Purchased Gas (e3m³)</th>
<th>Solution Gas (e3m³)</th>
<th>Consumed Gas (e3m³)</th>
<th>Flared and Vented (e3m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct-17</td>
<td>10,320</td>
<td>1,285</td>
<td>11,600</td>
<td>5</td>
</tr>
<tr>
<td>Nov-17</td>
<td>10,336</td>
<td>1,176</td>
<td>11,508</td>
<td>3</td>
</tr>
<tr>
<td>Dec-17</td>
<td>10,833</td>
<td>920</td>
<td>11,754</td>
<td>0</td>
</tr>
<tr>
<td>Jan-18</td>
<td>10,801</td>
<td>767</td>
<td>11,565</td>
<td>3</td>
</tr>
<tr>
<td>Feb-18</td>
<td>9,529</td>
<td>887</td>
<td>10,411</td>
<td>5</td>
</tr>
<tr>
<td>Mar-18</td>
<td>10,699</td>
<td>864</td>
<td>11,507</td>
<td>55</td>
</tr>
<tr>
<td>Apr-18</td>
<td>10,238</td>
<td>960</td>
<td>11,193</td>
<td>5</td>
</tr>
<tr>
<td>May-18</td>
<td>10,337</td>
<td>1,421</td>
<td>11,709</td>
<td>10</td>
</tr>
<tr>
<td>Jun-18</td>
<td>10,088</td>
<td>1,277</td>
<td>11,362</td>
<td>3</td>
</tr>
<tr>
<td>Jul-18</td>
<td>10,339</td>
<td>1,366</td>
<td>11,702</td>
<td>2</td>
</tr>
<tr>
<td>Aug-18</td>
<td>10,410</td>
<td>1,194</td>
<td>11,586</td>
<td>18</td>
</tr>
<tr>
<td>Sep-18</td>
<td>9,161</td>
<td>1,151</td>
<td>10,233</td>
<td>80</td>
</tr>
</tbody>
</table>
Future Plans
Summary of Future Plans

- Connacher has no major projects planned for the next 12 months that would require additional AER approvals.
- Connacher has approval to drill five infill wells on Pad 203, currently scheduled for Q1 2019.
- Connacher has approval for three major projects, summarized in the next slides:
  - Pod One Sustaining Production
  - Algar Expansion and Sustaining Production
  - Pod One Mini Steam Expansion
  - Algar SAGD+ Commercialization
Pad 203 Infills

- Commercial Scheme Approval 10587Q
- 5 Infills Approved at Pad 203
Pod One Sustaining Production

- 10 Well Pair Approved for Pad 104 (Approval 10587H)
- Currently there are 4 existing Well Pairs at Pad 104
Great Divide SAGD Expansion Project

- EIA Deemed Complete
- Commercial Scheme Approval
  Received September, 2012
- EPEA Approval Amendment
  Received December, 2013
- Approved for expansion to 44,000 bbl/day
Near Future Development to include:

- Pad 232 (Phase 1A)
- Borrow Pit
- Utility Corridor
Pod One Mini Steam Expansion

- Commercial Scheme Approval 10587P
- 500 t/d of steam
- Allows for 2 Well Pair at Pad 104
- Steam Generator (17.26 MW)
- 2 Evaporator Units
- No additional water allocation required
**Algar SAGD+® Commercialization**

- Commercial Scheme Approval 10587K.
- Light hydrocarbon (solvent) and steam co-injection at all well pairs at Algar.
- Solvent to be recovered at facility for re-injection.
- EPEA 67(3) No objection received May, 2014.
- Construction began August, 2014 but not yet completed.
• Commercial Scheme Approval 10587K.

• 3 inch light hydrocarbon pipeline to all well pads.

• Installed on existing pipe rack.

• Construction completed but not yet commissioned.
Surface - Sulphur Production
Pod One Sulphur Emissions

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Average Sulphur Dioxide Emissions (t/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4 - 2017</td>
<td>0.26</td>
</tr>
<tr>
<td>Q1 - 2018</td>
<td>0.29</td>
</tr>
<tr>
<td>Q2 - 2018</td>
<td>0.26</td>
</tr>
<tr>
<td>Q3 - 2018</td>
<td>0.27</td>
</tr>
</tbody>
</table>

- Pod One EPEA SO$_2$ emission limit is 1.98 t/day
- Peak SO$_2$ emissions were 0.34 t/day: Aug 22, 2018

- Plant Total SO$_2$ = Flared SO$_2$ + Steam Generators SO$_2$
- There has been no material change in sulphur production observed over the past year of production at Pod One
- Connacher will continue to monitor produced gas H$_2$S concentrations, sulphur emissions and evaluate plans for sulphury recovery installations
- SO$_2$ production is well below emission limits
Algar Sulphur Emissions

- Plant Total SO$_2$ = Flared SO$_2$ + Steam Generators SO$_2$
- There has been no material change in sulphur production observed over the past year of production at Algar
- Connacher will continue to monitor produced gas H$_2$S concentrations, sulphur emissions and evaluate plans for sulphury recovery installations
- SO$_2$ production is well below emission limits

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Average Sulphur Dioxide Emissions (t/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4 - 2017</td>
<td>0.61</td>
</tr>
<tr>
<td>Q1 - 2018</td>
<td>0.69</td>
</tr>
<tr>
<td>Q2 - 2018</td>
<td>0.75</td>
</tr>
<tr>
<td>Q3 - 2018</td>
<td>0.84</td>
</tr>
</tbody>
</table>

- Algar EPEA SO$_2$ emission limit is 1.98 t/day
- Peak SO$_2$ emissions were 1.19 t/day: Sep 30, 2018
There are a total of 8 passive air monitoring stations at Pod One and Algar. These sites monitor for $\text{SO}_2$ and $\text{H}_2\text{S}$. For the reporting period there were no exceedances of the AAAQO.

Connacher is required to complete continuous ambient air monitoring station for $\text{SO}_2$, $\text{H}_2\text{S}$ and $\text{NO}_2$, as well as wind speed and wind direction. This monitoring is required 6 months per year. For the reporting period all measured concentrations were within the AAAQO’s.
Surface - Environment
Details of non-compliance events summarized above are available as an appendix to this presentation.
<table>
<thead>
<tr>
<th>Approval Date</th>
<th>Authorization No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 4, 2013</td>
<td>10587M</td>
<td>Pod One Full Field NCG Co-injection Scheme Approval</td>
</tr>
<tr>
<td>December 12, 2013</td>
<td>10587N</td>
<td>Pod One - Pad 101 and Pad 102 Infills (9) Scheme Approval</td>
</tr>
<tr>
<td>January 8, 2014</td>
<td>10587O</td>
<td>SAGD+® Trail Pad 104 Scheme Approval</td>
</tr>
<tr>
<td>March 21, 2014</td>
<td>10587P</td>
<td>Mini-Expansion at Pod One Scheme Approval</td>
</tr>
<tr>
<td>Pending</td>
<td></td>
<td>EPEA Approval Amendment for Mini-Expansion at Pod One</td>
</tr>
<tr>
<td>June 10, 2014</td>
<td>F36853</td>
<td>Pod One Facility Licence Amendment</td>
</tr>
<tr>
<td>August 1, 2014</td>
<td>F40209</td>
<td>SAGD+® Commercial Project Facility Licence Amendment</td>
</tr>
<tr>
<td>August 13, 2014</td>
<td>56423</td>
<td>SAGD+® Commercial Project Solvent Pipeline Licence</td>
</tr>
<tr>
<td>September 10, 2014</td>
<td>10587Q</td>
<td>Algar - Pad 203 Infills (5) Scheme Approval</td>
</tr>
<tr>
<td>October 1, 2014</td>
<td>10587R</td>
<td>Algar Full Field NCG Co-injection Scheme Approval</td>
</tr>
<tr>
<td>Pending</td>
<td></td>
<td>Algar Water Act Licence 240527-00-00 Renewal</td>
</tr>
<tr>
<td>Pending</td>
<td></td>
<td>Pod One Water Act Licence 240458-01-00 Renewal</td>
</tr>
<tr>
<td>February 8, 2016</td>
<td>10587S</td>
<td>Produced Water Disposal Operations at Pad 101N Approval</td>
</tr>
<tr>
<td>September 24, 2018</td>
<td>240008-01-00</td>
<td>EPEA Approval</td>
</tr>
</tbody>
</table>
Great Divide Inspections

<table>
<thead>
<tr>
<th>Inspection Date</th>
<th>Agency</th>
<th>Location</th>
<th>Inspection Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>November, 2017</td>
<td>AER</td>
<td>Pod One SAGD Facility</td>
<td>ID Numbers 469169 and 469172. Unsatisfactory result that required multiple corrective actions be implemented to mitigate deficiencies. Inspections closed.</td>
</tr>
<tr>
<td>November, 2017</td>
<td>AEP</td>
<td>Pod One Pad 101</td>
<td>Routine inspection, satisfactory result.</td>
</tr>
<tr>
<td>July, 2018</td>
<td>AER</td>
<td>Pod One and Algar SAGD Facilities</td>
<td>ID Numbers 477265, 477276, 477277, 477282, and 477296. Unsatisfactory result that required multiple corrective actions be implemented to mitigate deficiencies. Inspections closed.</td>
</tr>
<tr>
<td>July, 2018</td>
<td>AER</td>
<td>Pod One SAGD Facility</td>
<td>ID Number 477279. Specific inspection was overlooked when completing mitigation of deficiencies from 5 other inspection reports in July 2018 (see above). Unsatisfactory result that requires corrective action. AER has provided an extension to November 30, 2018 to implement corrective actions.</td>
</tr>
</tbody>
</table>

Details of facility inspections summarized above are available as an appendix to this presentation.
Great Divide Audits

<table>
<thead>
<tr>
<th>Audit Date</th>
<th>Agency</th>
<th>Location</th>
<th>Issue and Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- No audits were completed during the reporting period

- Technical data, such as flare and venting logs and meter calibration records were provided to the AER as part of the inspections completed in November 2017 and July 2018
## Great Divide Voluntary Self Disclosures

<table>
<thead>
<tr>
<th>Date</th>
<th>Licence Number</th>
<th>Location</th>
<th>Issue and Resolution</th>
</tr>
</thead>
</table>

Details of non-compliance events summarized above are available as an appendix to this presentation.
Great Divide Monitoring Programs

Connacher currently implements the following monitoring programs at the Great Divide Project:

- Groundwater monitoring program;
- Wildlife monitoring program;
- Ambient air monitoring program;
- Industrial wastewater and Industrial runoff monitoring program; and,
- Soil monitoring program.

No changes or developments to EPEA compliance monitoring programs
Appendix A - List of Additional Material Submitted
Additional Material Attached to Submission:

Energy Usage & Balance for Algar & Great Divide

Electrical Use at Pod One & Algar

Connacher Heave Monitoring Data

Pump Runlife Histories

Observation Well Pressure and Temperature Data

Production and Injection Well Pressure and Temperature Data

Great Divide Regulatory Compliance Table

Great Divide Summary of Non-compliance Events and VSDs
Appendix B - Bitumen Reserves and Resources
1) Proved reserves are those reserves that can be estimated with a high degree of certainty to be recoverable. It is likely that the actual remaining quantities recovered will exceed the estimated proved reserves.

2) Probable reserves are those additional reserves that are less certain to be recovered than proved reserves. It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated proved plus probable reserves.
Appendix C - Individual Well Performance
Pod One - 101-01

Average of Allocated Oil (m3) - 101-01
Average of Allocated Water (m3) - 101-01
Average of Allocated Steam (m3) - 101-01
Pod One - 101-02

Average of Allocated Oil (m3) - 101-02
Average of Allocated Water (m3) - 101-02
Average of Allocated Steam (m3) - 101-02
Pod One - 101-03

Average of Allocated Oil (m3) - 101-03
Average of Allocated Water (m3) - 101-03
Average of Allocated Steam (m3) - 101-03
Pod One - 101-06

Average of Allocated Oil (m3) - 101-06
Average of Allocated Water (m3) - 101-06
Average of Allocated Steam (m3) - 101-06
Pod One - 101-07

Average of Allocated Oil (m3) - 101-07
Average of Allocated Water (m3) - 101-07
Average of Allocated Steam (m3) - 101-07
Pod One - 101-08

Average of Allocated Oil (m3) - 101-08
Average of Allocated Water (m3) - 101-08
Average of Allocated Steam (m3) - 101-08
Pod One - 101-09

Average of Allocated Oil (m3) - 101-09
Average of Allocated Water (m3) - 101-09
Average of Allocated Steam (m3) - 101-09
Pod One - 101-10

Average of Allocated Oil (m3) - 101-10
Average of Allocated Water (m3) - 101-10
Average of Allocated Steam (m3) - 101-10
Pod One - 101-F10

Average of Allocated Oil (m$^3$) - 101-inf10
Average of Allocated Water (m$^3$) - 101-inf10
Average of Allocated Steam (m$^3$) - 101-inf10
Pod One - 101-F11

Average of Allocated Oil (m3) - 101-inf11
Average of Allocated Water (m3) - 101-inf11
Average of Allocated Steam (m3) - 101-inf11
Pod One - 102-12

Average of Allocated Oil (m³) - 102-12
Average of Allocated Water (m³) - 102-12
Average of Allocated Steam (m³) - 102-12
Pod One - 102-13

Average of Allocated Oil (m3) - 102-13
Average of Allocated Water (m3) - 102-13
Average of Allocated Steam (m3) - 102-13
Pod One - 102-14

Average of Allocated Oil (m3) - 102-14
Average of Allocated Water (m3) - 102-14
Average of Allocated Steam (m3) - 102-14
Pod One - 102-F13

Average of Allocated Oil (m3) - 102-inf13
Average of Allocated Water (m3) - 102-inf13
Average of Allocated Steam (m3) - 102-inf13
Pod One - 102-03

Average of Allocated Oil (m3) - 102-03

Average of Allocated Water (m3) - 102-03

Average of Allocated Steam (m3) - 102-03
Pod One - 102-05

Average of Allocated Oil (m3) - 102-05
Average of Allocated Water (m3) - 102-05
Average of Allocated Steam (m3) - 102-05
Pod One - 102-F05

Average of Allocated Oil (m3) - 102-inf05
Average of Allocated Water (m3) - 102-inf05
Average of Allocated Steam (m3) - 102-inf05
Pod One - 102-F06

Average of Allocated Oil (m³) - 102-inf06
Average of Allocated Water (m³) - 102-inf06
Average of Allocated Steam (m³) - 102-inf06
Pod One - 104-03

Average of Allocated Oil (m³) - 104-03
Average of Allocated Water (m³) - 104-03
Average of Allocated Steam (m³) - 104-03
Pod One - 104-05

Average of Allocated Oil (m3) - 104-05
Average of Allocated Water (m3) - 104-05
Average of Allocated Steam (m3) - 104-05
Pod One - 104-06

Average of Allocated Oil (m³) - 104-06
Average of Allocated Water (m³) - 104-06
Average of Allocated Steam (m³) - 104-06
Algar - 201-01

Average of Allocated Oil (m³) - 201-01
Average of Allocated Steam (m³) - 201-01
Average of Allocated Water (m³) - 201-01
Algar - 201-02

201-02

Average of Allocated Oil (m³) - 201-02
Average of Allocated Steam (m³) - 201-02
Average of Allocated Water (m³) - 201-02
Algar - 201-05

201-05

Average of Allocated Oil (m3) - 201-05
Average of Allocated Steam (m3) - 201-05
Average of Allocated Water (m3) - 201-05
Algar - 202-01-1

202-R01

Average of Allocated Oil (m³) - 202-R01
Average of Allocated Steam (m³) - 202-R01
Average of Allocated Water (m³) - 202-R01
Algar - 202-02

202-02

Average of Allocated Oil (m³) - 202-02

Average of Allocated Steam (m³) - 202-02

Average of Allocated Water (m³) - 202-02
Algar - 202-03

Average of Allocated Oil (m3) - 202-03
Average of Allocated Steam (m3) - 202-03
Average of Allocated Water (m3) - 202-03
Algar - 202-04

Average of Allocated Oil (m3) - 202-04
Average of Allocated Steam (m3) - 202-04
Average of Allocated Water (m3) - 202-04
Algar - 202-05

202-05

Average of Allocated Oil (m3) - 202-05
Average of Allocated Steam (m3) - 202-05
Average of Allocated Water (m3) - 202-05
Algar - 203-01

203-01

Average of Allocated Oil (m³) - 203-01
Average of Allocated Steam (m³) - 203-01
Average of Allocated Water (m³) - 203-01
Algar - 203-02

203-02

Average of Allocated Oil (m3) - 203-02
Average of Allocated Steam (m3) - 203-02
Average of Allocated Water (m3) - 203-02
Algar - 203-04

203-04

Average of Allocated Oil (m$^3$) - 203-04
Average of Allocated Steam (m$^3$) - 203-04
Average of Allocated Water (m$^3$) - 203-04
Algar - 203-05

Average of Allocated Oil (m3) - 203-05
Average of Allocated Steam (m3) - 203-05
Average of Allocated Water (m3) - 203-05
Algar - 203-07

Average of Allocated Oil (m3) - 203-07
Average of Allocated Steam (m3) - 203-07
Average of Allocated Water (m3) - 203-07