阳光油砂

SUNSHINE OILSANDS LTD.

Sunshine Oilsands Ltd.
BA Code A2TF

WEST ELLS SAGD

Scheme No. 11764E
AER In Situ Performance Presentation 2017

Presenters

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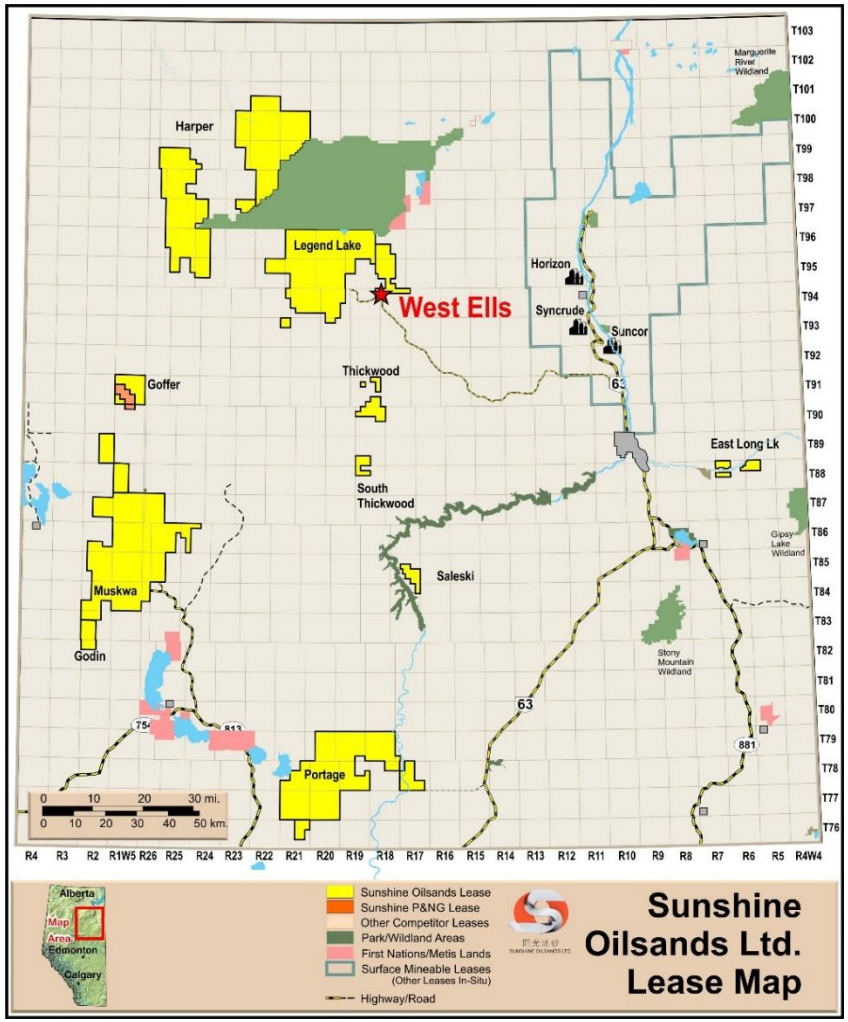
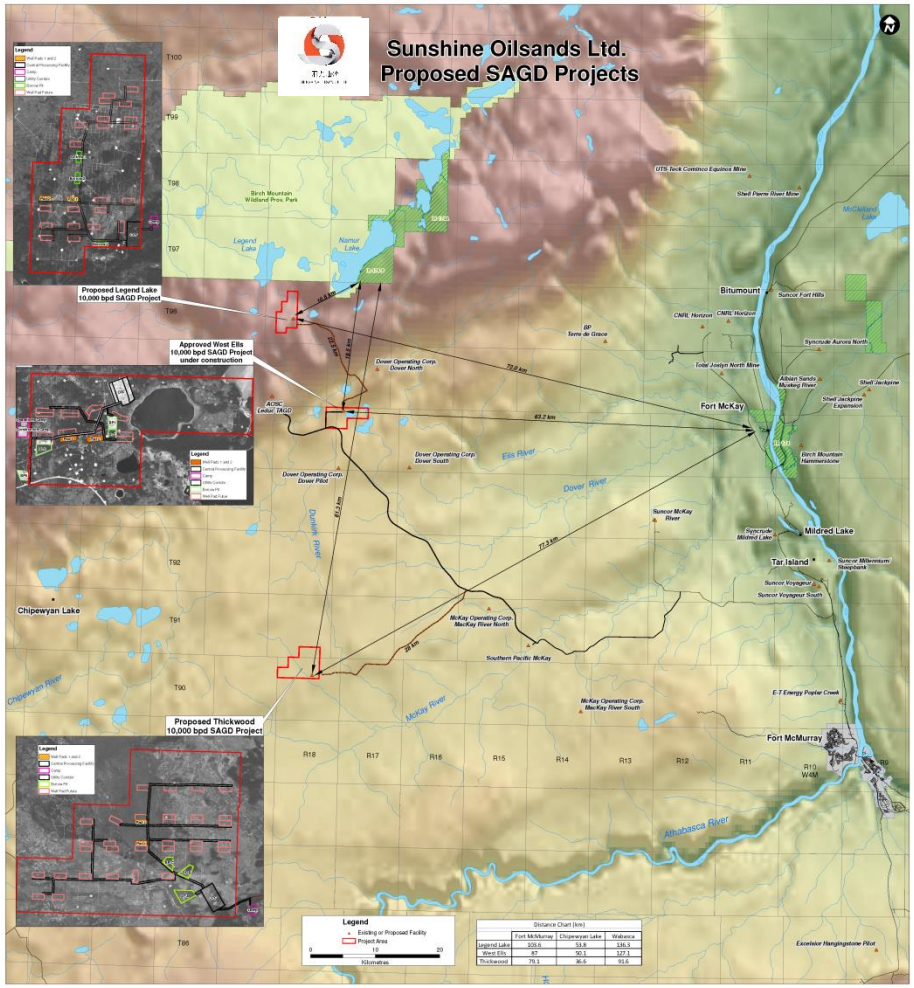
Overview

With almost 1,000,000 acres of oil sands and PNG leases, Sunshine holds current Scheme approvals for two 10,000bpd SAGD projects, and a third in the application process.



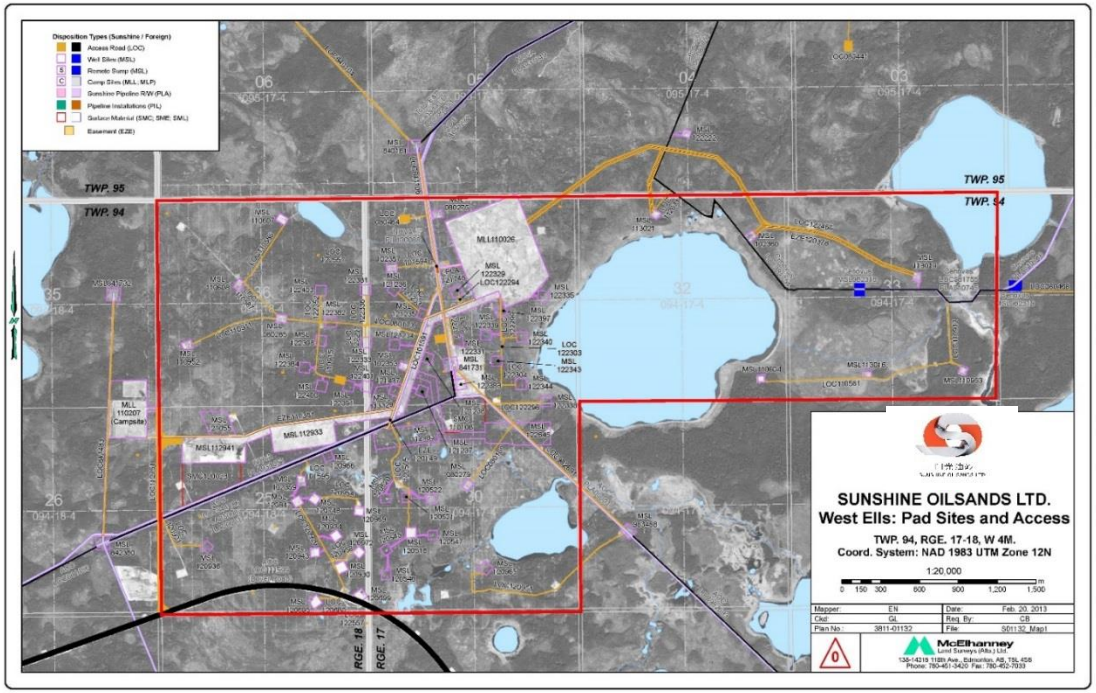
Projects Status

Sunshine's main focus is currently West Ells, but Sunshine holds an approval for its Thickwood 10,000bbl/d SAGD project and is in the application stage for the Legend Lake 10,000bbl/d project

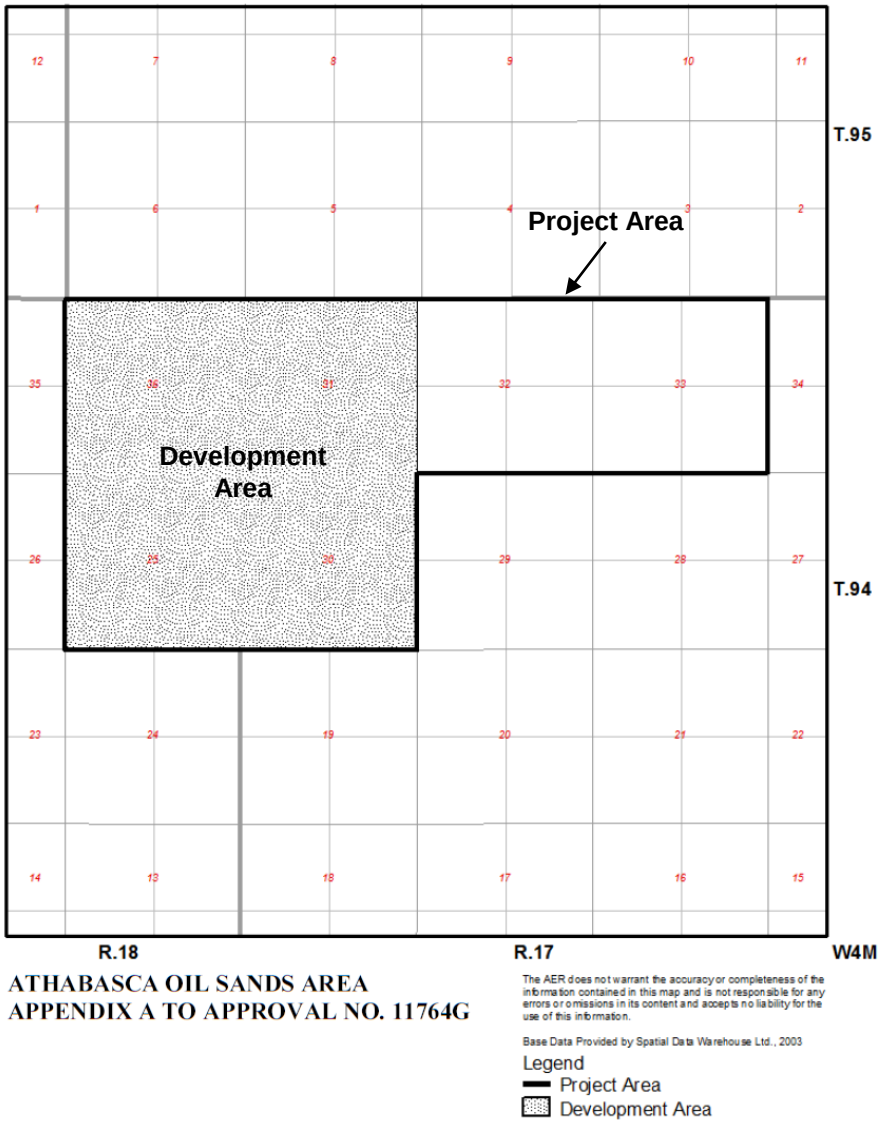


West Ells SAGD

- Covering 9,856 contiguous gross hectares in the Athabasca Oil Sands Region
- Two phases of 5,000bbl/d
  - Phase 1 currently in Operation since September 2015 is supplied by Pad 2
  - Phase 2 will commence in the future and is supplied by Pad 3 which has already been drilled.
  - MSL 112941 and MSL 112933 were cleared of vegetation with no soil disturbance, anticipated to serve as make-up pads as the project advances
- First production December 2015



Development and Project Area



Area	Land Description
Development Area (4 sections)	T94 R17W4; Sec 30, 31 T94 R18W4; Sec 25, 36
Project Area (6 sections)	T94 R17W4; Sec 30, 31, 32, 33 T94 R18W4; Sec 25, 36

Development timeline – Scheme 11764

- Mar 31, 2010 - West Ells application submitted to the AER (formerly ERCB)
- January 26, 2012 – Commercial Scheme Approval 11764 received
- February to September 2012 – All season road access construction
- October 2, 2012 – Site construction commences at West Ells
- December 2012- March 2013 – Wells drilled for Pad 2 and Pad 3
- 2013 – Civil work completed, general CPF construction of tank farms, buildings, evaporator and, construction of Operations camp
- 2014 - mid-2015 – Work completed on steam and emulsion lines to pads, final construction and QA/QC
- September 22, 2015 – First Steam at West Ells
- December 7, 2015 – First production from West Ells

Scheme Amendments

- Pad alignment – 11764A and 11764B
  - May 30, 2012 – Amendment 1 filed to change well bore trajectory and pad alignment, approval received February 8th, 2012
  - August 21, 2012 – Amendment 2 filed to change well bore trajectory and pad alignment, approval received October 2, 2012

- Infill wells – 11764C
  - April 8, 2013 – Application submitted for infill wells to improve resource recovery, approval received August 9, 2013

- CPF Changes – 11764D
  - May 28, 2013 – Application filed for minor changes to CPF design such as fuel gas consumption and cold water equivalent for steam, approval received August 30, 2013

Scheme Amendments

- NCG Co-injection – 11764E
  - October 24, 2013 – Application for NCG co-injection during Phase 1 filed, approval received June 19, 2014

- NCG Co-injection Full Field – 11764F
  - July 18, 2014 – Application for NCG Co-injection full field filed, approval received March 2, 2015

- Maximum Operating Pressure – 11764G
  - October 29, 2015 – Application filed to increase the MOP, this brought it in line both with Industry standard (80% cap rock fracture pressure), and with previously filed and approved amendments to the Directive 051 Injection approval for both Phase 1 and 2, approval received March 10, 2016

EPEA Approval Amendment

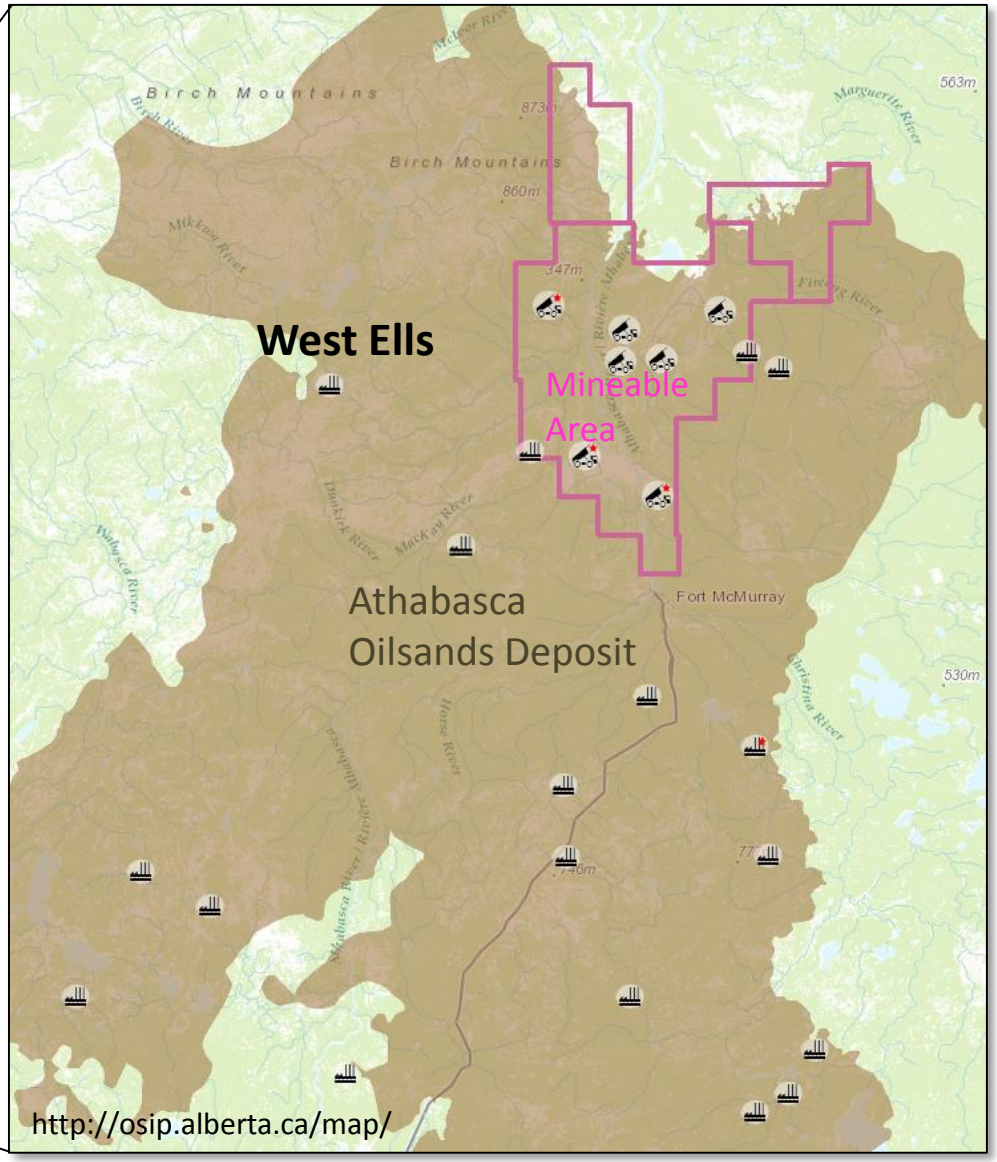
- CPF design changes
  - December 20, 2012 – Amendment application filed for minor design changes to the CPF that would have affected the modeling and emissions limits, approval received July 4, 2013

- Industrial Runoff Pond design correction
  - In response to a supplemental information request Sunshine had indicated that the designed runoff pond included a polyethylene liner. This was misstated as there was never a liner planned for, nor required. Sunshine confirmed that the pond had been built with a compacted clay liner with the appropriate Proctor compaction for a pond of this type
  - February 5, 2015 – Application filed to amend the approval to use the compacted clay liner as originally designed, approval received February 6, 2015

Geoscience

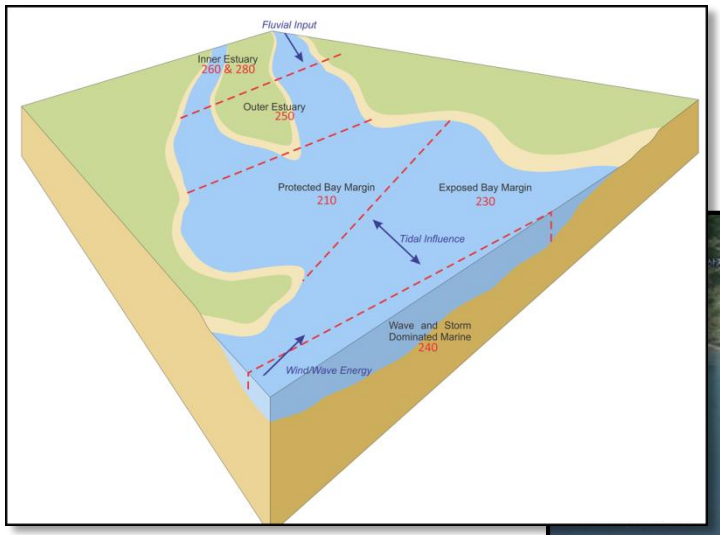
Location within the Athabasca Oilsands Deposit

West Ells
Located in the NW part of the Athabasca Oilsands Deposit, Alberta, Canada



Depositional Setting (Shallow Marine)

West Ells Depositional Model

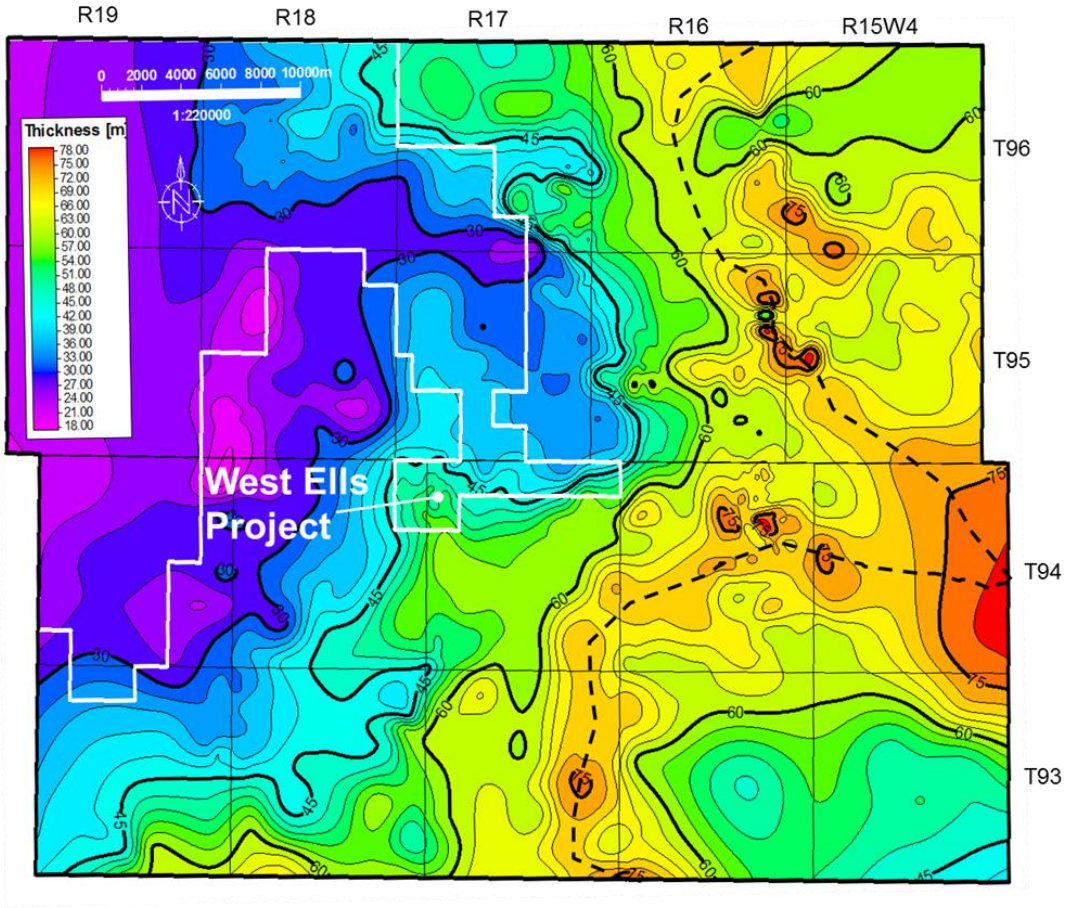


Modern Analog: Korea

The Wabiskaw sands are laterally extensive and were deposited along the emergent Devonian highs as the Boreal Sea transgressed over the Athabasca Basin.

Isopach Map (Clearwater Marker to Devonian)

"Paleotopographic" map

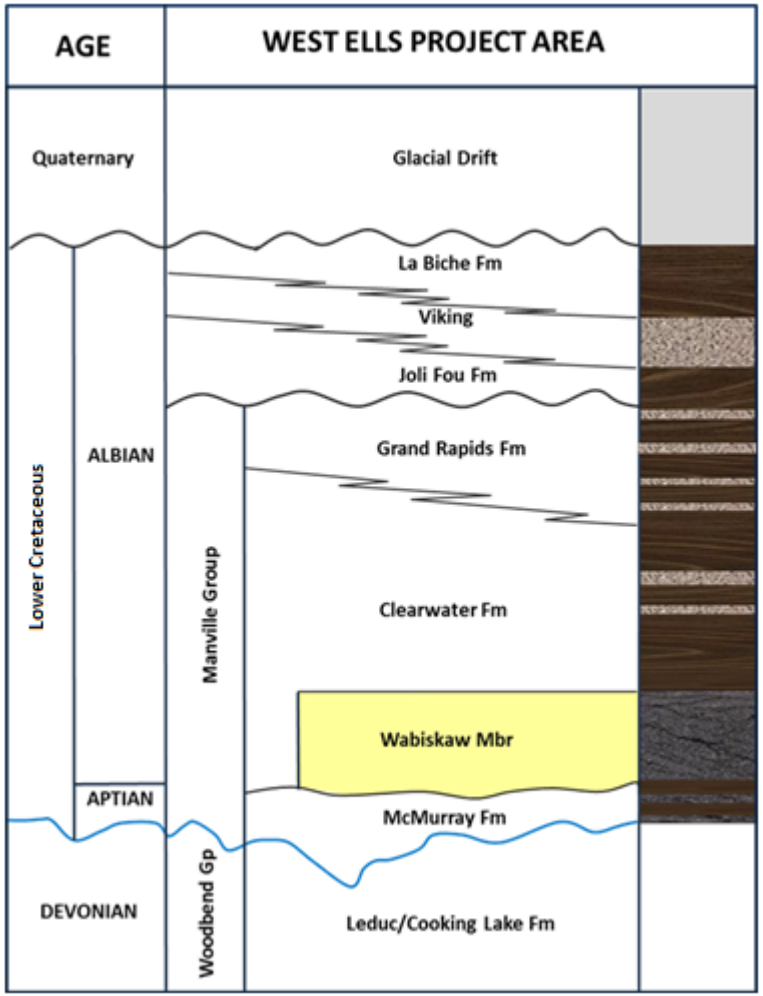


West Ells SAGD Project is located in an embayment in T94 R17 W4M.

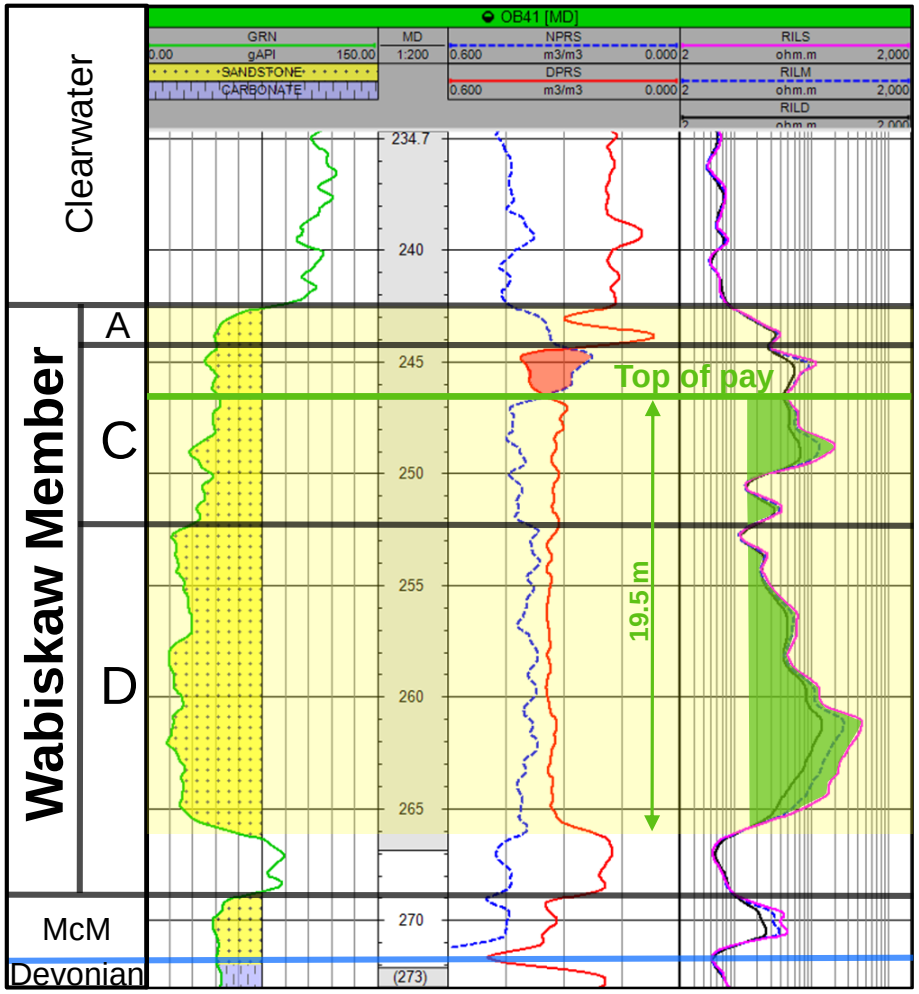
- Reflects paleotopography during the Late Cretaceous.
- Warm colors represent valleys and cooler colors represent highs.
- Major McMurray drainage systems are marked with a dashed line.
- Extensive amalgamated shoreface sands (Wabiskaw A, C, & D) were deposited on the east side of the emergent Devonian strata.

Stratigraphic Chart & Type Well

Stratigraphic chart



Type Well – OB41 (102/06-31-094-17W4)

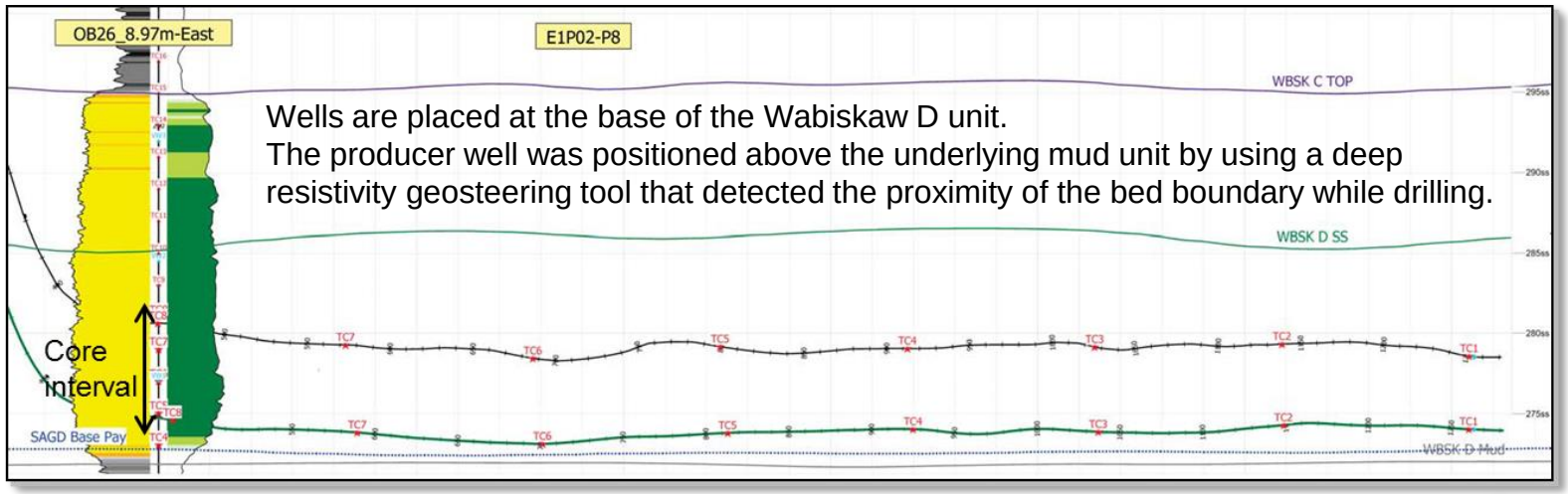


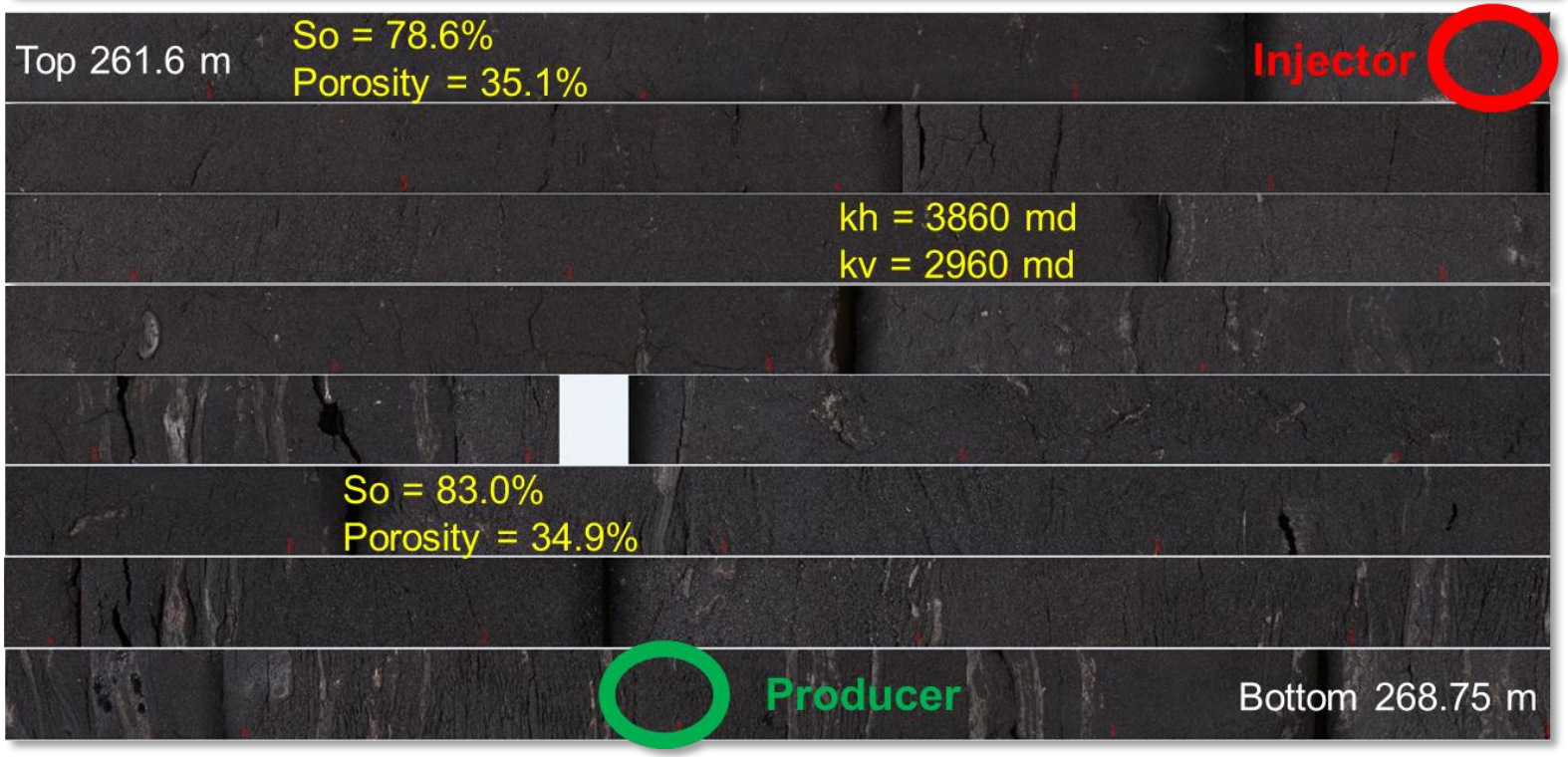
The SAGD wells are located at the base of the Wabiskaw D sand unit.

Average Reservoir Properties for Development Area

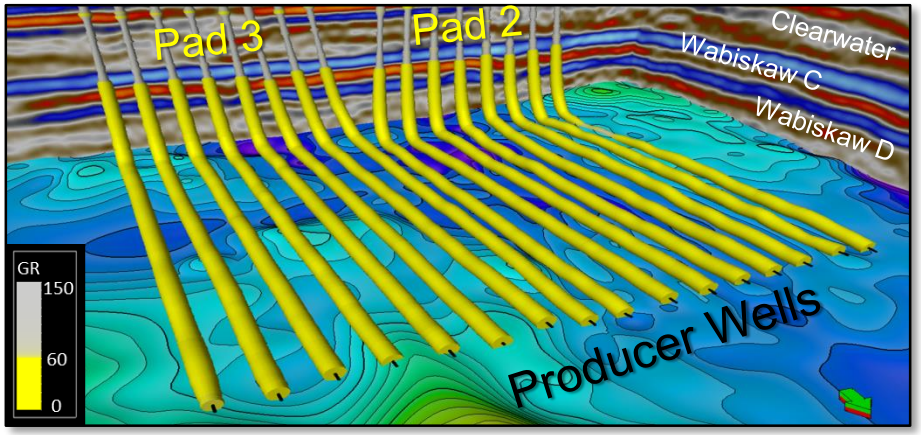
Property	Value
Bitumen saturation (%)	71
Porosity (%)	33
Grain size	Fine to medium
Net pay (m)	15.2
Horizontal perm. (D)	2.4
Vertical perm. (D)	1.7
Reservoir pressure (kpa)	600
Reservoir temperature (^{o}C)	9
Reservoir depth (m TVD)	265
Bitumen viscosity (cp)	> 1 million
Well length (m)	800
Well spacing (m)	70

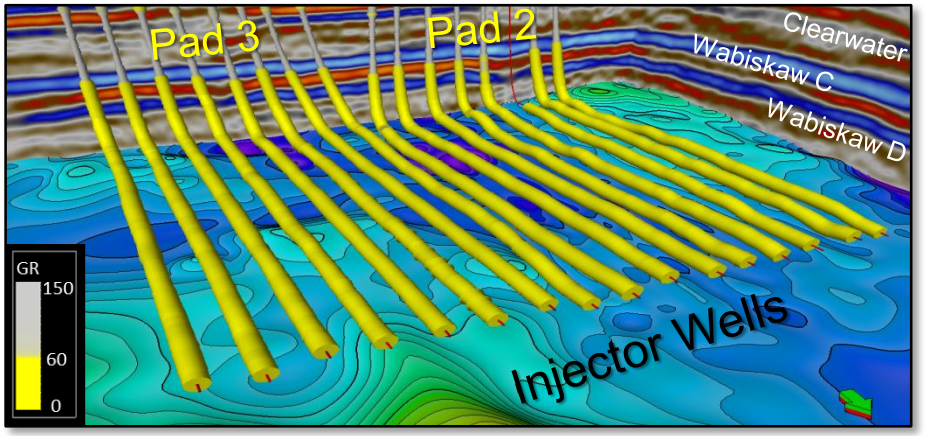
Typical SAGD Well Placement (e.g. Pair 8)





Uniform Gamma Ray Profile on SAGD Wells

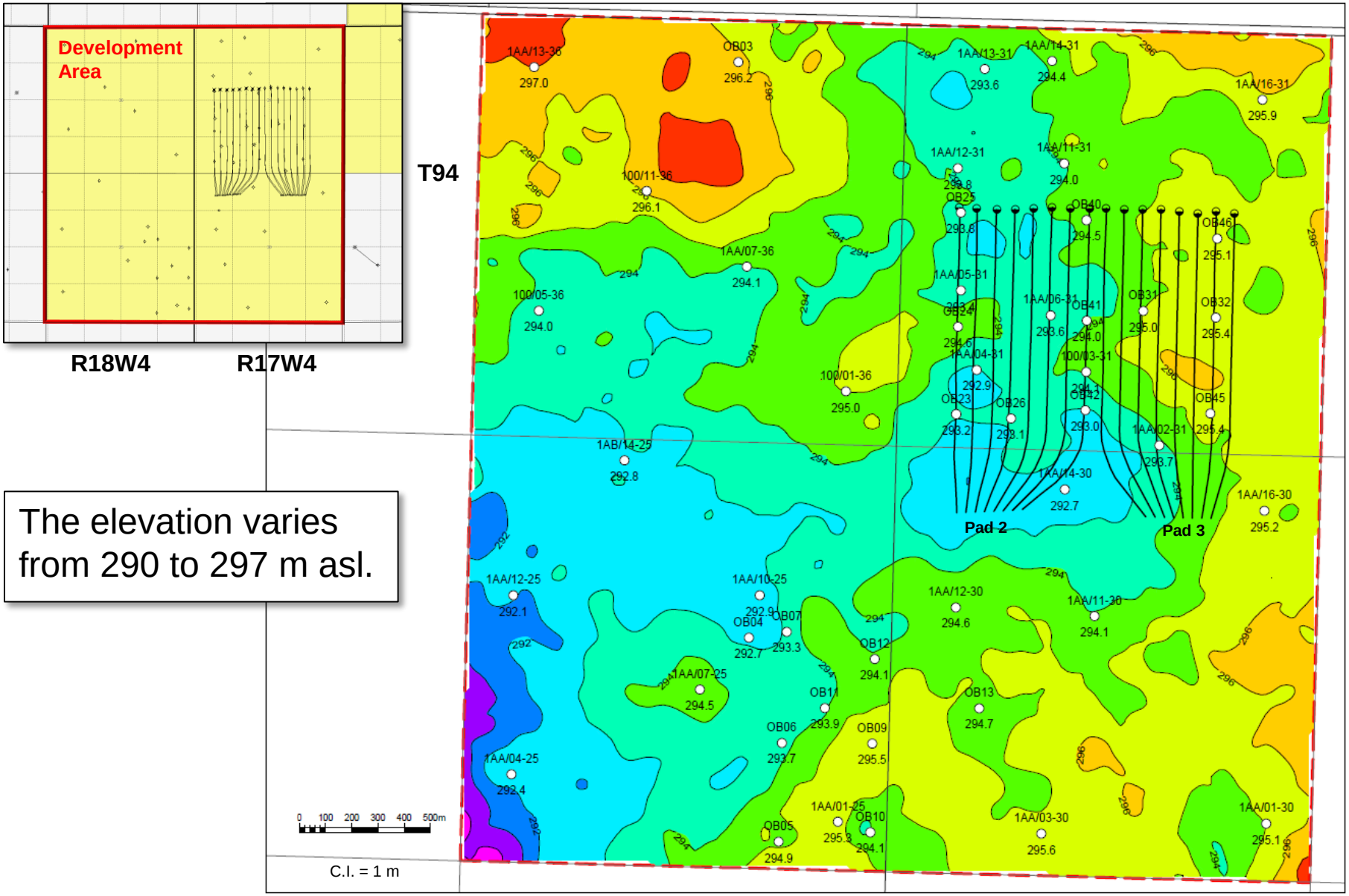




- Uniform gamma ray profile is indicative of a clean sandy shallow marine environment (e.g., shoreface)
- 3D seismic data shows continuity of Wabiskaw reservoir units.

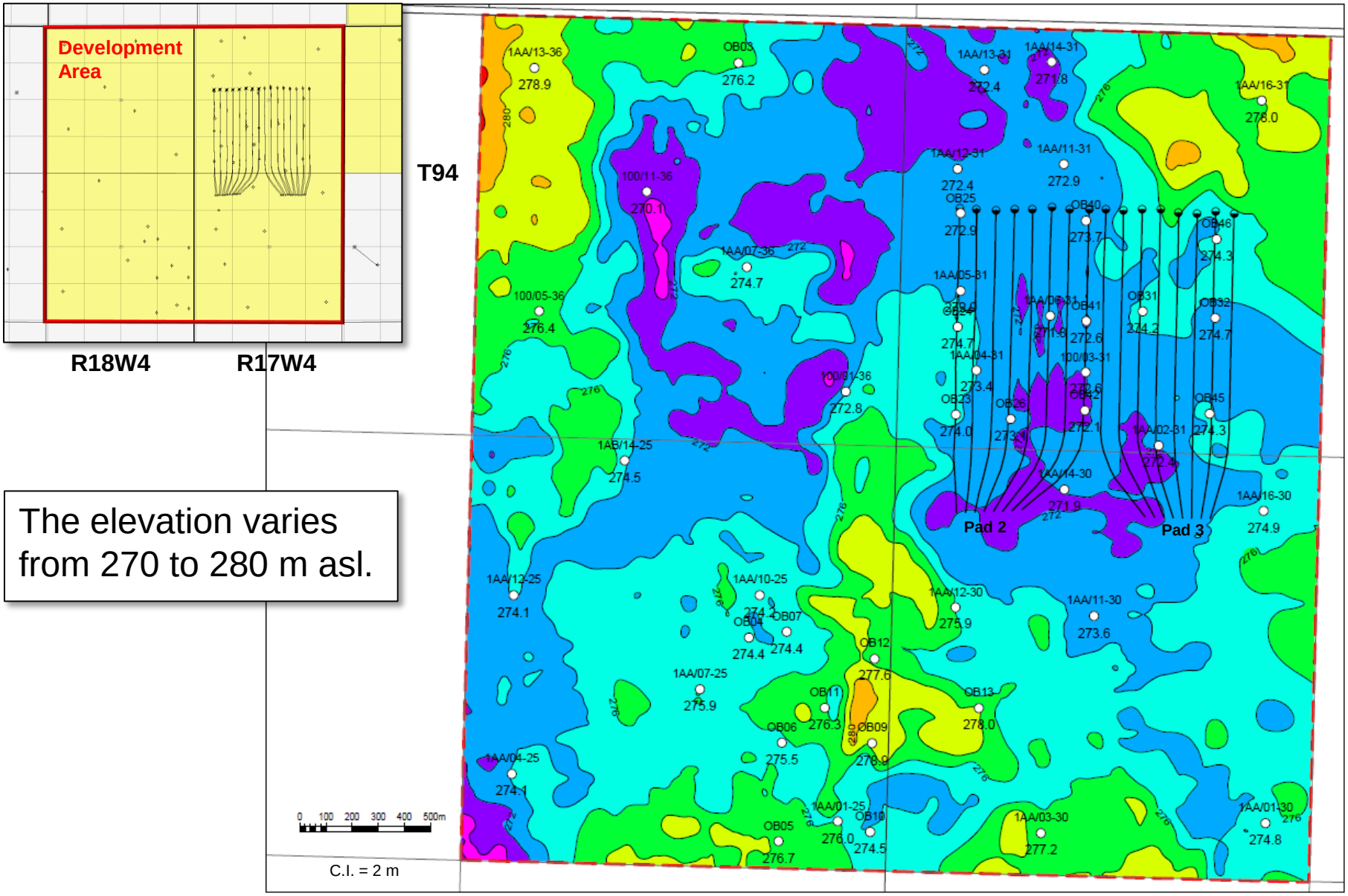
	Percent Effective Producer (GR < 60) (%)	Percent Effective Injector (GR < 60) (%)	Horizontal Well Length (m)	Interwell spacing (m)
Pad 2	99	100	800	70
Pad 3	100	100	800	70

Top of Bitumen Pay Structure Map



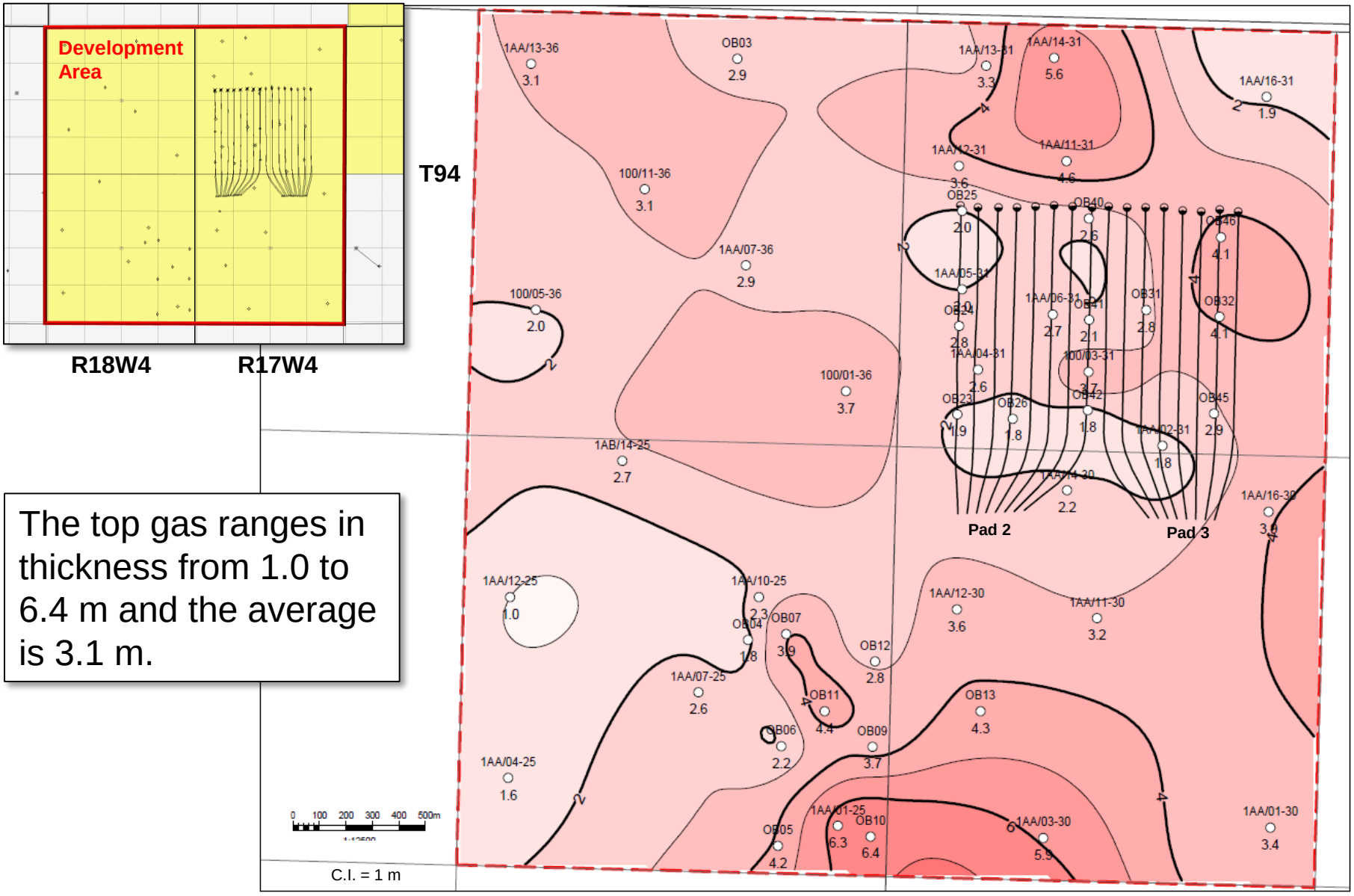
The elevation varies from 290 to 297 m asl.

Base of Bitumen Pay Structure Map



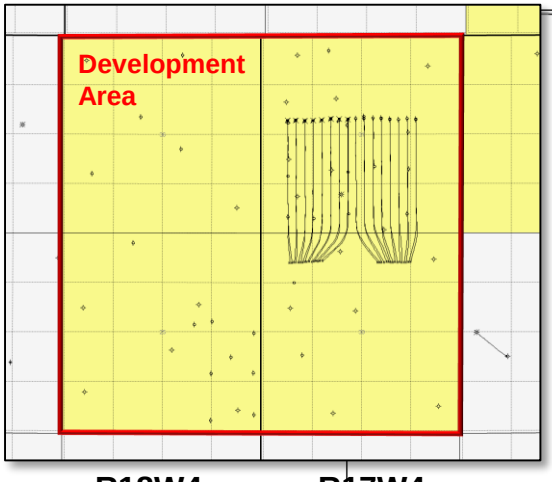
The elevation varies from 270 to 280 m asl.

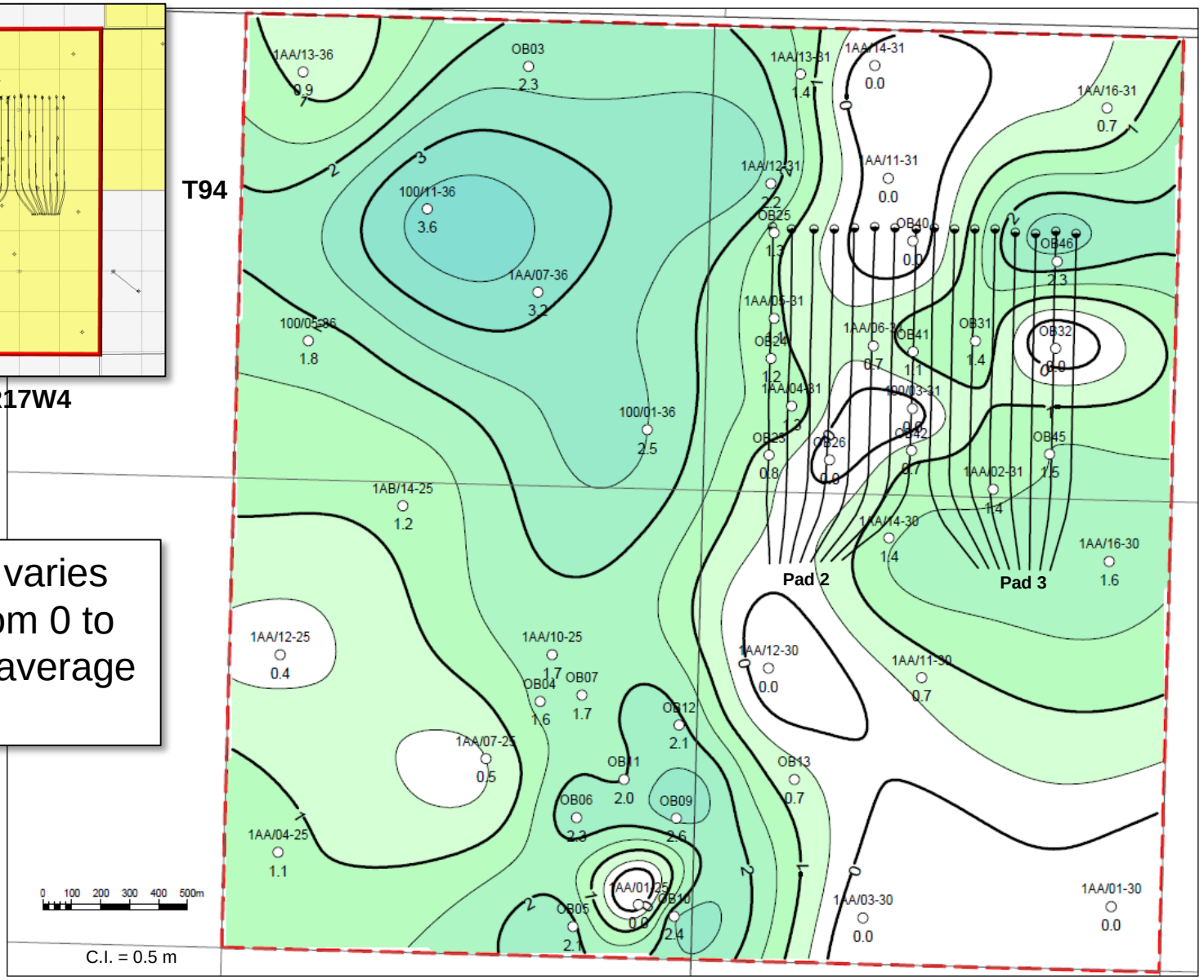
Wabiskaw C Top Gas Isopach Map



The top gas ranges in thickness from 1.0 to 6.4 m and the average is 3.1 m.

Wabiskaw D Lean Zone Isopach Map





The lean zone varies in thickness from 0 to 3.6 m and the average is 1.3 m.

OBIP for Pads 2 & 3 and Development Area

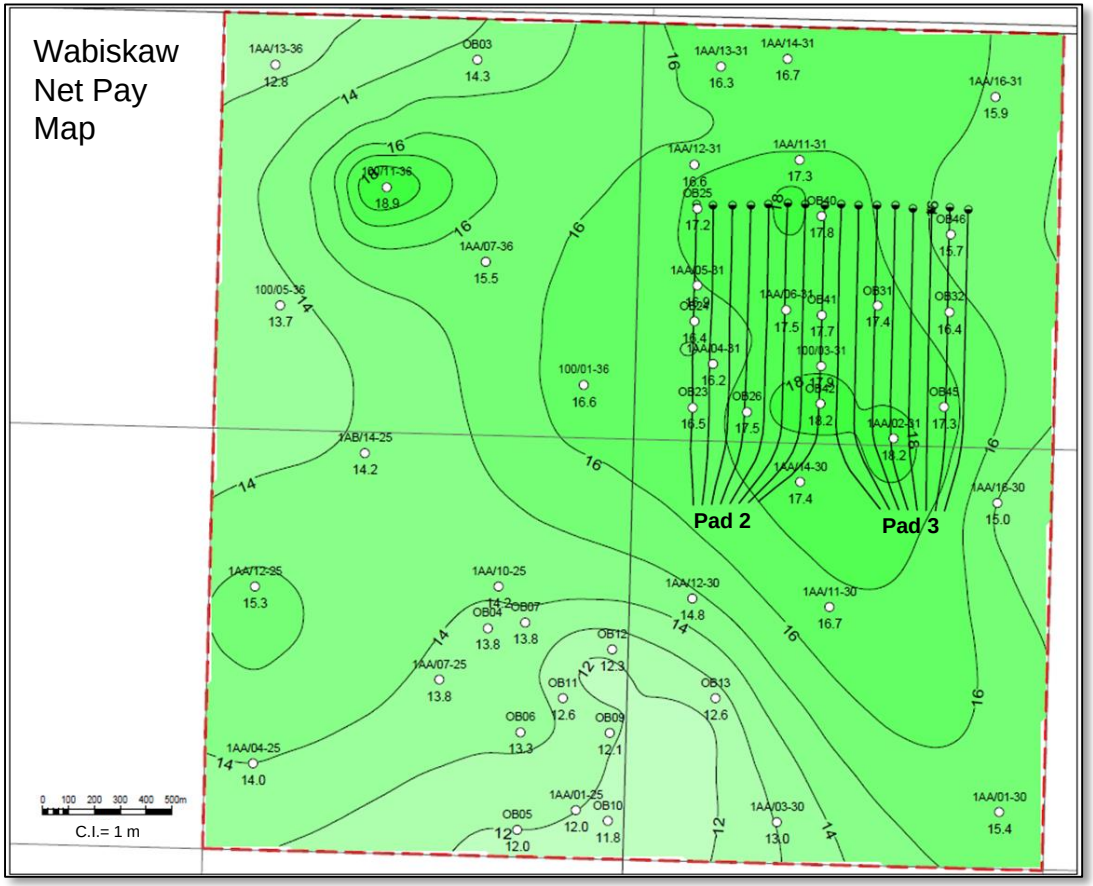
	Number of SAGD well pairs	Well Length (m)	Well Spacing (m)	Drainage Area, 50 m boundary (10^3 m^2)	Average Net Pay above Producer (m)	Total OBIP (10^6 m^3)	Cumulative Bitumen Produced* (m^3)	Current Recovery Factor (%)	Estimated Recovery Factor (%)
Pad 2	8	800	70	504	16.2	1.87	15,117	0.81	50-60
Pad 3	8	800	70	504	15.4	1.86	0.00	0	50-60

*Production to January 2017

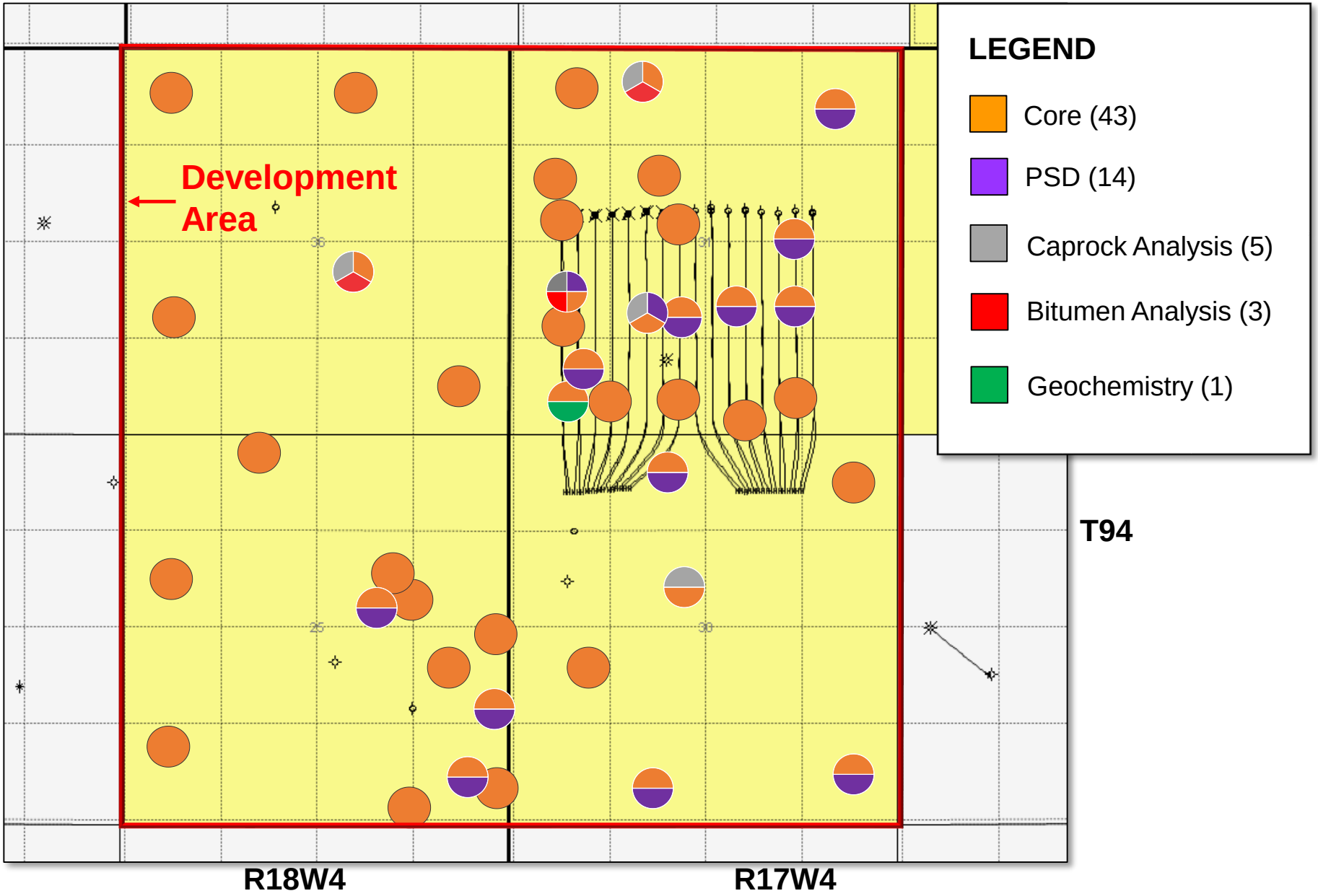
	Area (10^3 m^2)	Average Net Pay (m)	Total OBIP (10^6 m^3)
Development Area	10,511	15.2	37.2

OBIP = Area x Net Pay x Porosity x Bitumen Saturation / FVF

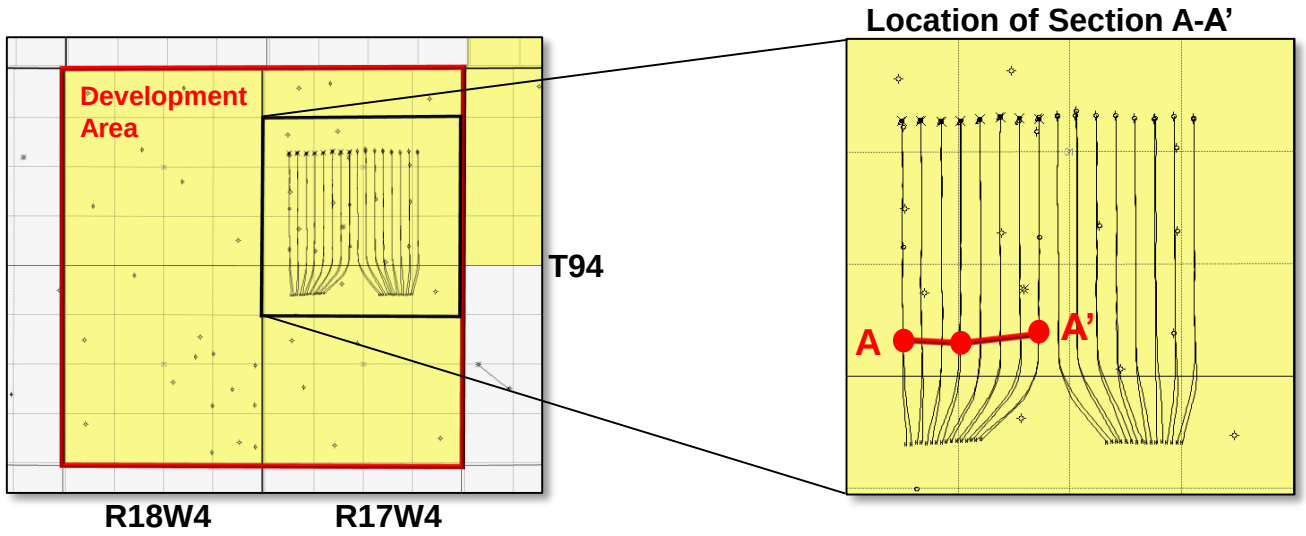
FVF = Formation Volume Factor = 1.005

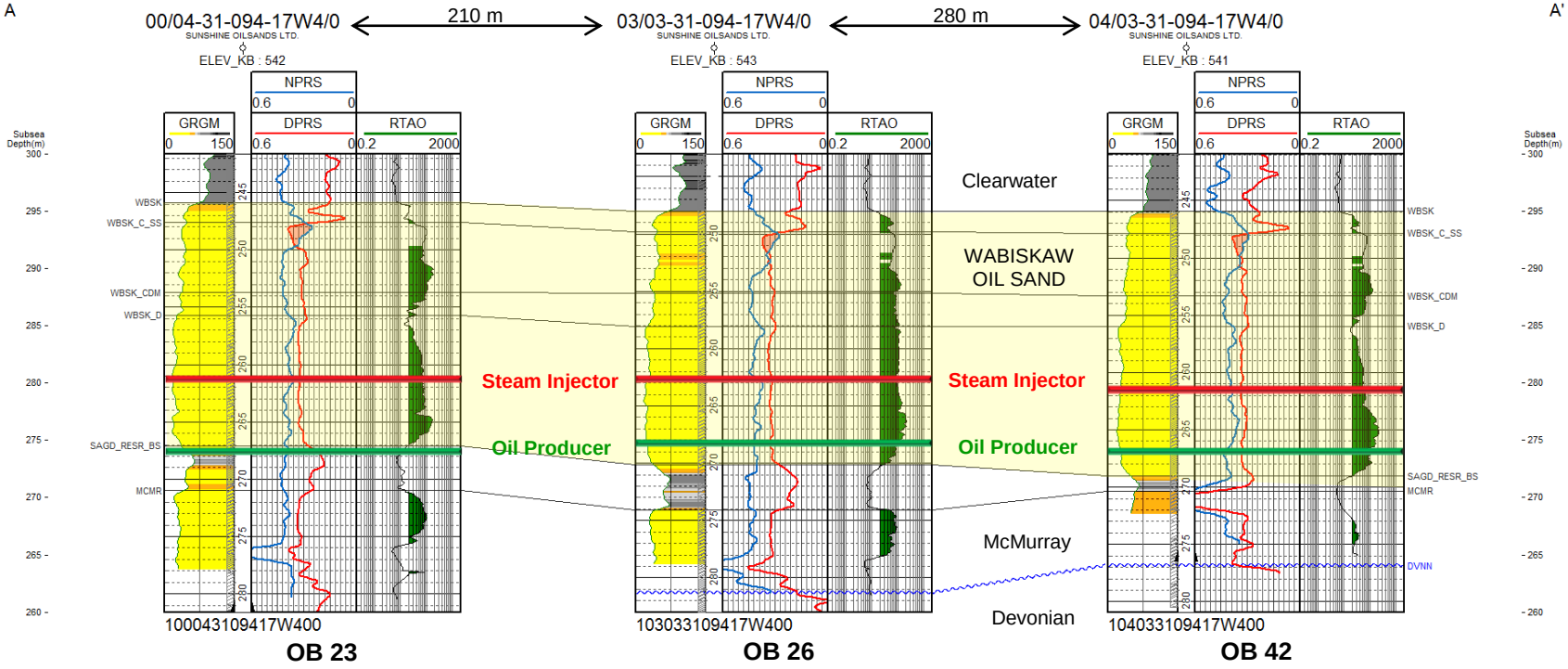


Wells with Core and Special Core Analysis



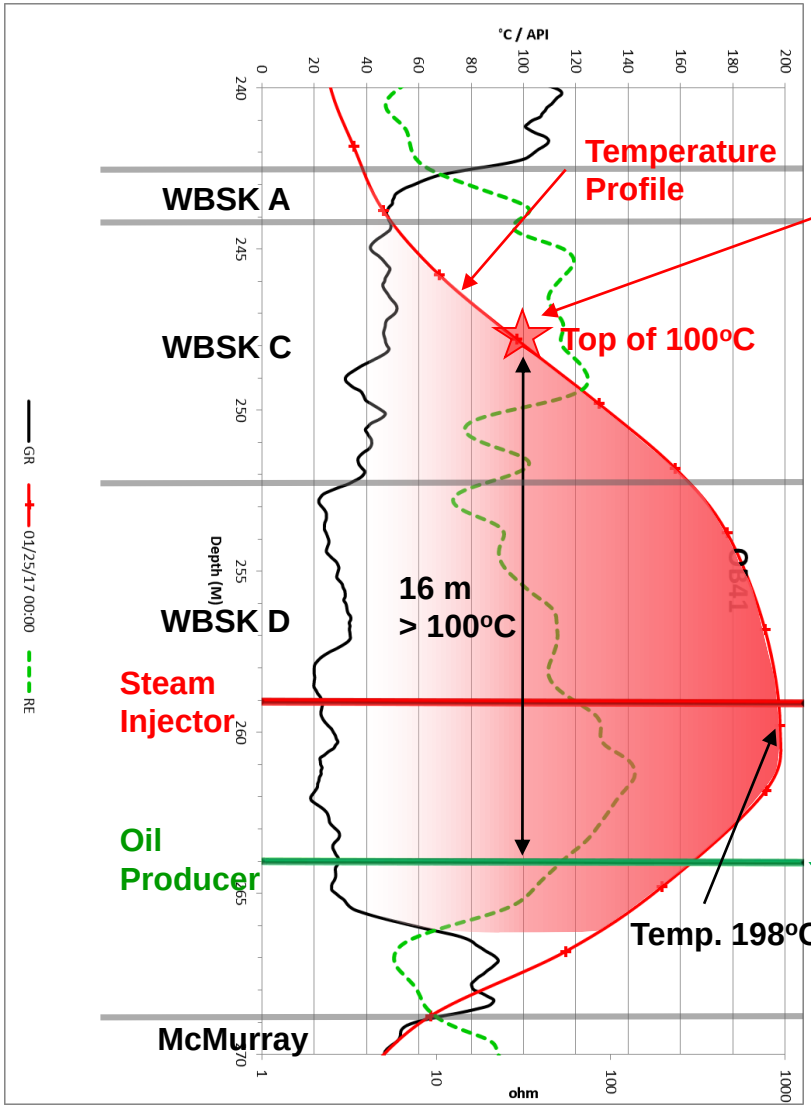
Structural Cross-Section A-A’



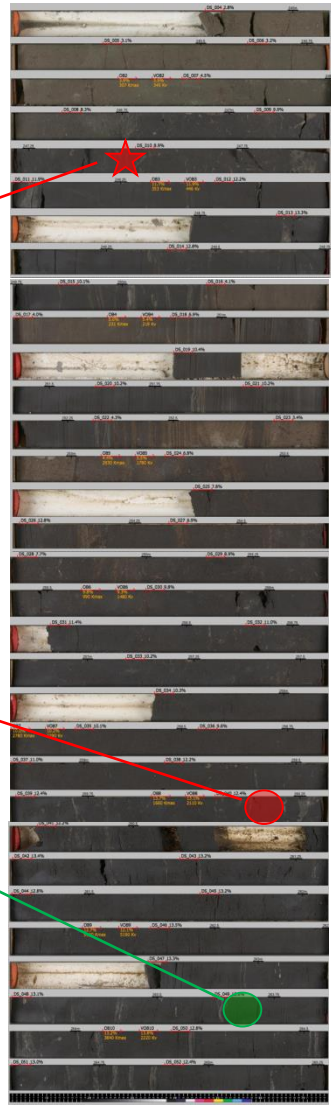


Temperature Response on Type Well (102/06-31-094-17W4)

OB41 Temperature Log



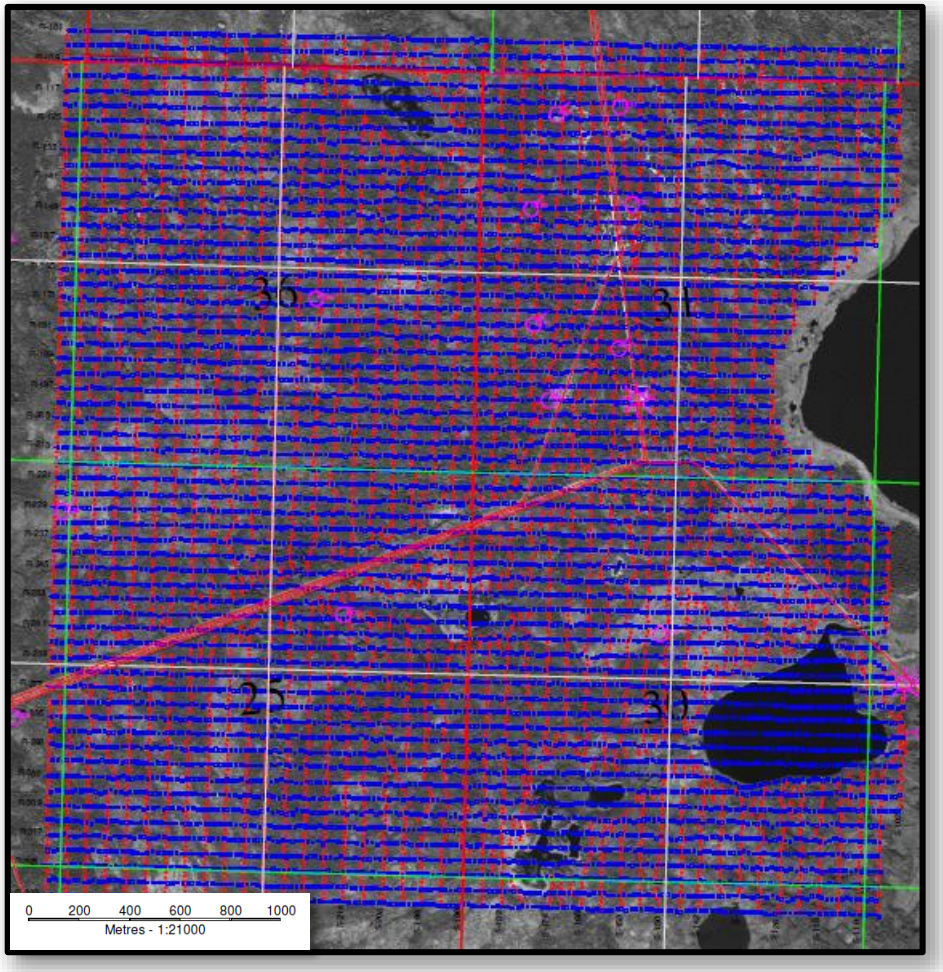
Core



- OB41 is 4.2 m east of Pair 12.
- Oil sand with mm to cm silt/shale laminae (act as a baffle and not a barrier).
- Original reservoir temperature is 9 °C
- Temperature near the injector level is about 200 °C.
- Above the producer, the temperature is greater than 100 °C for 16 m.

3D Seismic Survey and Acquisition Parameters

Survey Layout



Acquisition Parameters

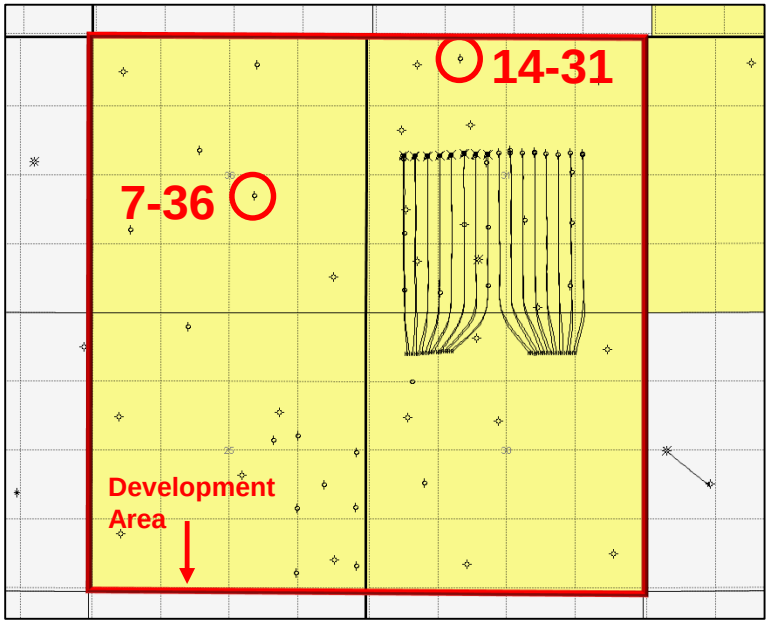
Area 10.7 (km^2)			
Source Information		**Receiver Information**	
Source interval (m)	20	Receiver interval (m)	20
Source line interval (m)	80	Receiver line interval (m)	60
Line orientation	N-S	Line orientation	W-E
Total km of line	167.1	Total km of line	194.9
Number of source points	7078	Number of receiver points	9681
Source depth (m)	6		
Source type	Dynamite		

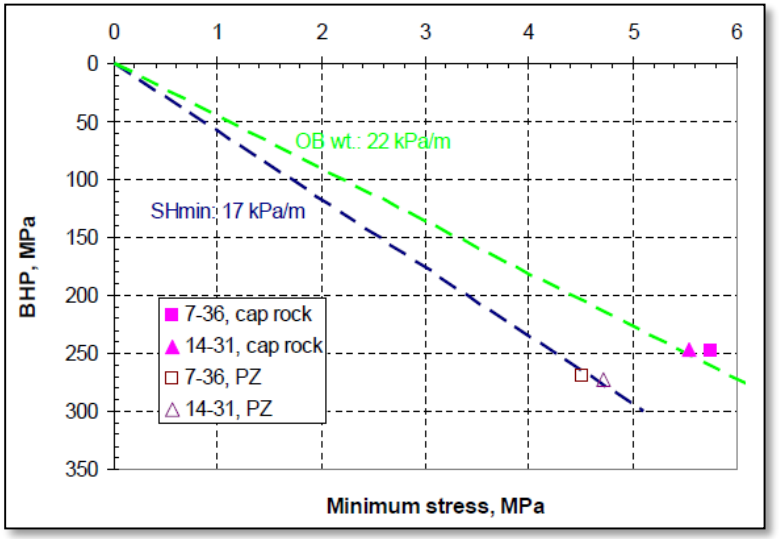
4-D Seismic

- As measured on the observation wells, the width of the steam chamber is narrow and less than 10 m from the SAGD well pair. Therefore, Sunshine did not plan a 4D seismic acquisition survey in 2017 because it is difficult to image a small steam chamber in the seismic data.
- While there are no plans in 2017 to conduct a 4D seismic survey, Sunshine will consider a 4D seismic survey when it is appropriate and provides an advantage for resource recovery.

Cap Rock Integrity

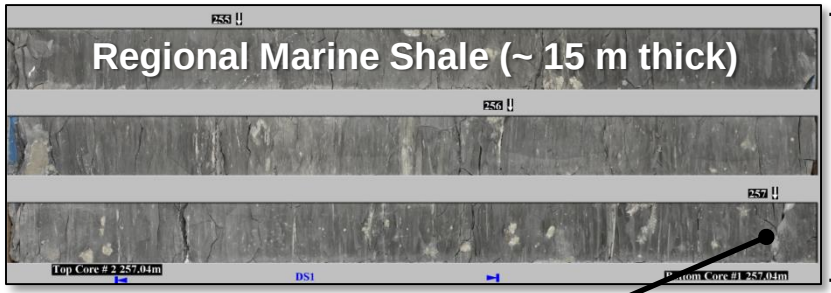
- Mini-frac tests were performed at:
  - 1AA/14-31-094-17W4/0
  - 1AA/07-36-094-18W4/0
- Caprock average minimum stress gradient = ***22*** kPa/m (Wabiskaw Shale Member).
- Oil sand average minimum stress gradient = ***17*** kPa/m (Wabiskaw Sand).
- Sunshine applied for a maximum operating pressure (MOP) of ***4400*** kPag in the Wabiskaw Shale Member based on a 80% safety factor.
- The maximum operating pressure (MOP) of ***4400*** kPag was granted on March 10, 2016.





Caprock and Oil Sand from 14-31-94-17W4 Location

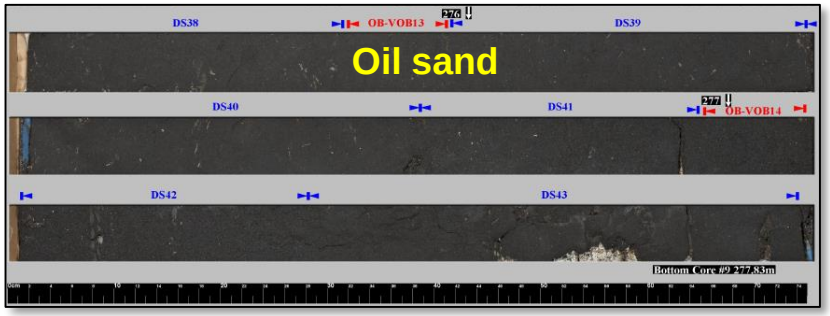
Caprock - Wabiskaw Shale Member



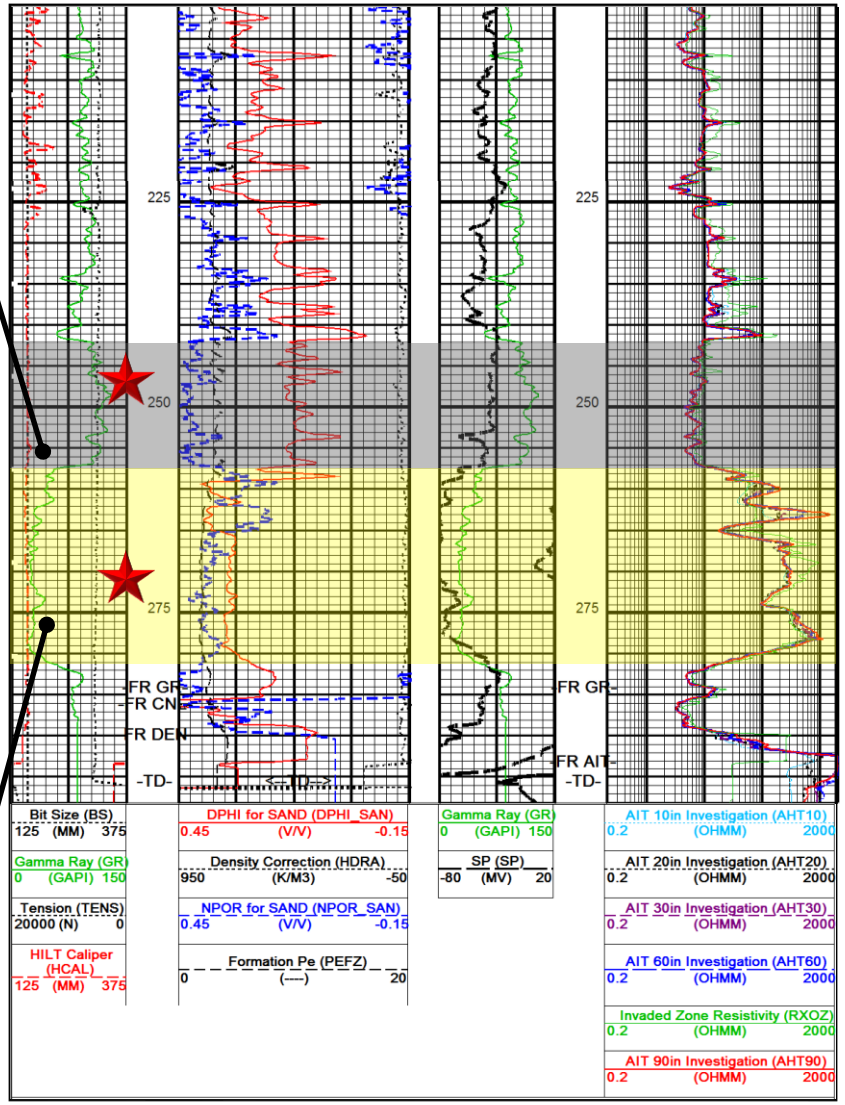
Caprock mini-frac

Oil sand mini-frac

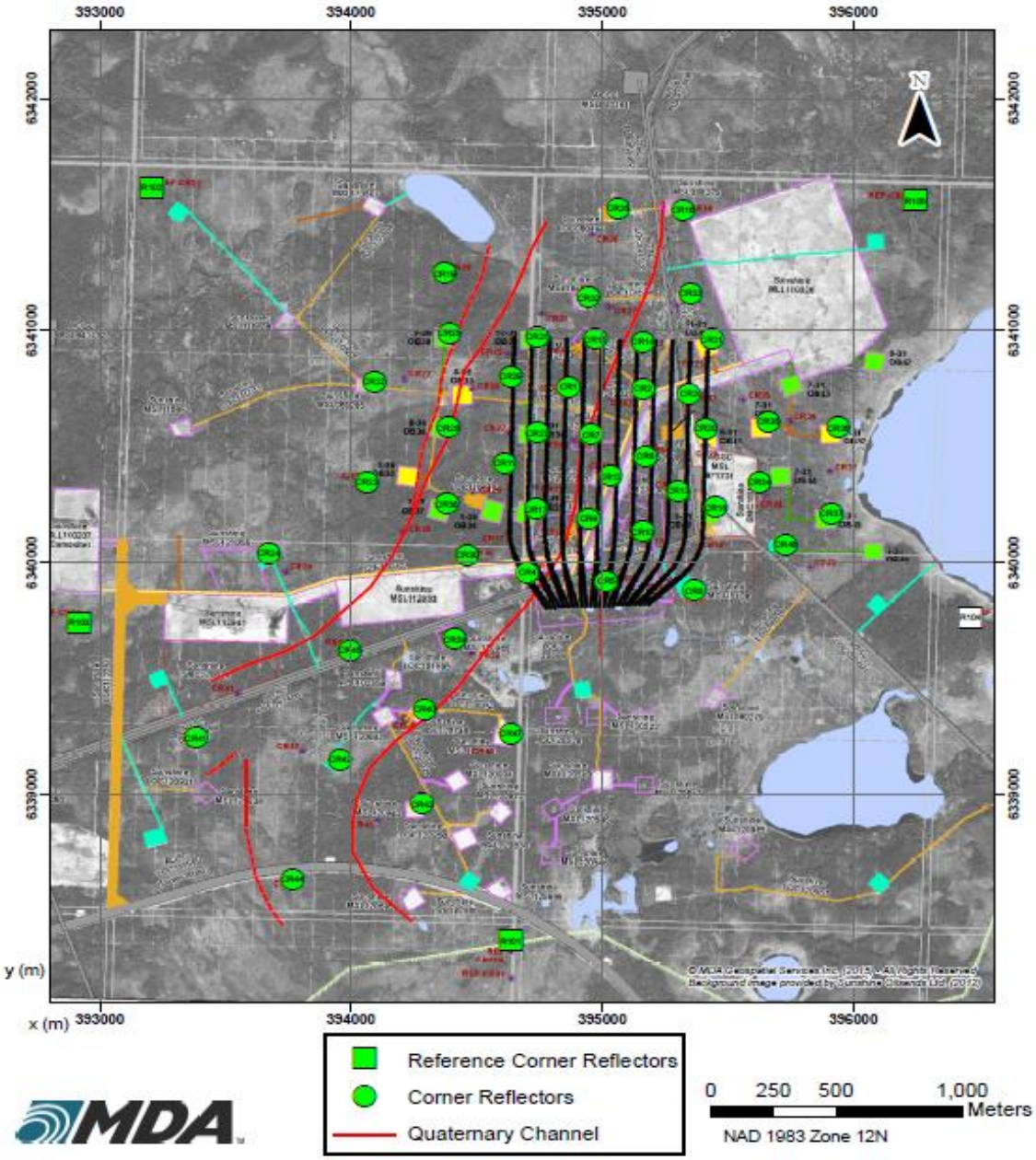
Oil sand - Wabiskaw Sand



1AA/14-31-094-17W4/0 Well Log



Surface Heave – Corner Reflector Locations

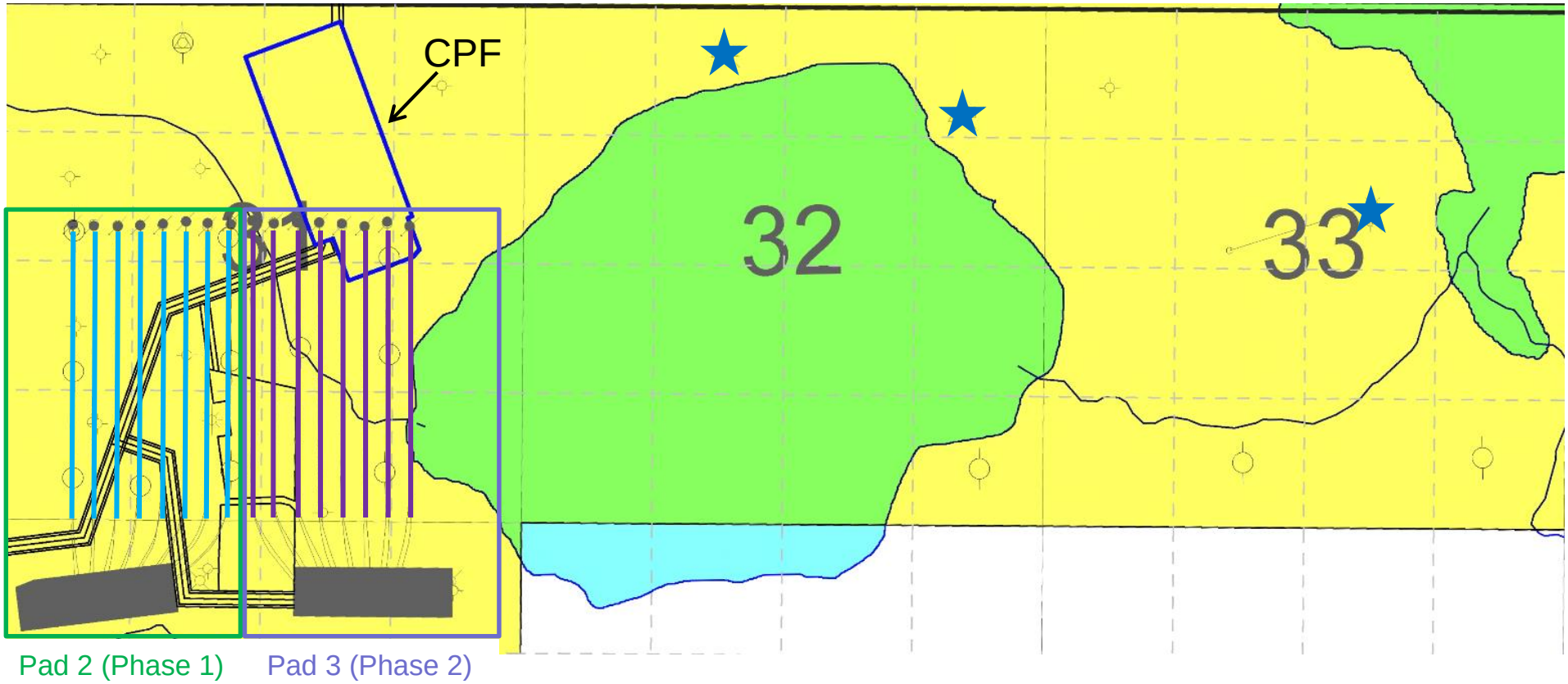


Surface Heave Monitoring

- 52 corner reflector locations
- Baseline information gathered prior to steaming operations
- Follow up surveys expected to be completed this year

Drilling and Completions

West Ells Pad & Well Locations



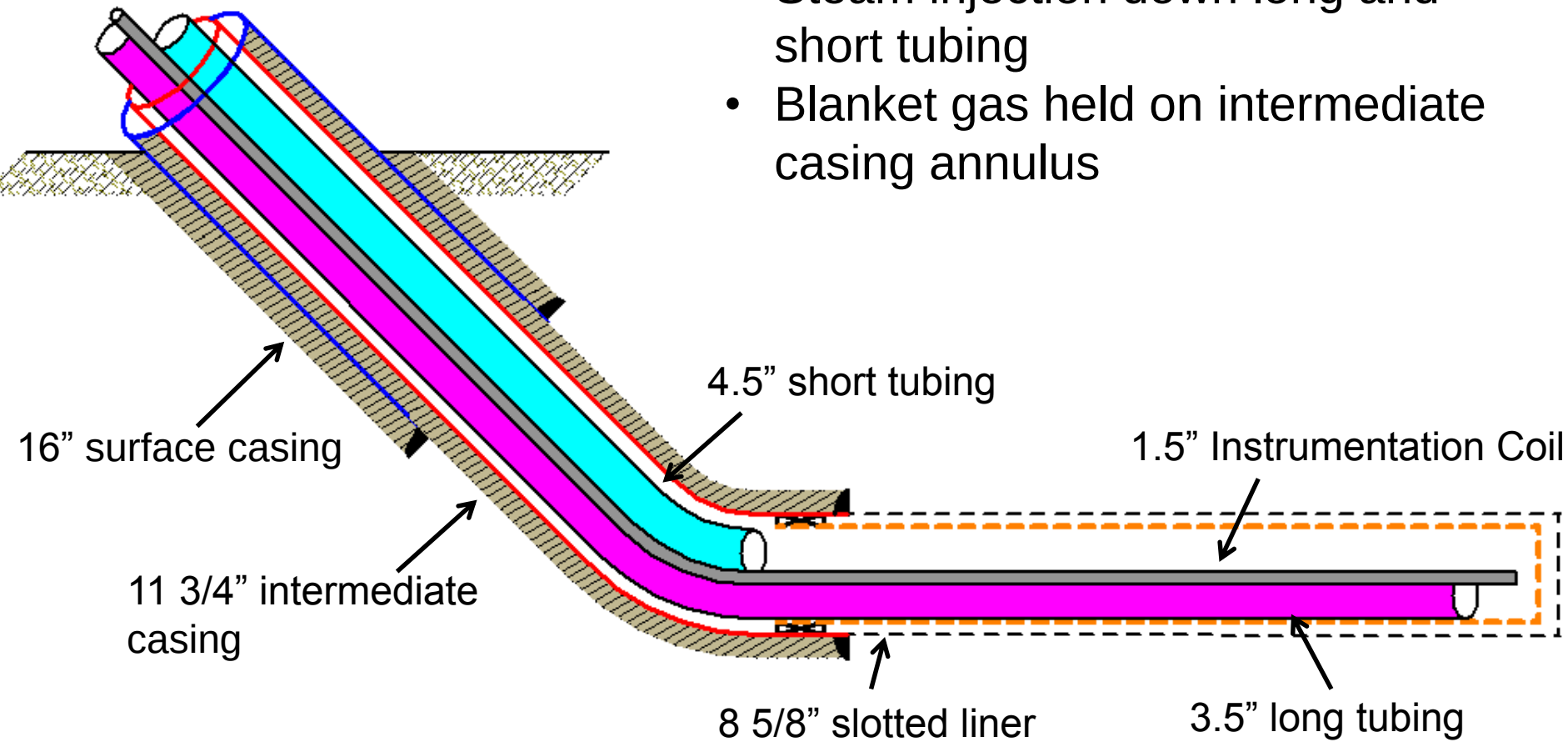
SAGD Well Pair – Drilled & Completed

SAGD Well Pair – Drilled, not Completed

Source Water Well – Drilled & Completed

Injector Well Completions

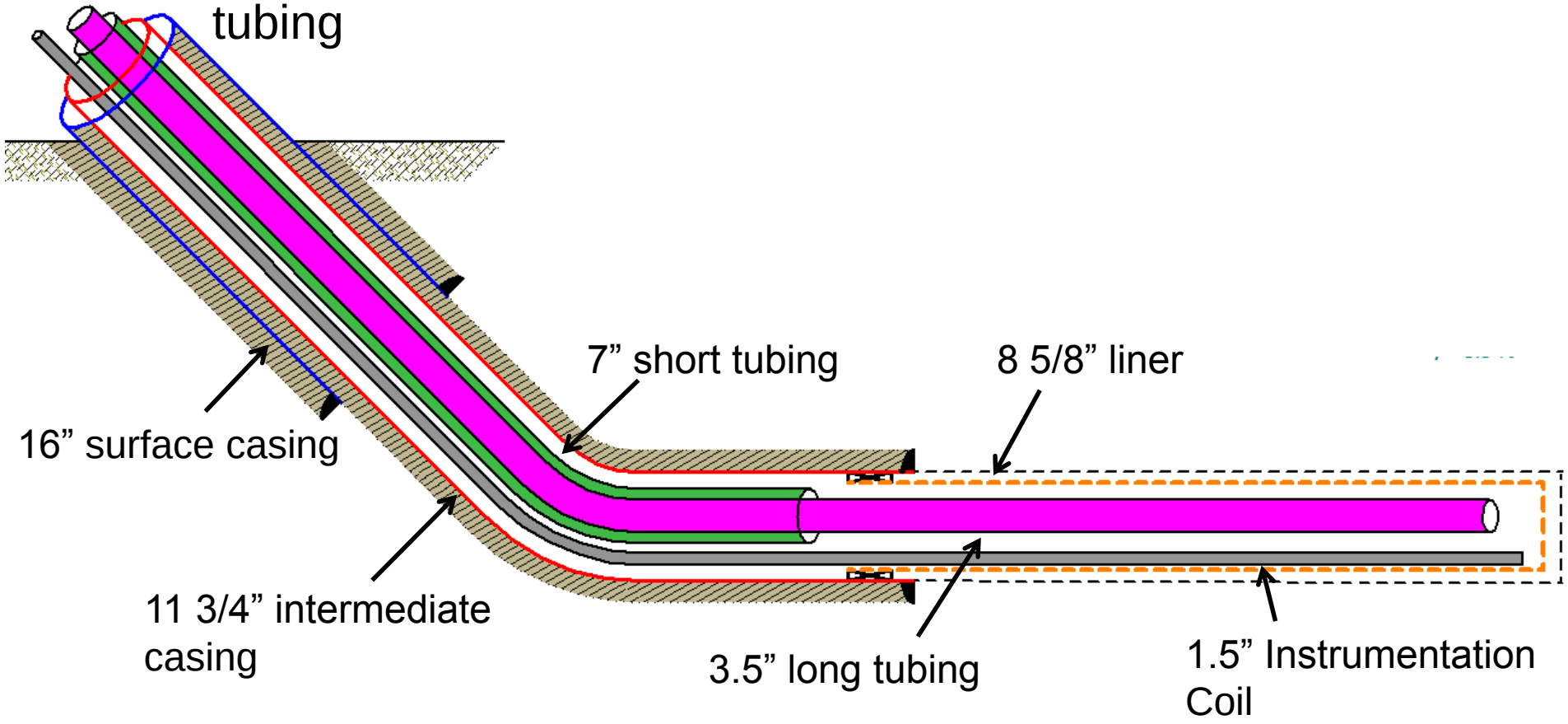
- Steam injection down long and short tubing
- Blanket gas held on intermediate casing annulus



Producer Well Completions – Circulation Phase

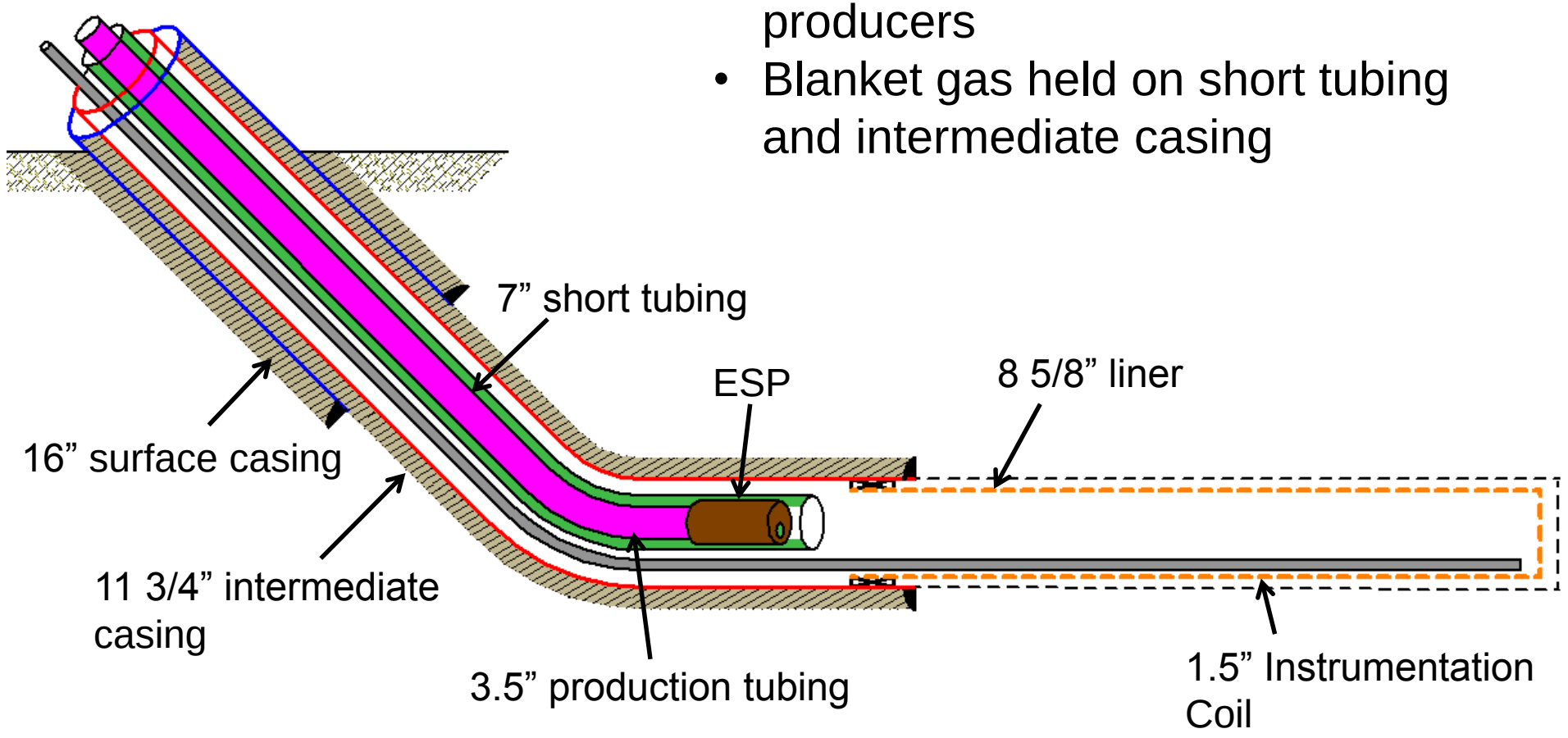
- Steam injection through long tubing
- Circulation returns via intermediate casing
- Blanket gas contained in short tubing

- Slotted liner in three wells
- Facsrite screen in five wells



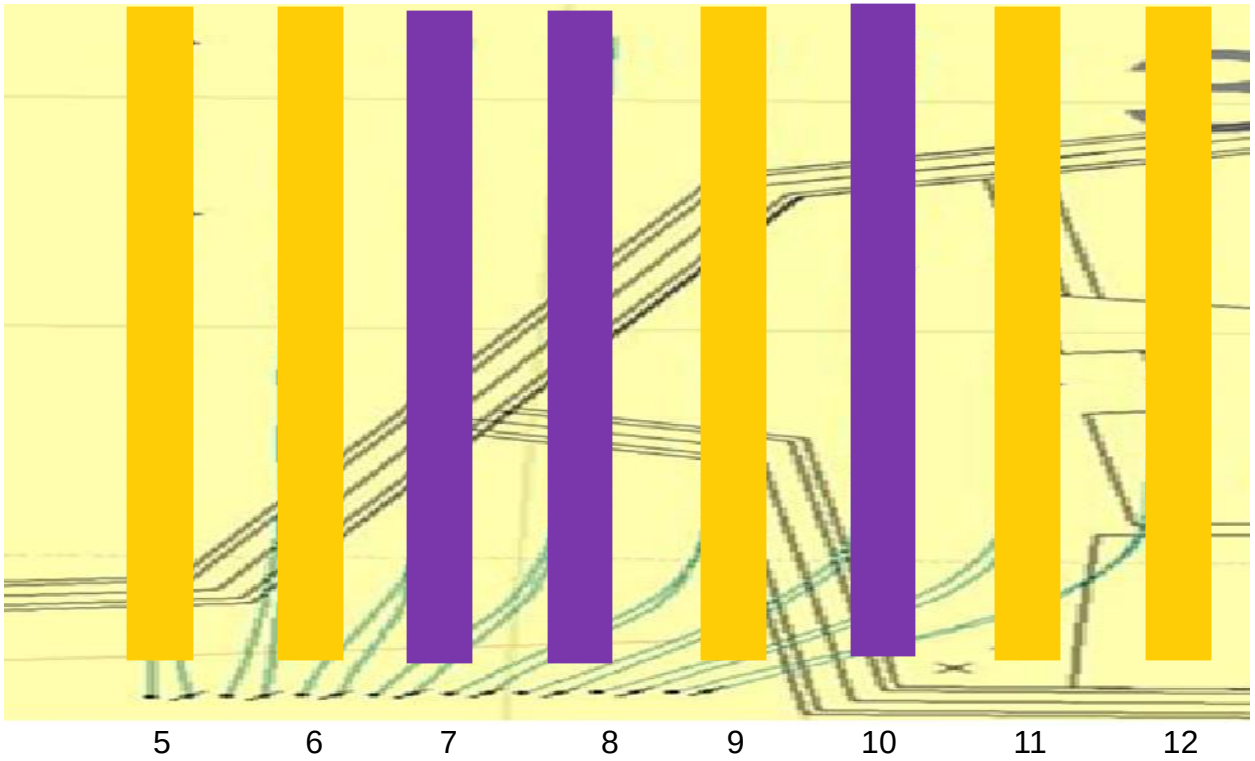
Producer Well Completions – SAGD Phase

- Electric Submersible Pumps (ESPs) installed in all SAGD producers
- Blanket gas held on short tubing and intermediate casing



Producer Well Completions – Liner Type

- Slotted Liner – 0.012” x 0.020” RT
- Facsrite – 250 Micron



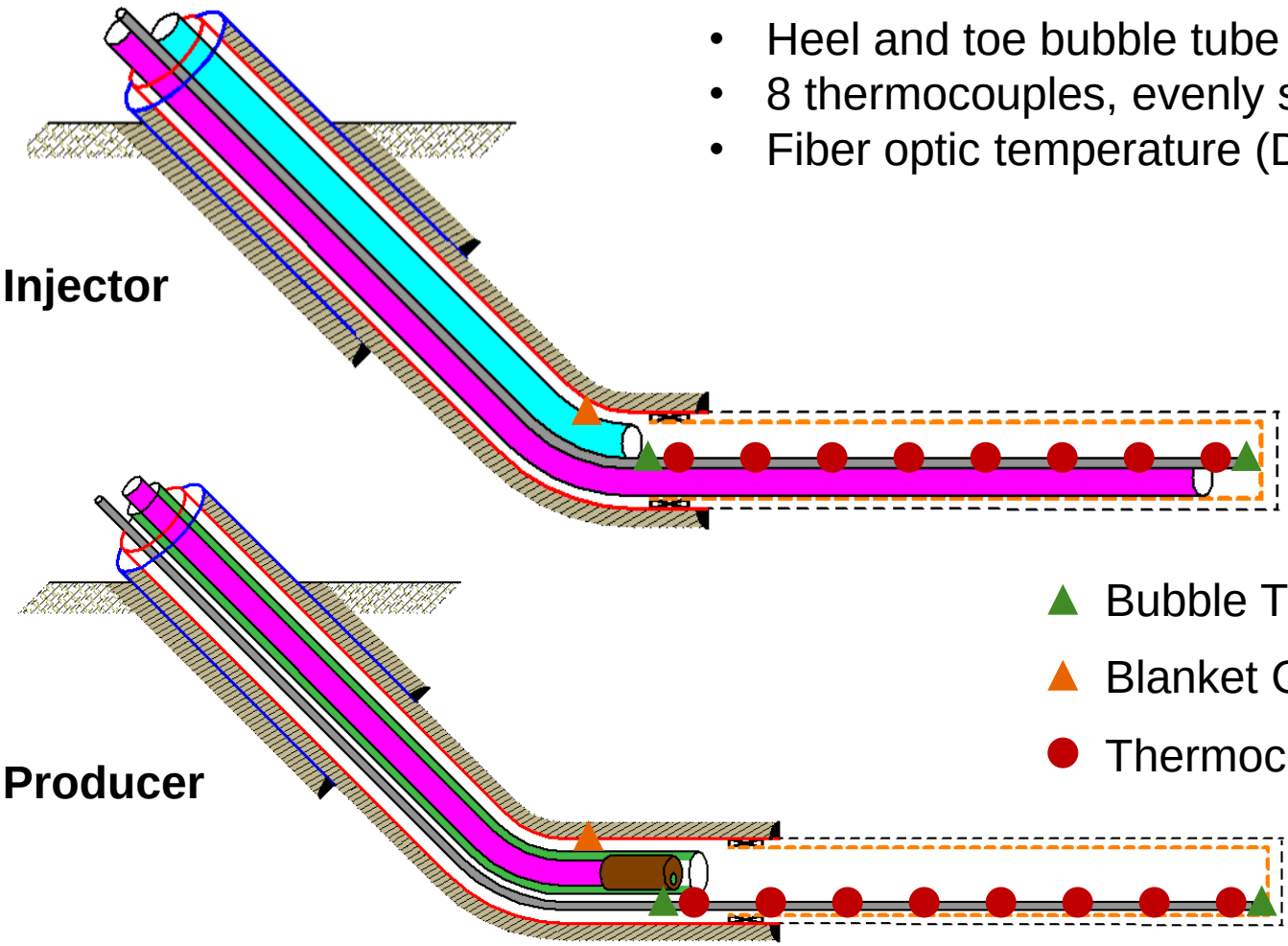
Artificial Lift

- All SAGD production wells have been designed to use Electric Submersible Pumping systems (ESP)
- Designed production capacity of the ESPs is 50-350m^3/d for initial stage of operation
- Current operational capacity varies between 100-350m^3/d
- Designed operational temperature of 230 degrees C
- Current operational temperature between 180-210 degrees C

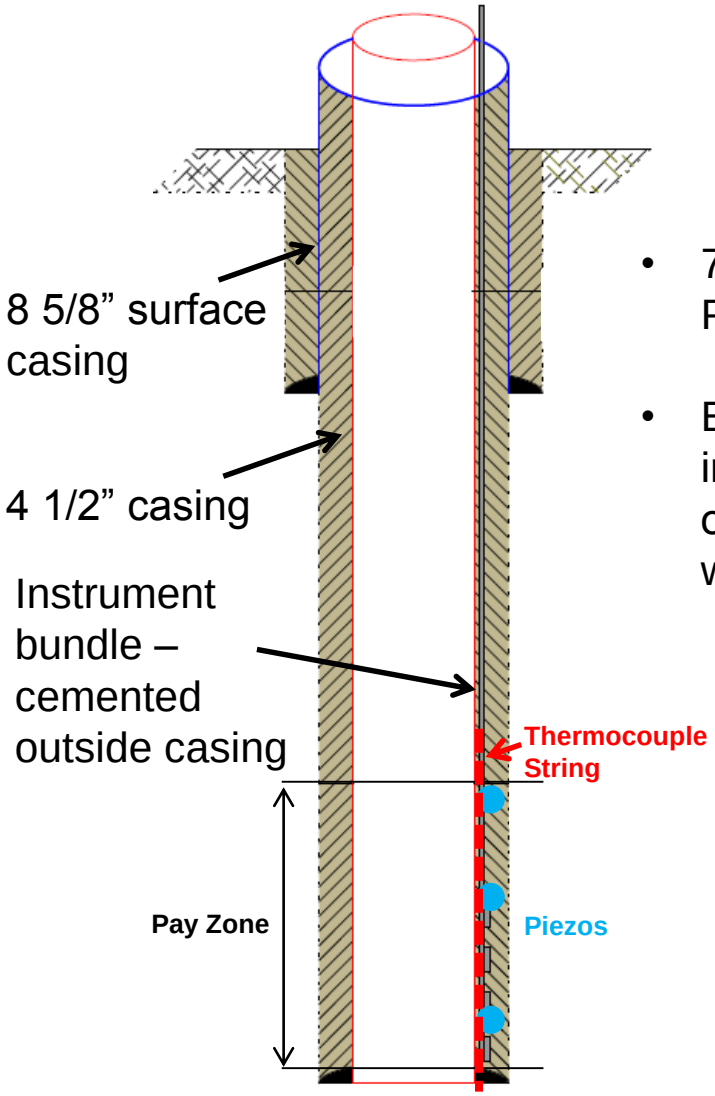
Well Instrumentation

1.5” instrumentation coils include (all wells):

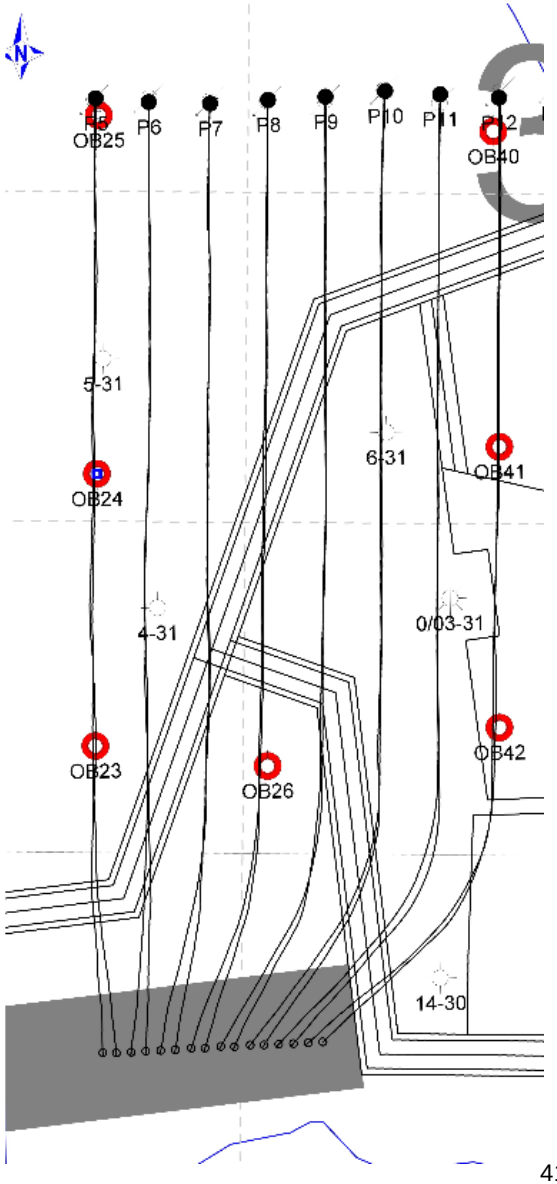
- Heel and toe bubble tube – pressure
- 8 thermocouples, evenly spaced
- Fiber optic temperature (DTS or 40-point FBG)



Observation Wells



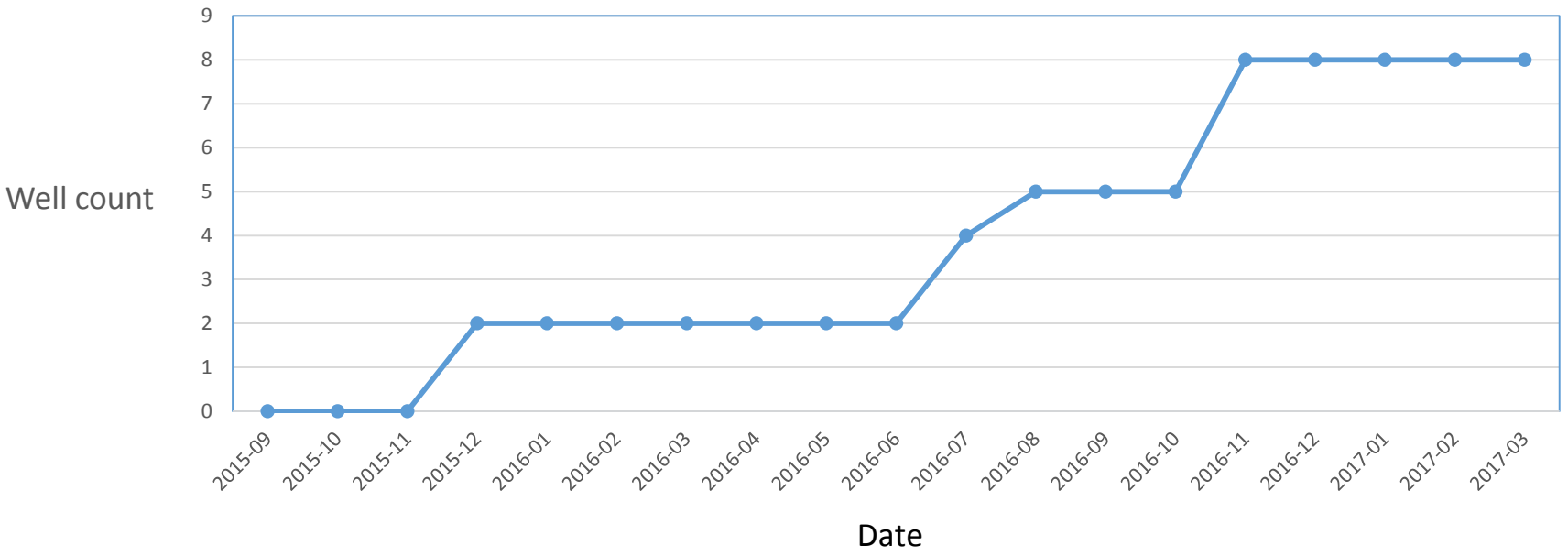
- 7 vertical OB wells drilled on Pad 2 (Phase 1) across zone
- Each well equipped with instrument bundle cemented outside 4 ½” casing, equipped with:
  - 20 thermocouples spaced from above the cap rock to below base of pay
  - 3 piezometers in zones of interest: gas cap, mid-pay, and lower pay



Subsurface and Scheme Performance

Subsurface Performance

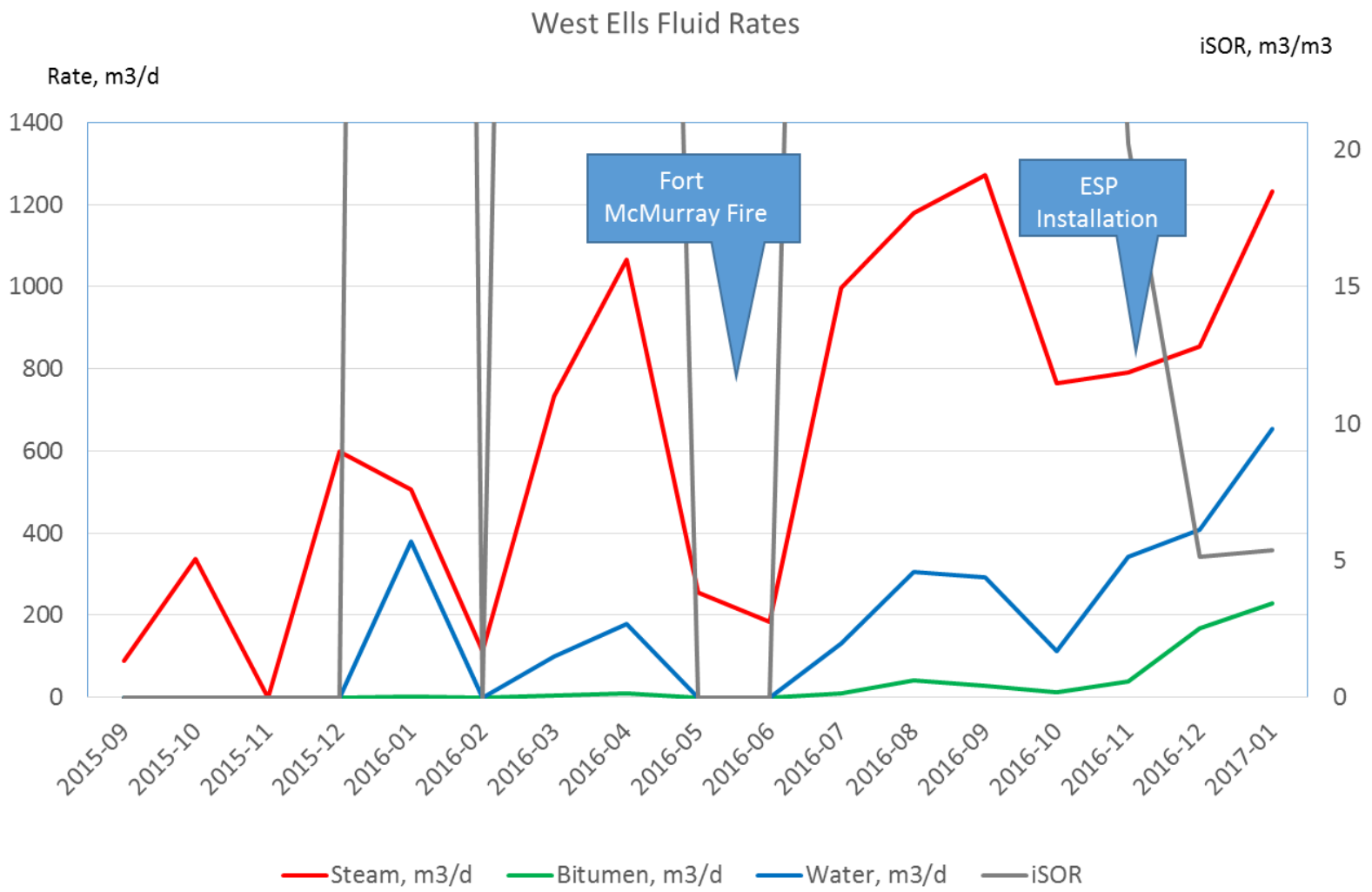
- All 8 well pairs are now in production mode
  - 2 pumps installed January 2016
  - 3 pumps installed July 2016
  - 3 pumps installed October-November 2016
- Currently Sunshine is ramping up towards target steam and fluid rates



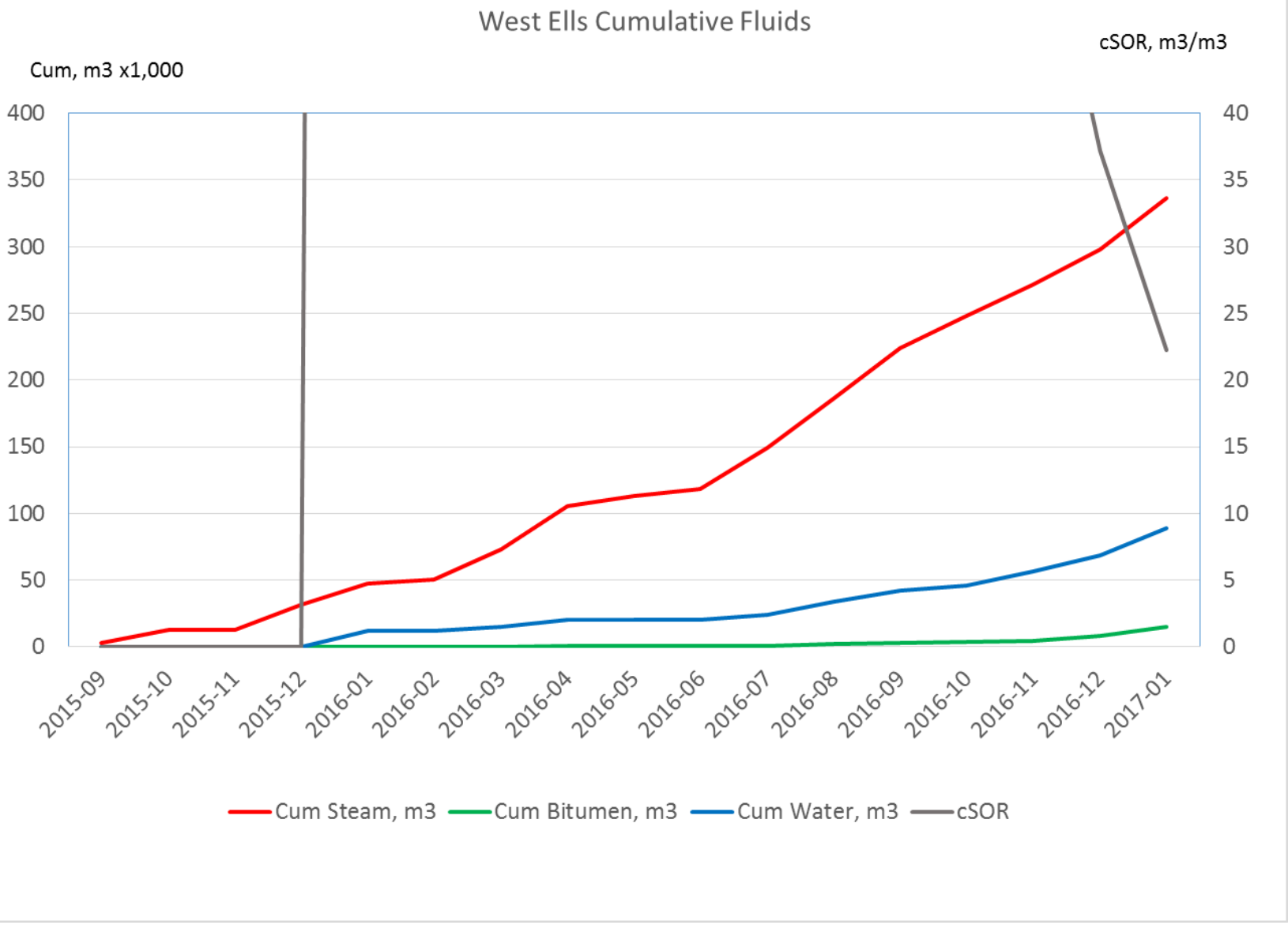
Injection and Production Pressure

- SAGD steam chamber still developing
- The injection pressure currently varies from 1000kPa to 3000kPa
- Sunshine's near term operating pressure goal is to maintain pressures below 3000kPa.
- Producer pressure currently registers between 1000kPa and 2000kPa
- Approved bottomhole injection pressure of 4400kPag has not been exceeded

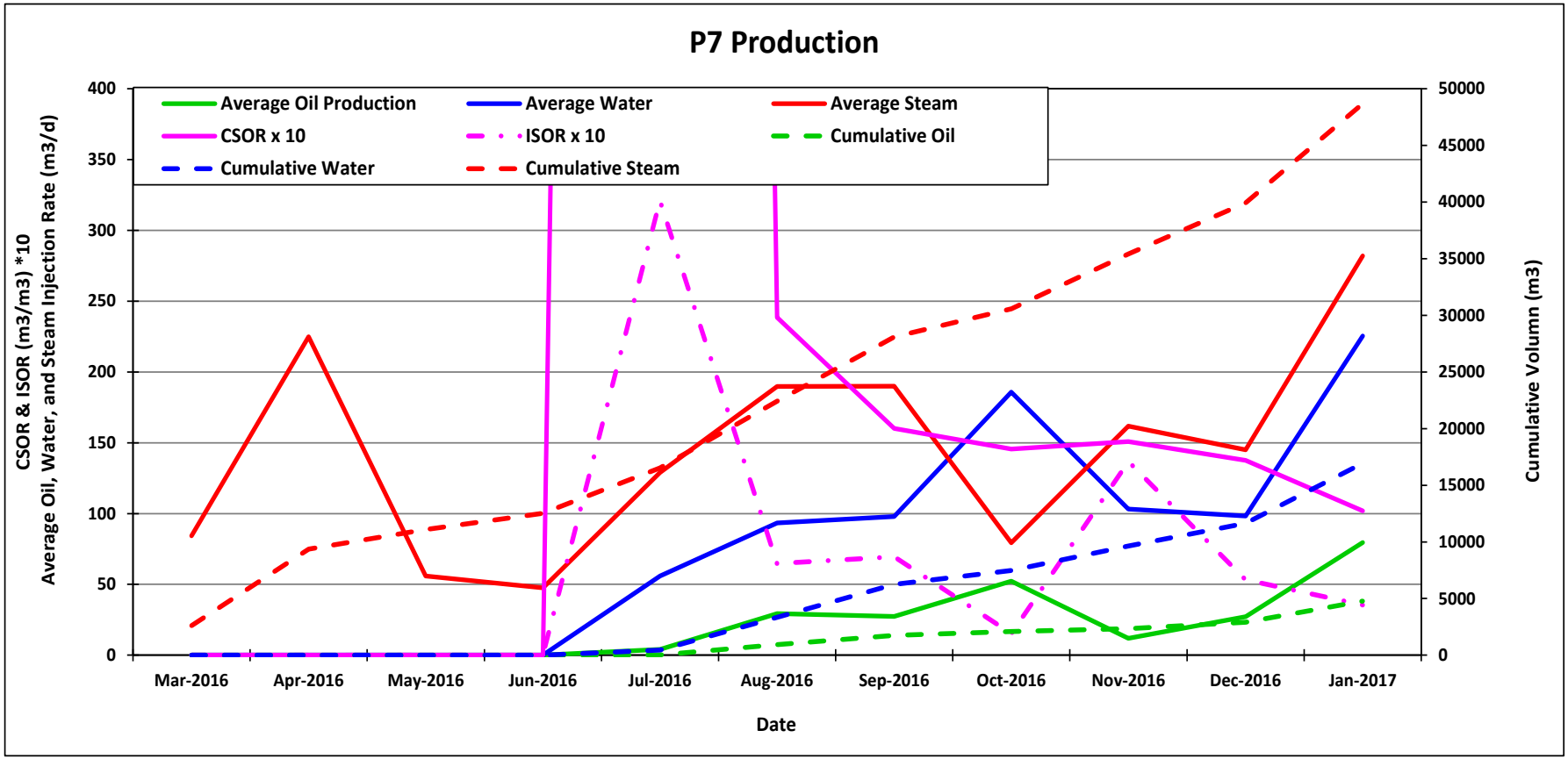
Fluid Rates


West Ells Fluid Rates
Rate, m3/d
iSOR, m3/m3
1400
1200
1000
800
600
400
200
0
20
15
10
5
0
Fort McMurray Fire
ESP Installation
2015-09
2015-10
2015-11
2015-12
2016-01
2016-02
2016-03
2016-04
2016-05
2016-06
2016-07
2016-08
2016-09
2016-10
2016-11
2016-12
2017-01
Steam, m3/d
Bitumen, m3/d
Water, m3/d
iSOR

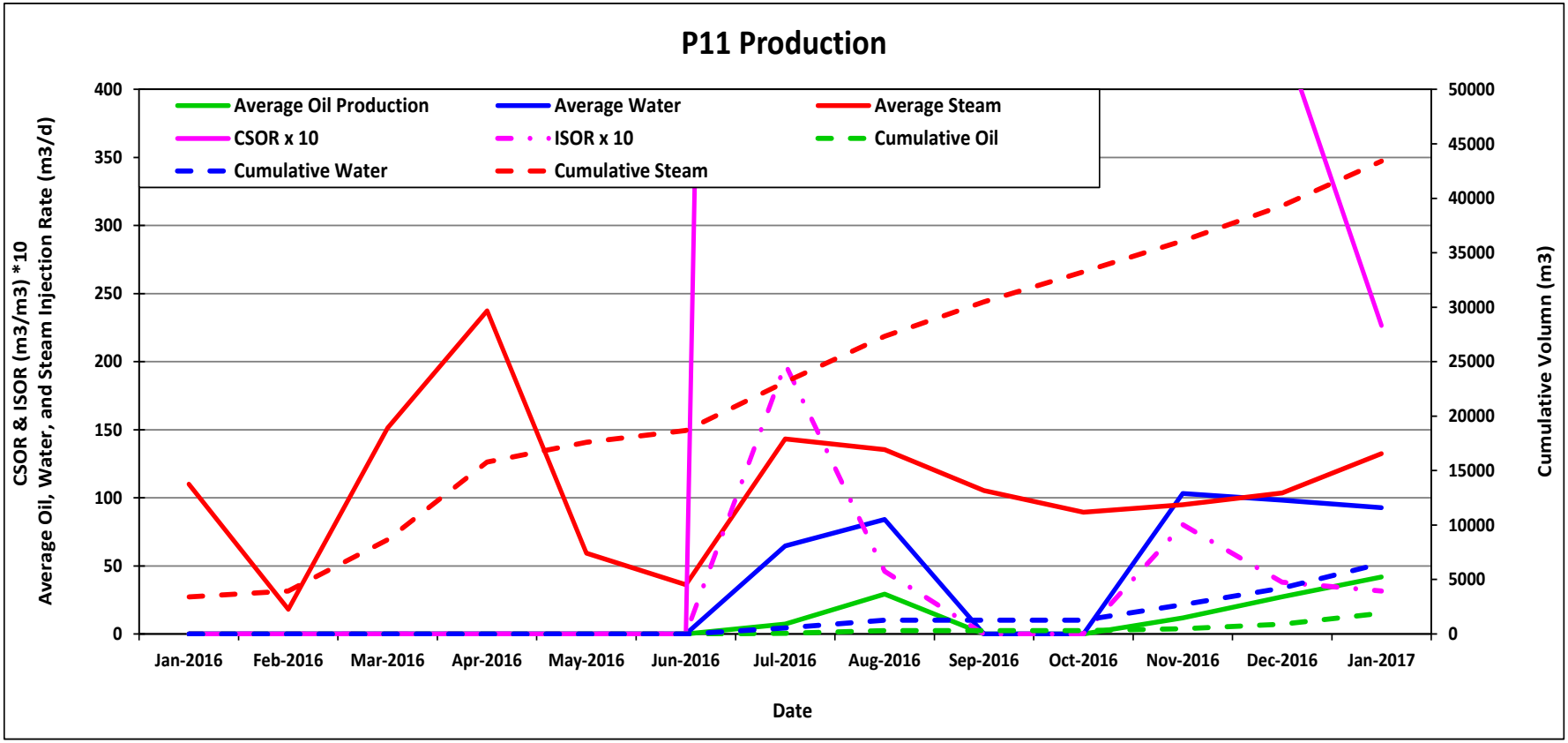
Cumulative Fluid Rate



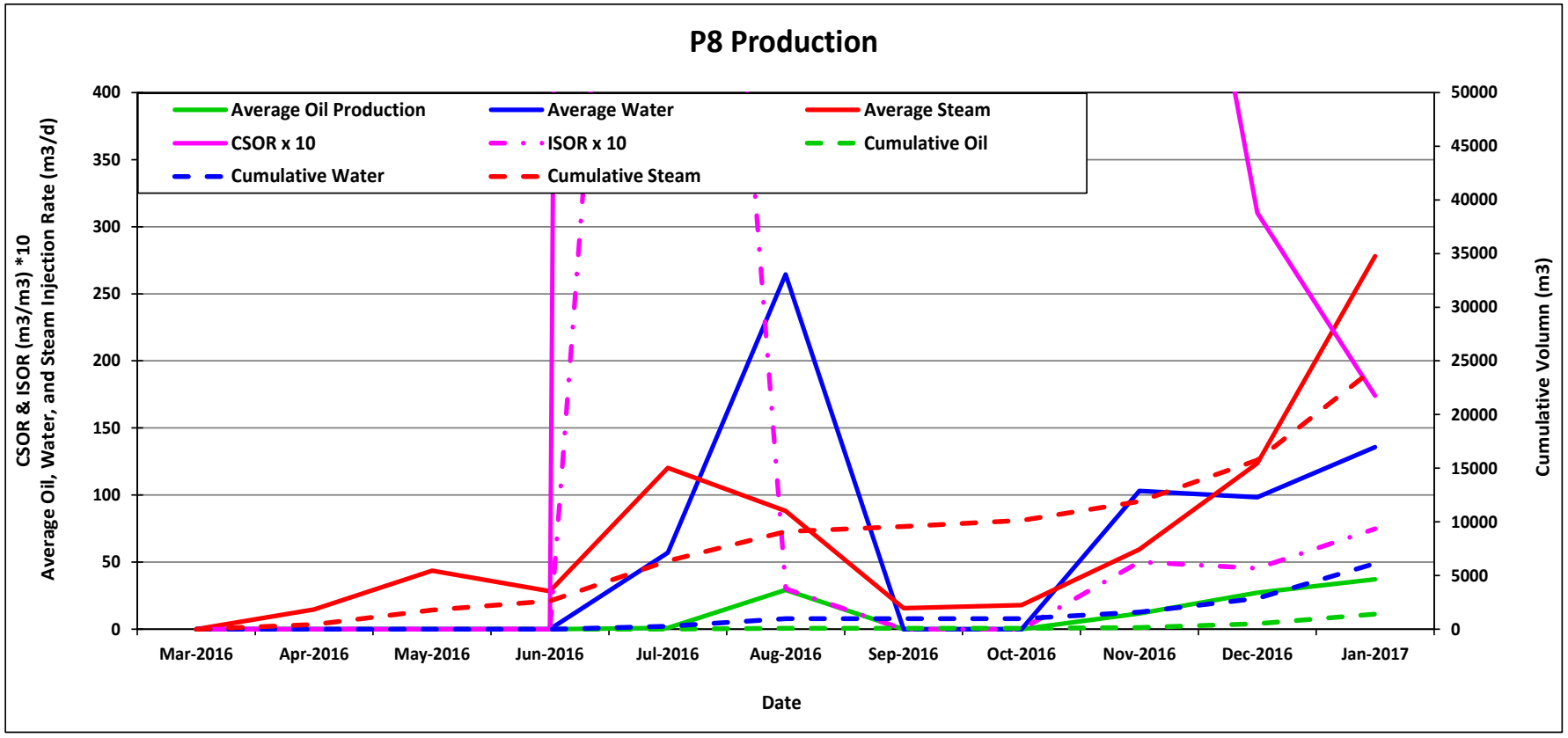
Recovery Patterns Pair 7



Recovery Patterns Pair 11



Recovery Patterns Pair 8



Steam Strategy - Startup

- Start up strategy:
  - Sunshine had planned to circulate both injector and producer wells simultaneously to pre-heat the wells
  - Results indicated that bottom hole pressure at the injectors and producers may not be high enough to circulate the returns to surface
- Sunshine modified the start up strategy:
  - Start circulation using the production well first without using the injection well
  - When the temperature at the injector reaches at least 100 degrees C between horizontal section of the wellbores, start injection to promote temperature conformance in both wells before starting the producer in SAGD mode

Steam Strategy – Continued

- The largest challenge faced was ensuring bottom hole pressures are high enough to circulate steam back to surface

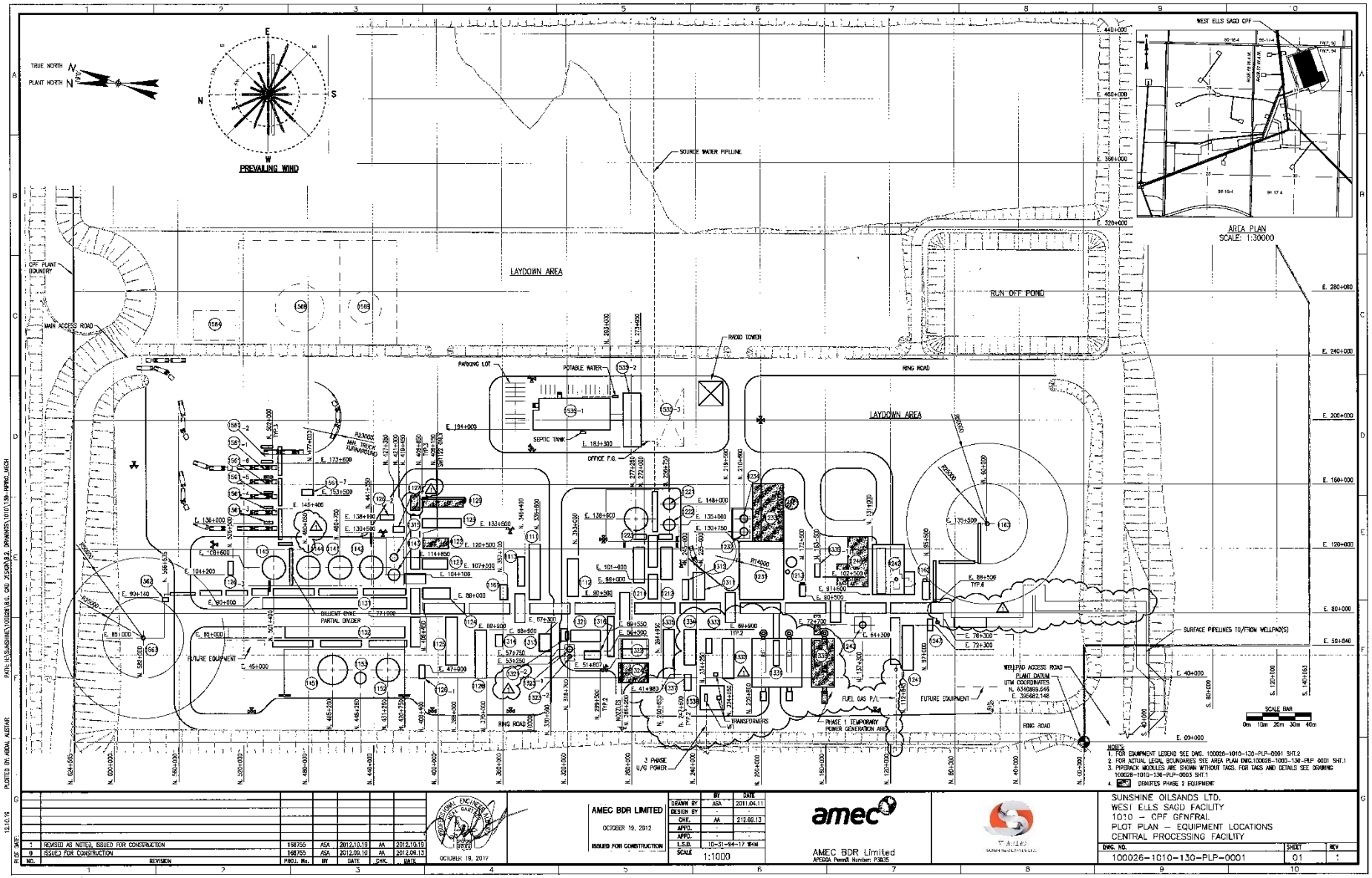
- Key Learnings:
  - The reservoir was able to pressure up during the circulation phase in most well pairs
  - Starting steam injection only when the temperature between well pairs was greater than 100 degrees C
  - After the appropriate temperature was reached, it took about 20 days before wells were ready to turn on the ESP to start production

Key Learnings

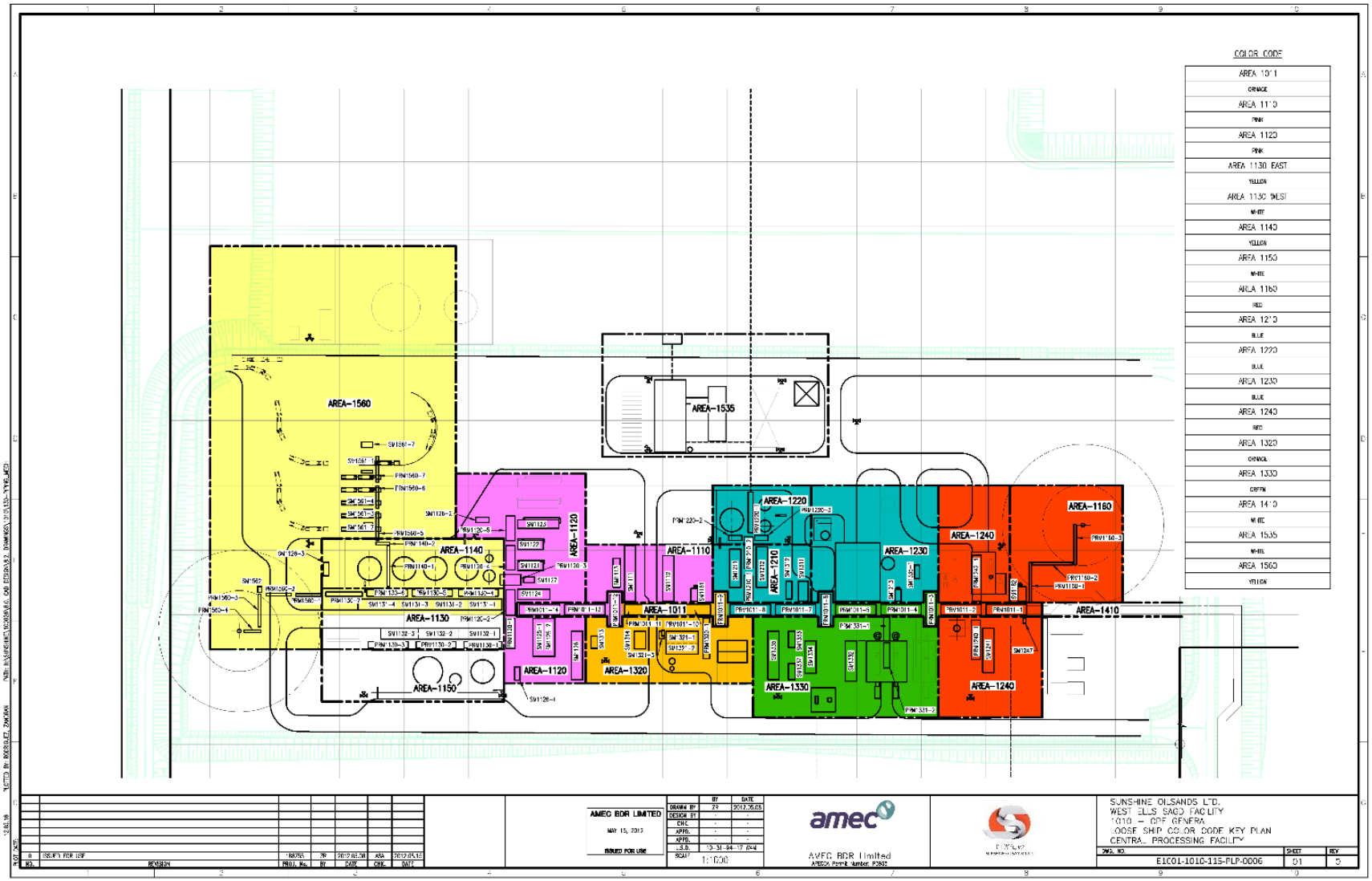
- Continuous steam supply is key to steady growth of the steam chamber
- Down hole instrumentation is very important for optimizing well performance
- Better than predicted performance validates proper wellbore placement and good reservoir pressure containment
- Current ESP design needs to be upgraded to meet anticipated higher flow rates

Facilities

CPF Plot Plan

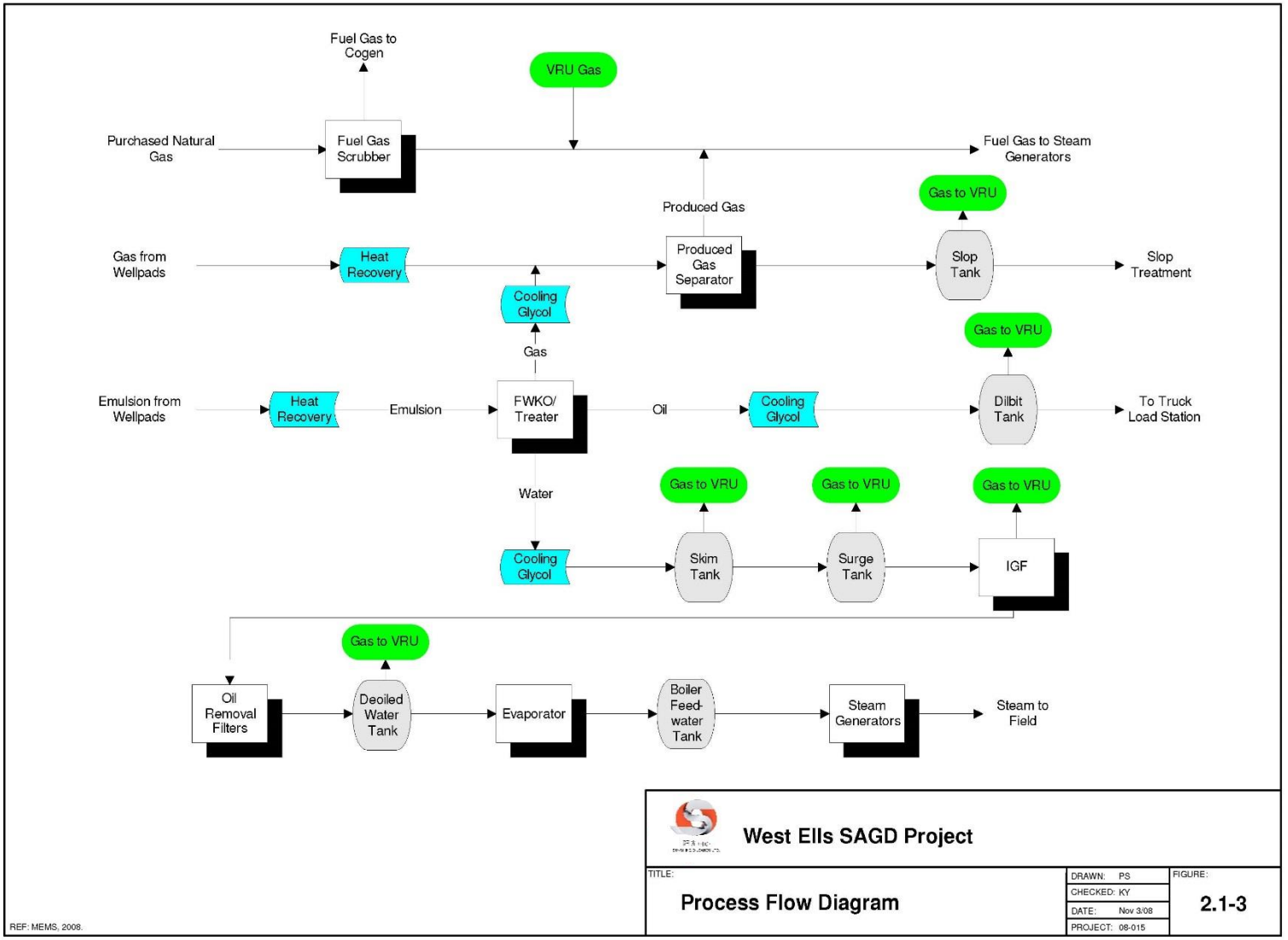


CPF Plot Plan with Areas

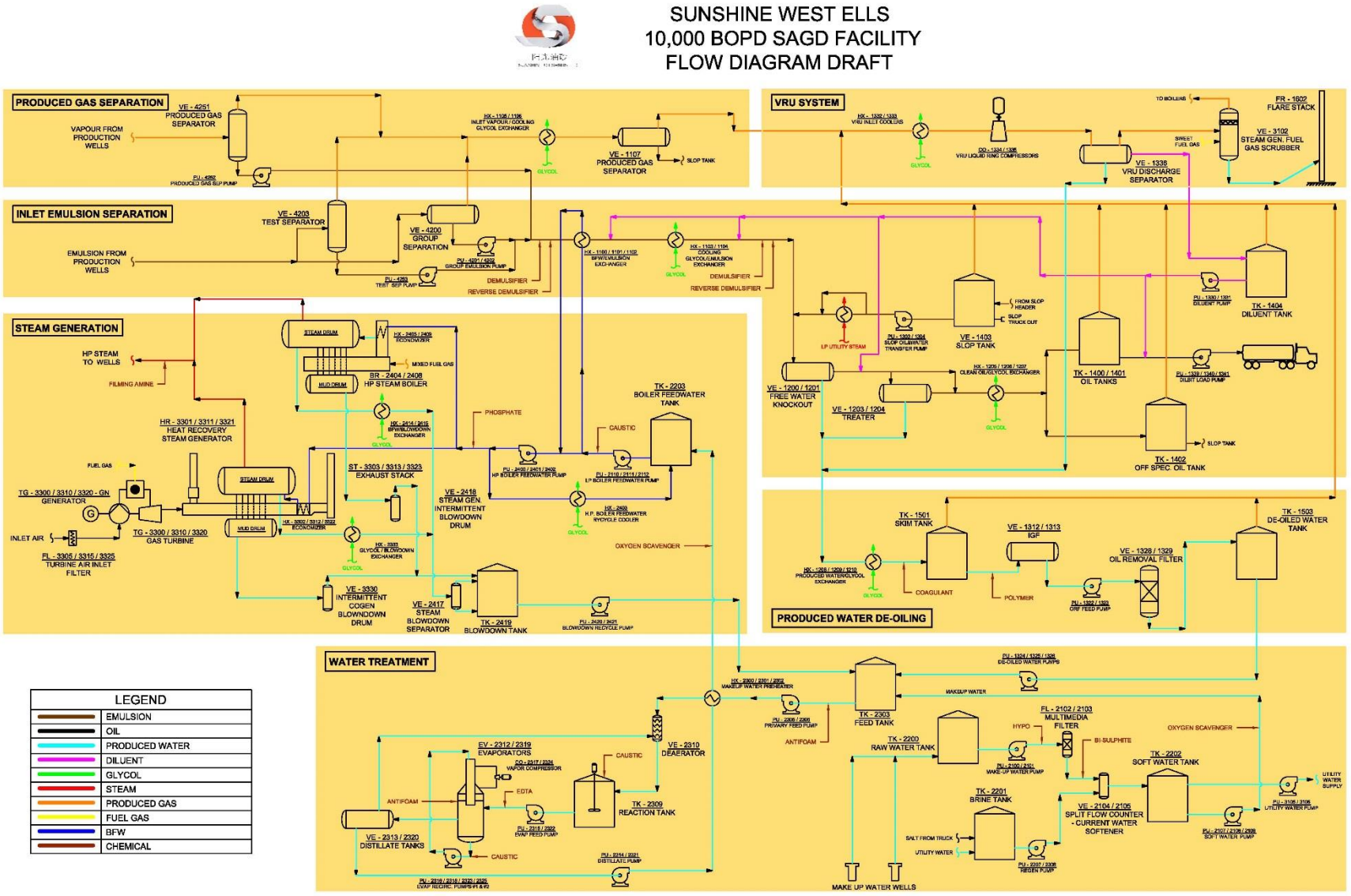


Aerial Photo of CPF

CPF Process Flow Simplified



CPF Process flow



Plant Performance

- Steady state operation achieved
  - The plant is currently operating in a stable manner, and is in the early stages of SAGD mode
  - All equipment operating properly at this time
  - All technical issues were addressed during commissioning and startup and SAGD ramp up

- Full ABSA compliance, audit completed in 2016

- ABSA Certificate Of Authorization Permit No. 11551, Expiry August 31, 2019
- Power Generation total: 19.551 GWh
  - West Ells has on demand power generation with no load banks and no tie in to the power grid, as such West Ells consumes the same amount of electricity as is generated

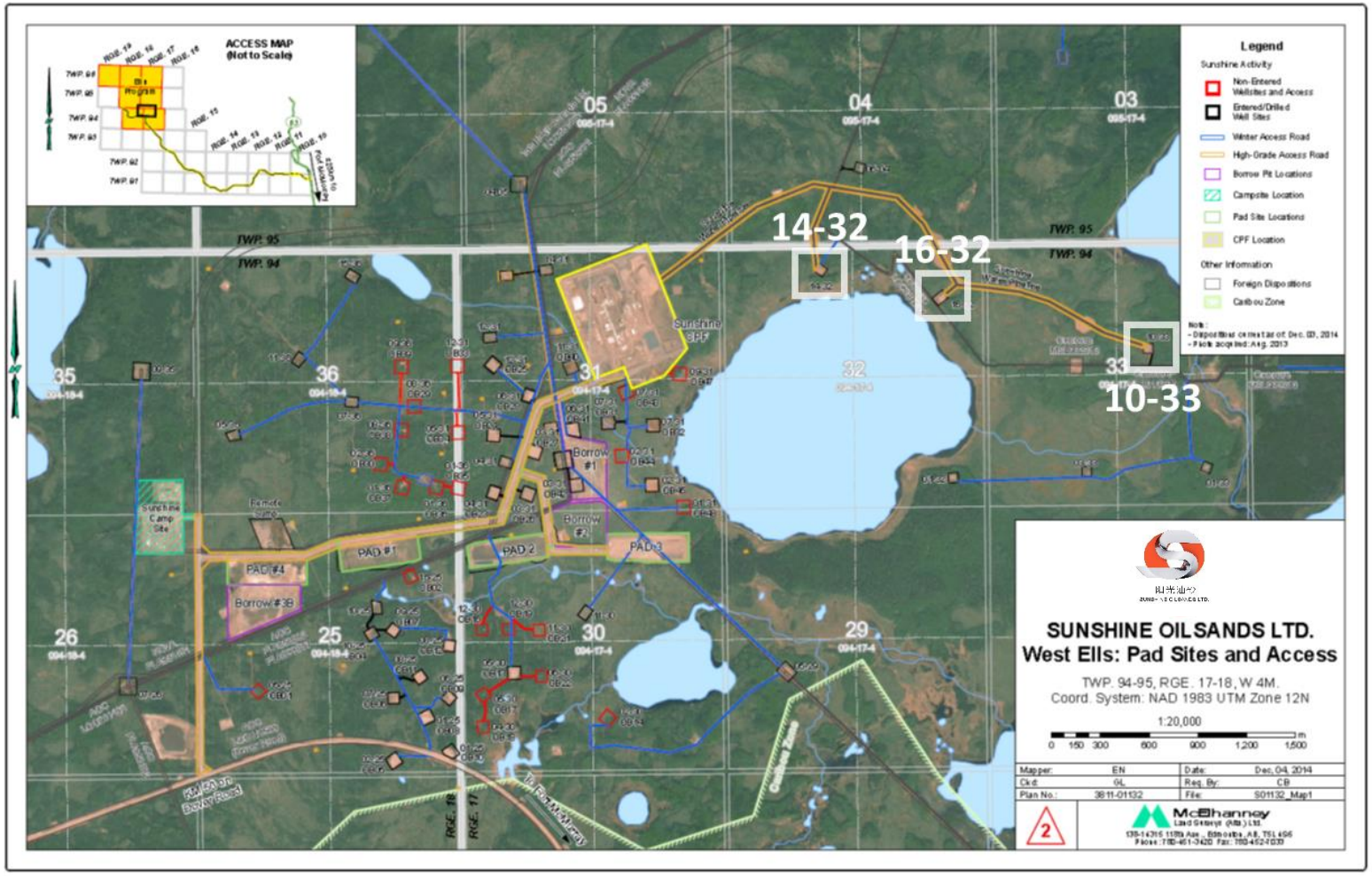
Technical Issues

- During Ramp Up
  - Initially during start-up / ramp up the designed Heat Material Balance was difficult to achieve due to low and cold returns from wells. This resulted in lower than normal (steady state / SAGD mode) returns for the various heat exchangers where this heat was intended for various process mediums. One process medium was the natural gas supply which resulted in condensation forming, and freezing of equipment due to the Joules-Thomson effect. As a result Sunshine installed a second PCV for a two stage let down and an gas fired in-line heater to heat the natural gas.
  - Another process medium was the boiler feed water. Initially due to low returns more make up water is required. Treating of the source water was more extensive than what the initial design was capable of. Thus during initial ramp up we required an additional soft water bank
  - The initial design of our diluent pumps was based on a 5 to 10 thousand barrel per day train. During start-up / ramp up we were subjected to pump failure. Sunshine refurbished the pump impellers and used a smaller impeller trim size to suit the low flow rates during ramp up.

Location of Water Source Wells

Three Viking formation non-saline water source wells are located at:

1. 14-32-94-17W4
2. 16-32-94-17W4
3. 10-33-94-17W4



Water Source Summary Table

Licence No.	Well Name	Location	Measurement Start Date	Measurement Stop Date	Maximum Approved Rate of Diversion	Maximum Approved Diversion Volume	Cum Volume produced	Percent of Max Diversion Volume Produced
					(m3/day)	(m3)	(m3)	(%)
00316770 (Licence)	WSW 16-32c	16-32-94-17W4	Jan. 1, 2016	Dec. 31, 2016	1400	365,000	110,315	30.2%
00373742 (TDL)*	WSW 14-32	14-32-94-17W4	Oct. 7, 2015	Oct. 6, 2016	1500	452,600	120,412	26.6%
00373738 (TDL)*	WSW 10-33b	10-33-94-17W4	Oct. 13, 2015	Oct. 6, 2016	1050	273,750	52,261	19.1%
00385204 (TDL)**	WSW 14-32	14-32-94-17W4	Oct. 7, 2016	Dec. 31, 2016	1500	182,500	29,143	16.0%

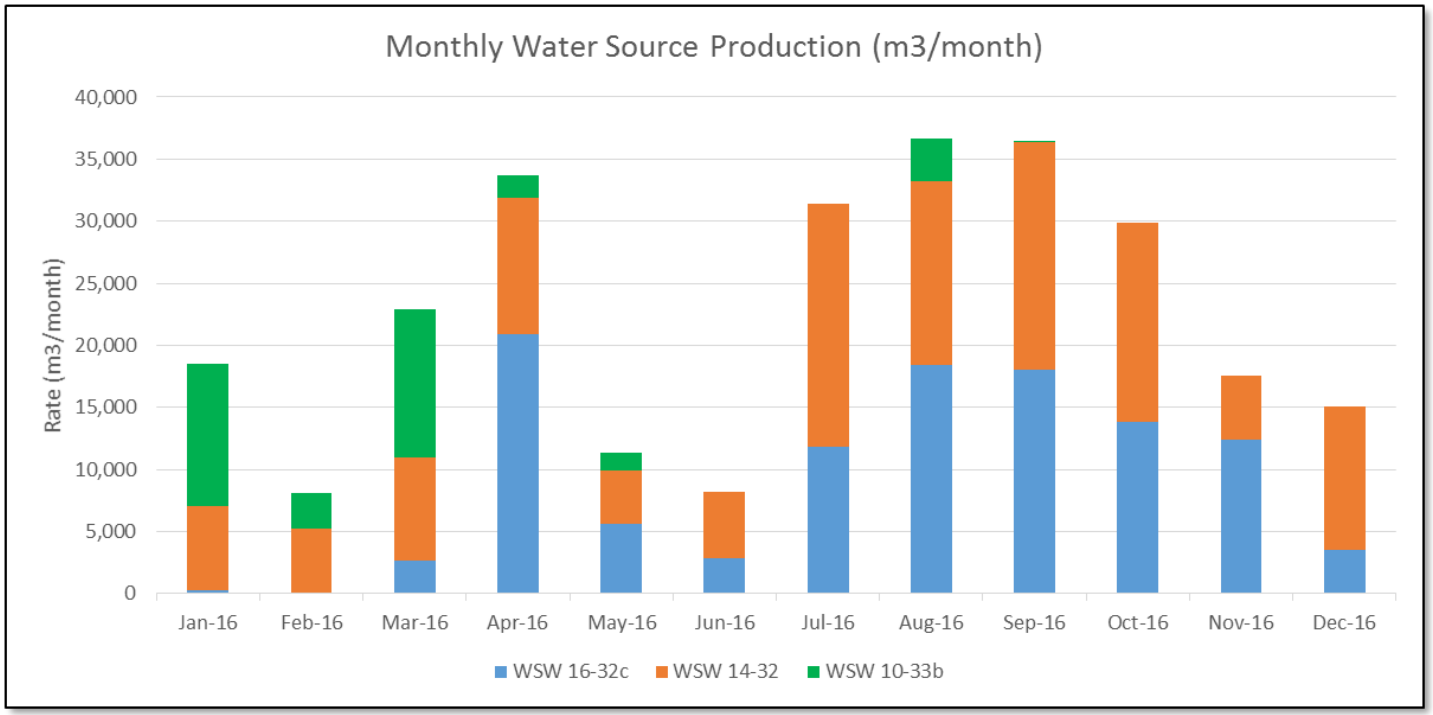
*Temporary Diversion Licences (TDL) expired on October 6, 2016 (WSW 14-32 was renewed for another year and WSW 10-33b was not required).

**Additional Temporary Diversion Licence for WSW 14-32 was granted with an effective date from Oct. 7, 2016 to October 6, 2017.

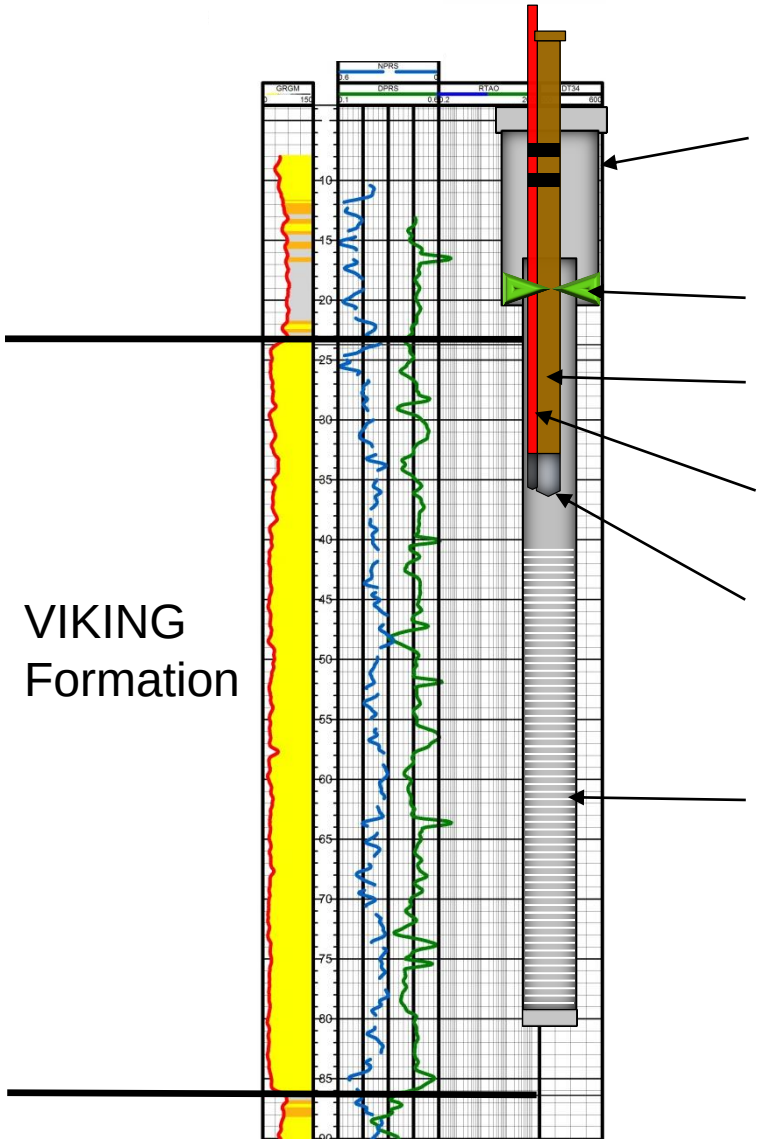
- Did not exceed the maximum daily or maximum approved diversion volume.
- Did not impact the groundwater levels in the overlying Quaternary sediment.

Monthly Water Source Production

Month	WSW 16-32c	WSW 14-32	WSW 10-33b	Total
Jan-16	284	6,739	11,447	18,470
Feb-16	57	5,197	2,876	8,130
Mar-16	2,646	8,323	11,962	22,931
Apr-16	20,877	10,980	1,856	33,713
May-16	5,610	4,318	1,382	11,310
Jun-16	2,829	5,401	0	8,230
Jul-16	11,833	19,537	0	31,369
Aug-16	18,404	14,838	3,447	36,689
Sep-16	17,993	18,420	2	36,415
Oct-16	13,821	16,009	0	29,830
Nov-16	12,421	5,093	0	17,515
Dec-16	3,540	11,548	0	15,089
2016 Total	**110,315**	**126,404**	**32,972**	**269,691**



Water Source Well Typical Completion



Production Casing
219.1 mm OD (8 5/8”) Steel Casing

K-Packer

Tubing String
86 mm (3 3/8” OD) Galvanized Pipe, 76 mm (3”) ID

Polytube with Pressure Transducer
34.9 mm (1 3/8” OD), 25.4 mm (1” ID)

Submersible Turbine Pump
Franklin 350STS8 40HP

Wire-wrapped Telescopic Screen
190.5 mm (7 ½”) OD, 0.012” Screen

Source Water Composition

Parameter	Unit	WSW 14-32	WSW 16-32c	WSW 10-33b	Average
Lab pH	pH	7.78	7.85	7.73	7.79
Lab Ec	µS/cm	1230	892	944	1022
Ca	mg/L	46.5	74.3	89.7	70.2
Mg	mg/L	20.1	20.5	25.5	22.0
Na	mg/L	217	85.8	74.3	125.7
K	mg/L	5.98	4.75	5.24	5.32
Cl	mg/L	4.4	0.96	1.00	2.12
Total Alkalinity	mg/L	527	376	430	444
HCO3	mg/L	643	458	525	542
SO4	mg/L	148	116	86	116.6
Hardness	mg/L	199	270	329	266
TDS	mg/L	759	528	540	609

Methods for Calculation

- Daily oil rate of each well is calculated using the most current well test flow rate from the test separator and the manual oil cut percentage
  - Due to the slugging nature of the wells and high water flow during initial production, the test separator is not fully commissioned
  - There is only one separator on the well pad and well tests generally last for 8 to 15 hours depending on the fluid rate from the well (includes time to purge the test pipeline and test vessel)
  - To properly conduct a well test, with 8 wells on a pad, only one well can be tested every 4 - 5 days
- With the total production from the pad, individual well volumes are prorated against the overall production volume
- The same philosophy and process is applied to produced water and gas
- Currently, the meters on the test separator are being verified every time by comparison with the manual oil cut and water

Water Balance and Meter Calibration

- Water balance at the project has been maintained within +/- 5% and well within reporting and Petrinex limits

- Meter Calibration is now underway for 2017
  - Sunshine has only recently achieved steady state operation at the CPF (approximately 2-3 months)
  - Sunshine is now in the process of ensuring that the annual meter calibrations are completed.

Water Disposal

- Currently there are no approved disposal facilities or wells associated with the West Ells Project

- Development of a disposal well would be beneficial to the project, unfortunately all receptive formations in the region are hydrocarbon bearing zones and as such inappropriate for disposal

- All waste streams are currently collected on site and trucked off to 3rd party approved oilfield waste facilities

Water Disposal

- Due to there being no disposal wells associated with the West Ells Project, all water is trucked off site to approved waste management facilities in the form of Evaporator Blowdown water

- Directive 81 currently requires a disposal limit of 6.47%
  - ((Fresh In x D_f + Produced In x D_p)/(Fresh In + Produced In)) x 100

- West Ells has had an average disposal rate of 4.52% for the life of the project
  - ((Total Disposal)/ (Fresh In + Produced In)) x 100

- West Ells had a disposal rate of 3.72% for the month of January 2017, inside of compliance limits

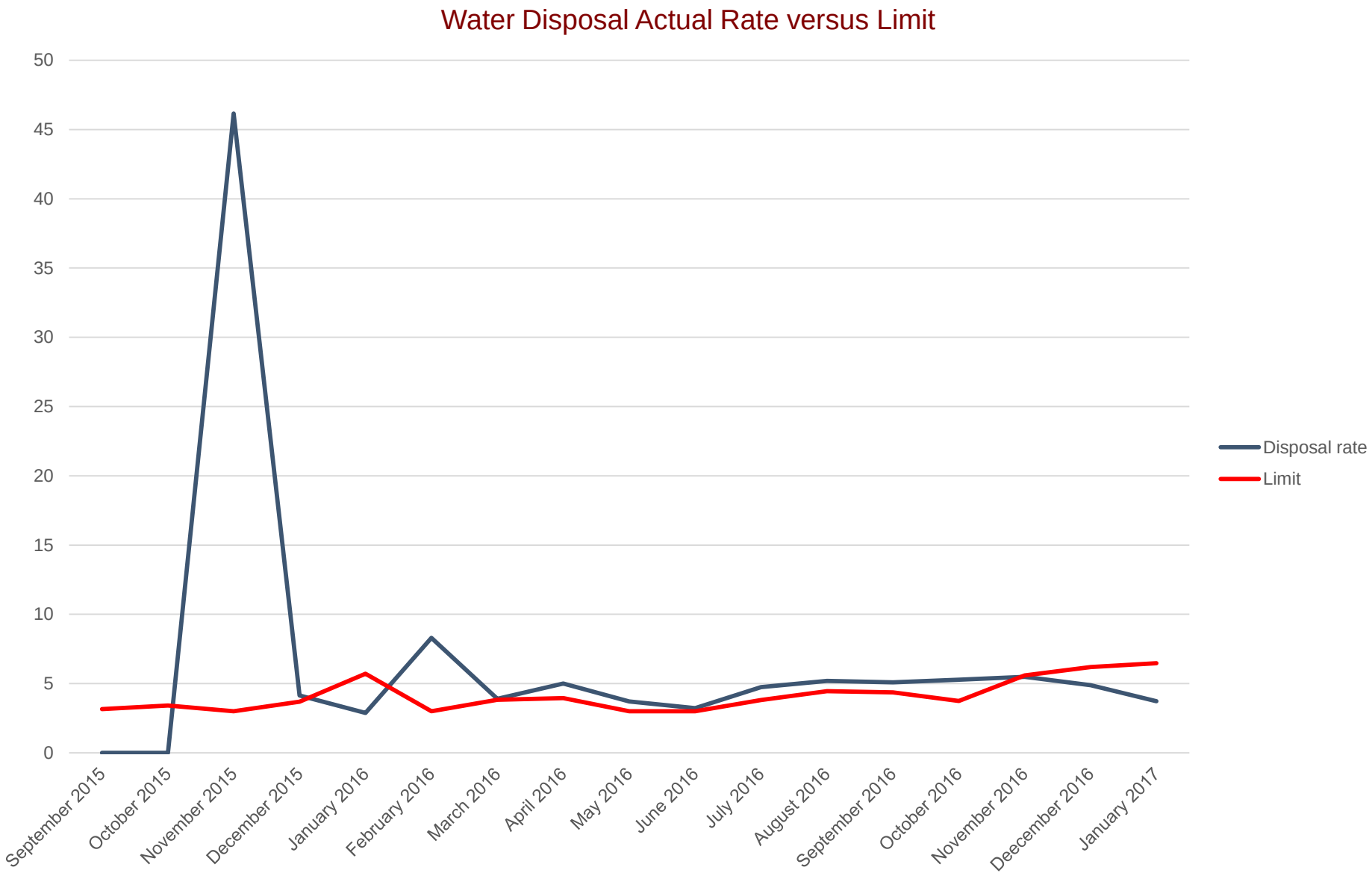
Water Disposal And Recycle Rates

Directive 081 Monthly balances

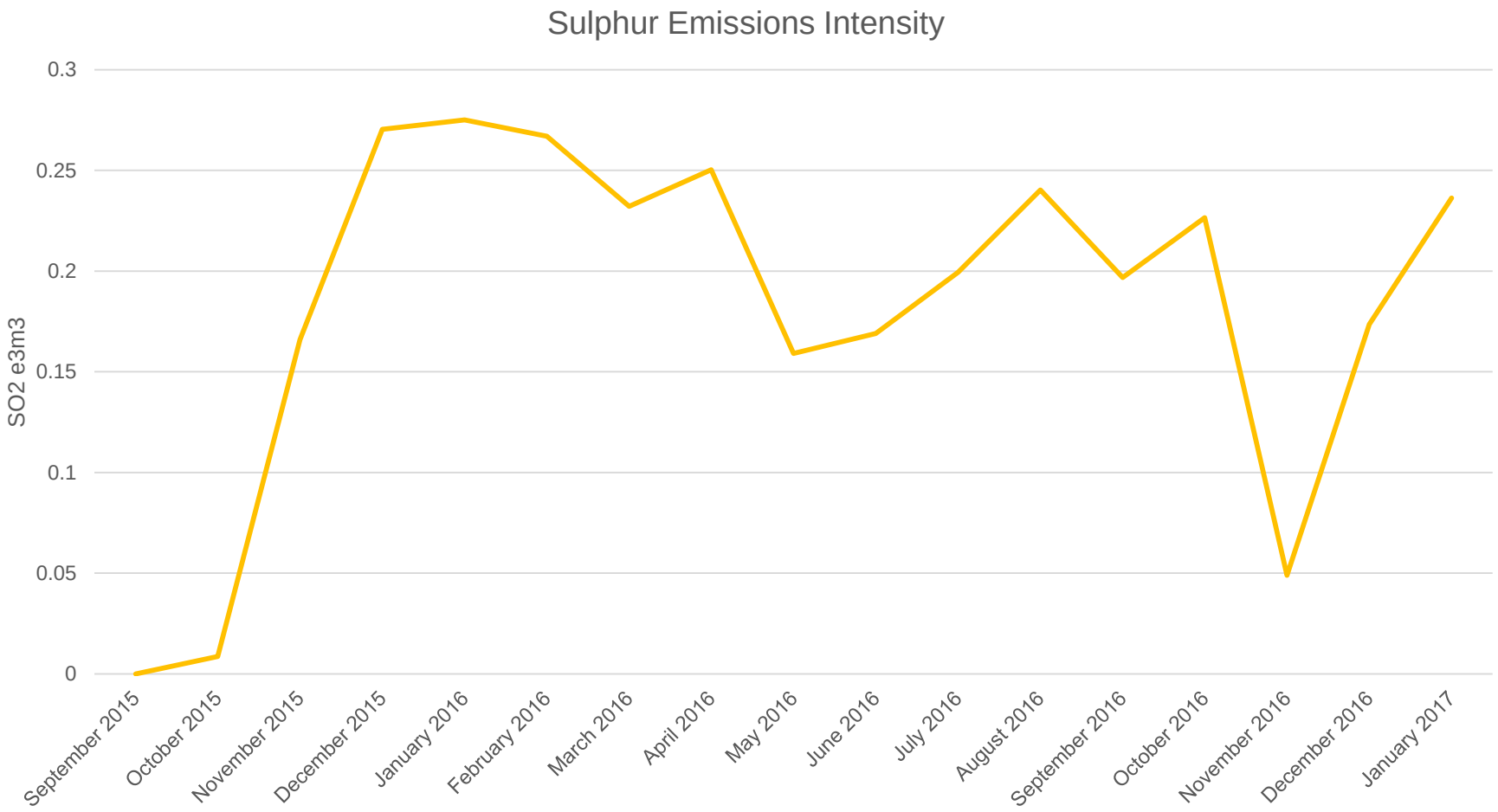
	September 2015	October 2015	November 2015	December 2015	January 2016	February 2016	March 2016	April 2016	May 2016
Fresh Water In (m3)	17728.60	25705.80	3806.30	27561.20	18469.89	8129.75	22928.53	34001.50	11310.40
Produced Water In (m3)	413.50	1647.90	0.00	3026.60	11734.61	0.03	3056.66	5345.25	0.00
Disposal Total (m3)	0.00	0.00	1757.00	1267.79	869.10	675.20	1015.00	1967.00	419.30
Disposal Factor, Fresh Water	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Disposal Factor, Produced Water	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Disposal Limit %	3.16	3.42	3.00	3.69	5.72	3.00	3.82	3.95	3.00
Disposal Rate %	0.00	0.00	46.16	4.14	2.88	8.31	3.91	5.00	3.71

	June 2016	July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	
Fresh Water In (m3)	8229.66	31369.30	36148.70	36414.85	29830.30	17514.60	15088.60	20635.10	
Produced Water In (m3)	0.04	4075.05	9447.11	8794.98	3553.91	10237.82	12639.08	20250.43	
Disposal Total (m3)	265.20	1679.10	2369.10	2304.10	1764.00	1522.00	1353.10	1520.80	
Disposal Factor, Fresh Water	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
Disposal Factor, Produced Water	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Disposal Limit %	3.00	3.80	4.45	4.36	3.75	5.58	6.19	6.47	
Disposal Rate %	3.22	4.74	5.20	5.10	5.28	5.48	4.88	3.72	

Water Disposal Rate

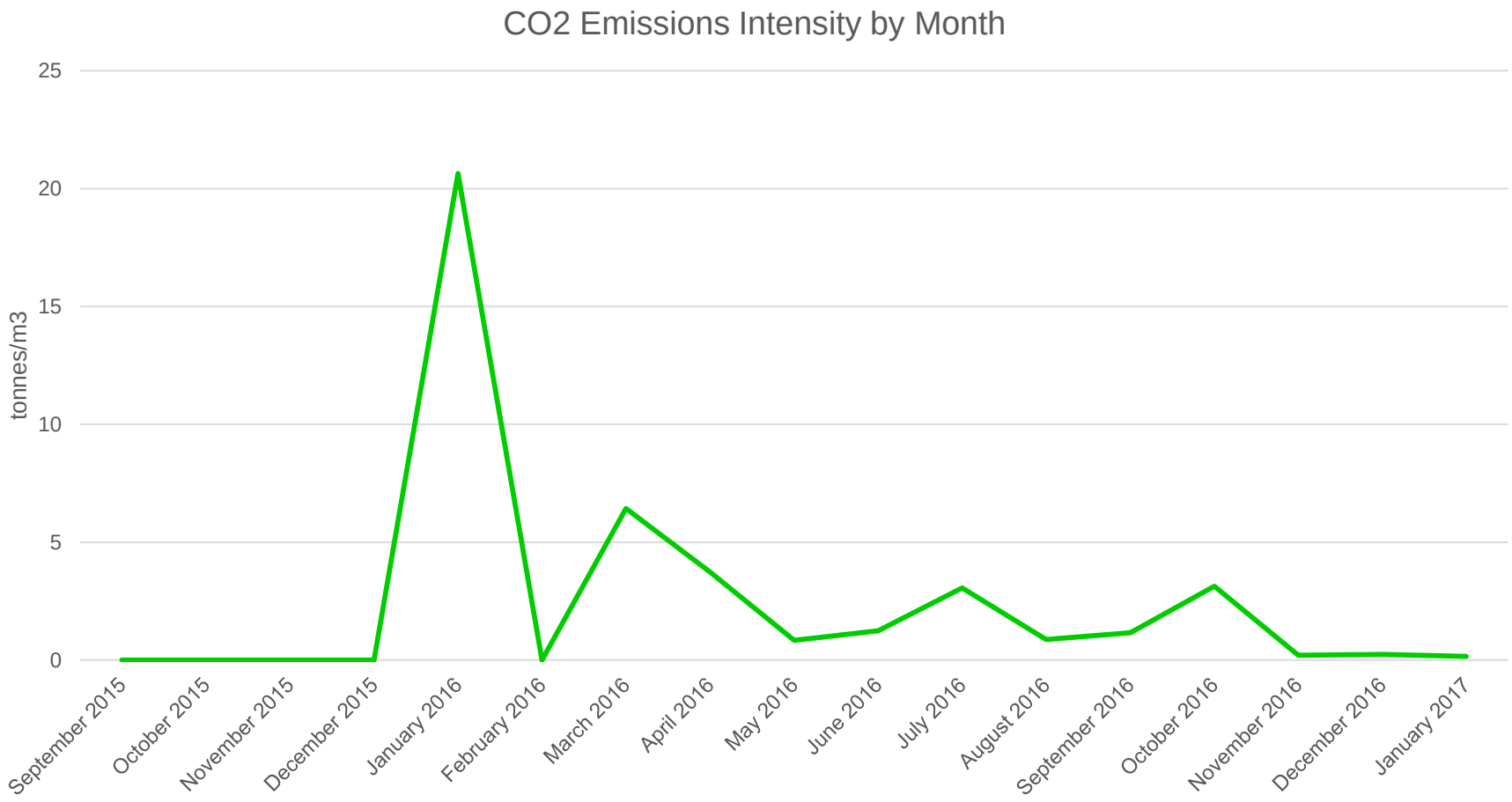


Sulphur Emissions Intensity



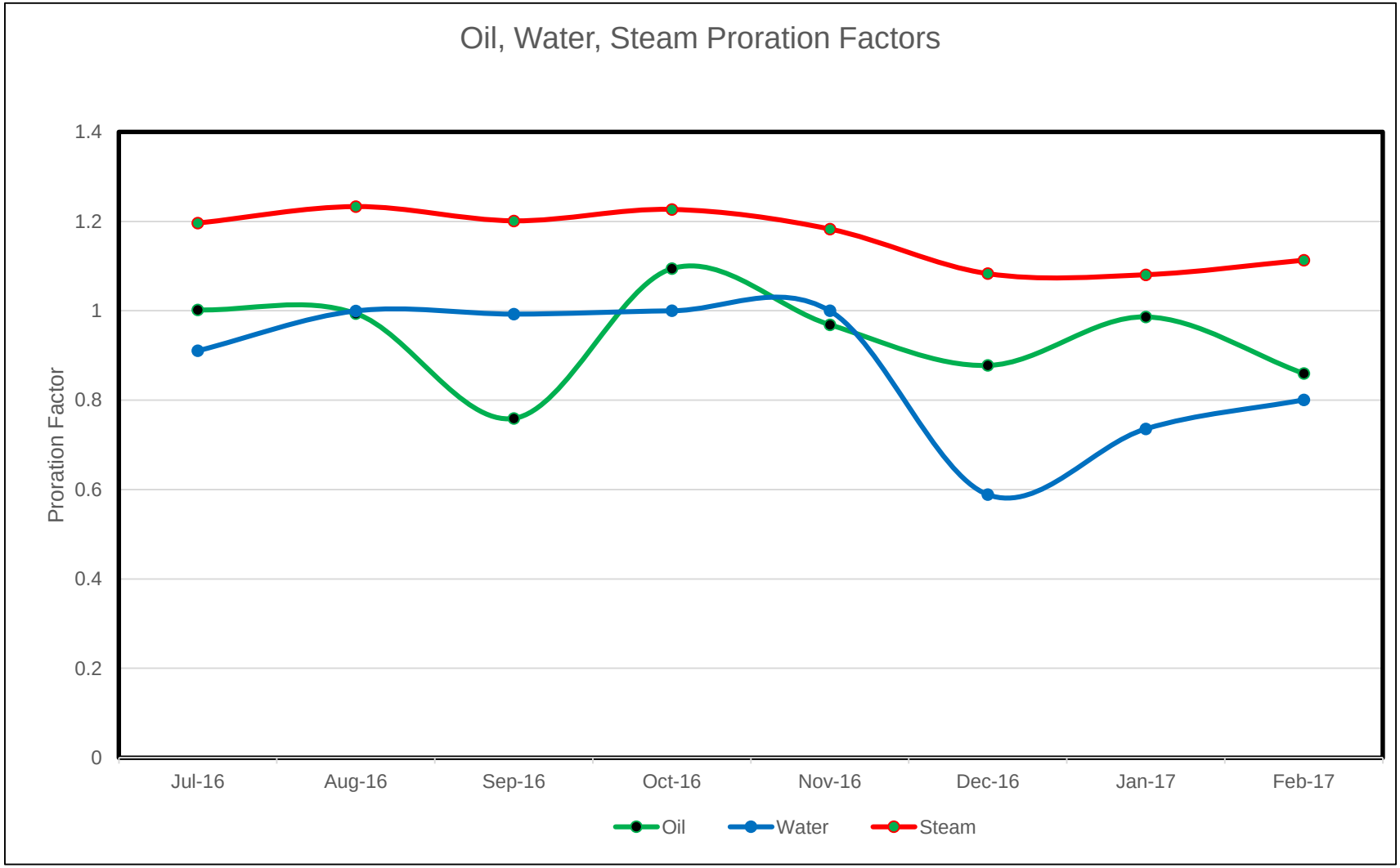
West Ells has a sulphur inlet rate of 0.34 t/d

CO2 Emissions Intensity (tonnes/m³)

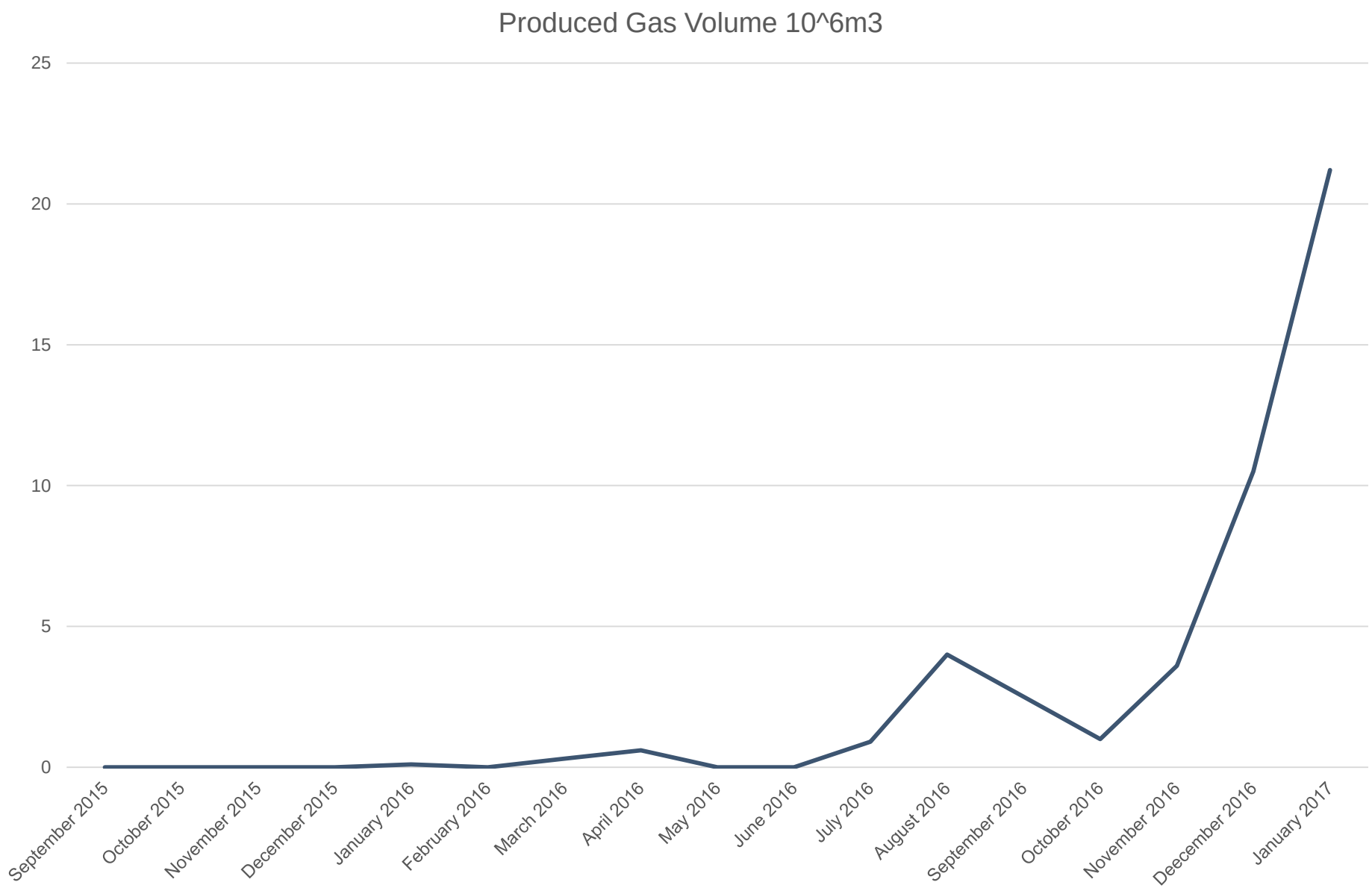


- Emissions intensity was 0.896 tonnes/m3 for life of project including prior to steady state operation
- Emissions intensity of zero on monthly graph indicates no bitumen production

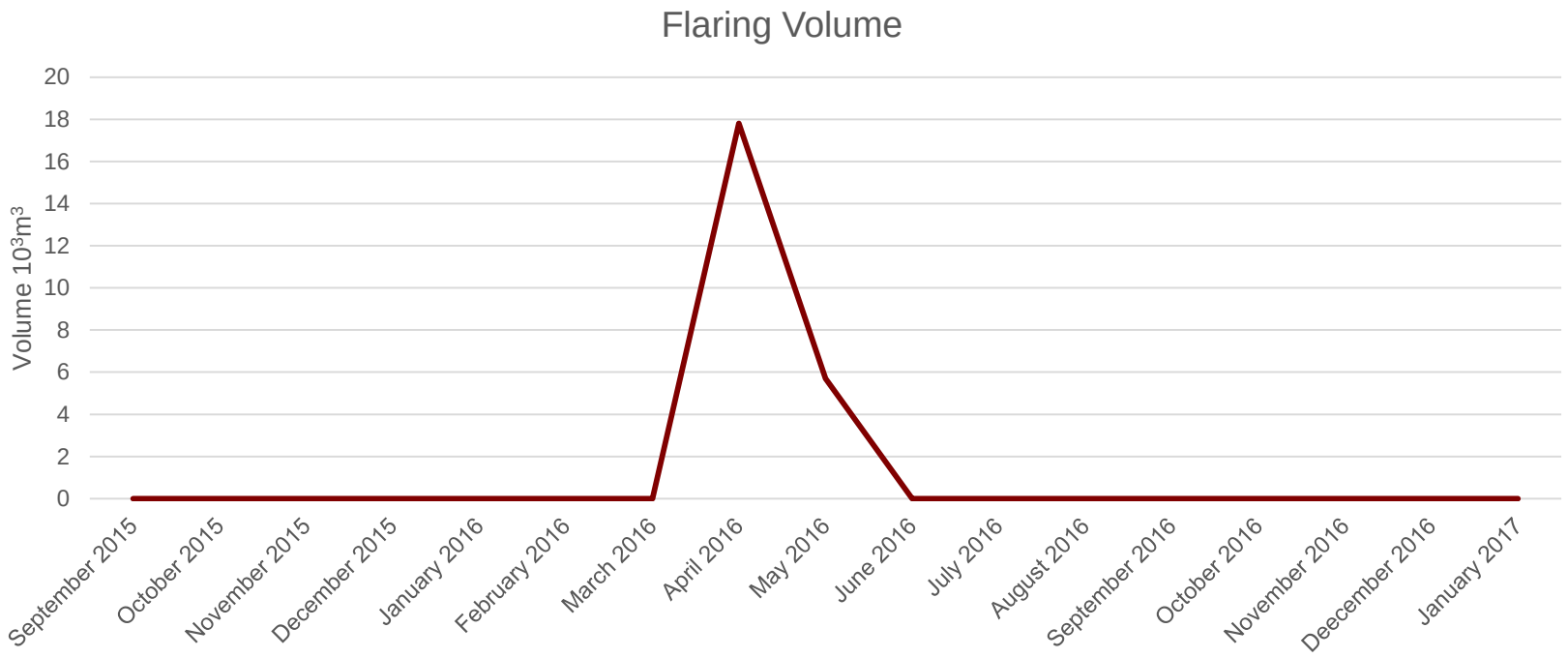
Proration Factors



Produced Gas Monthly Average



Flaring Volume

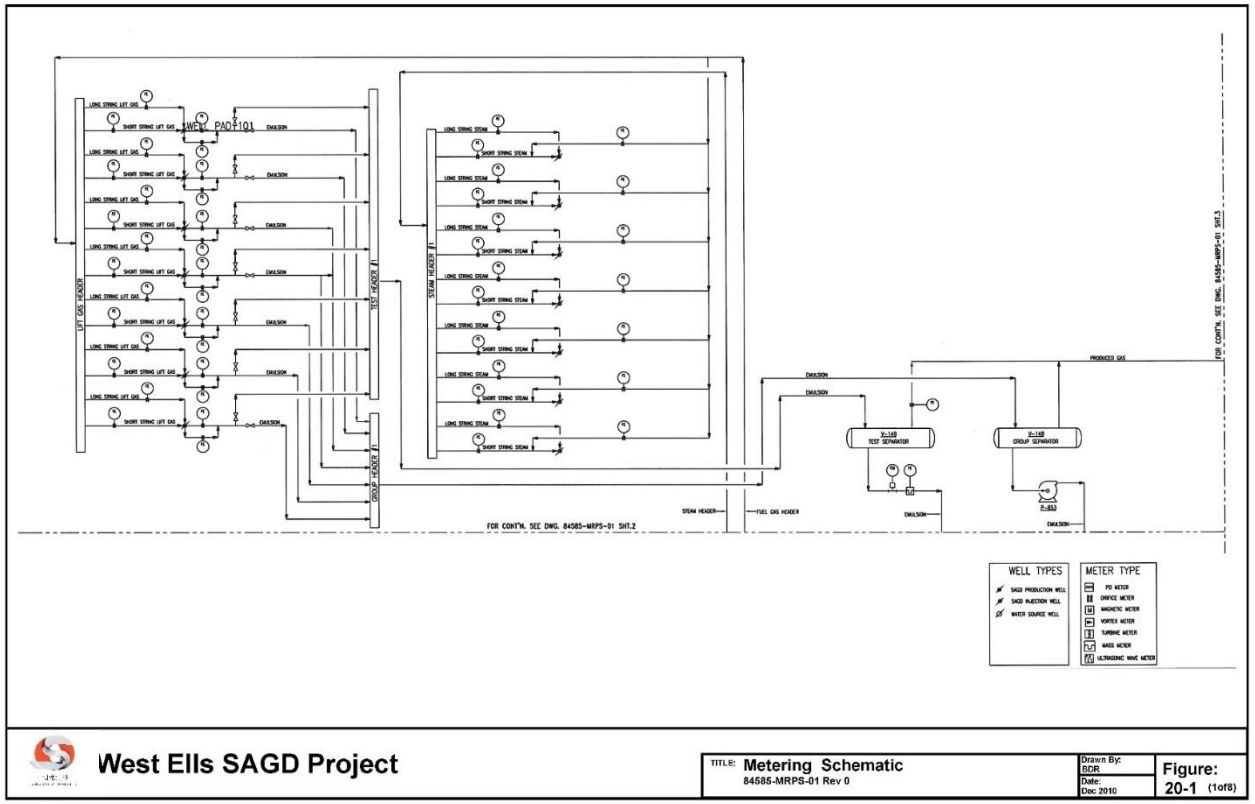


	September 2015	October 2015	November 2015	December 2015	January 2016	February 2016	March 2016	April 2016	May 2016
Flaring Volume (10^3m^3)	0	0	0	0	0	0	0	17.8	5.7

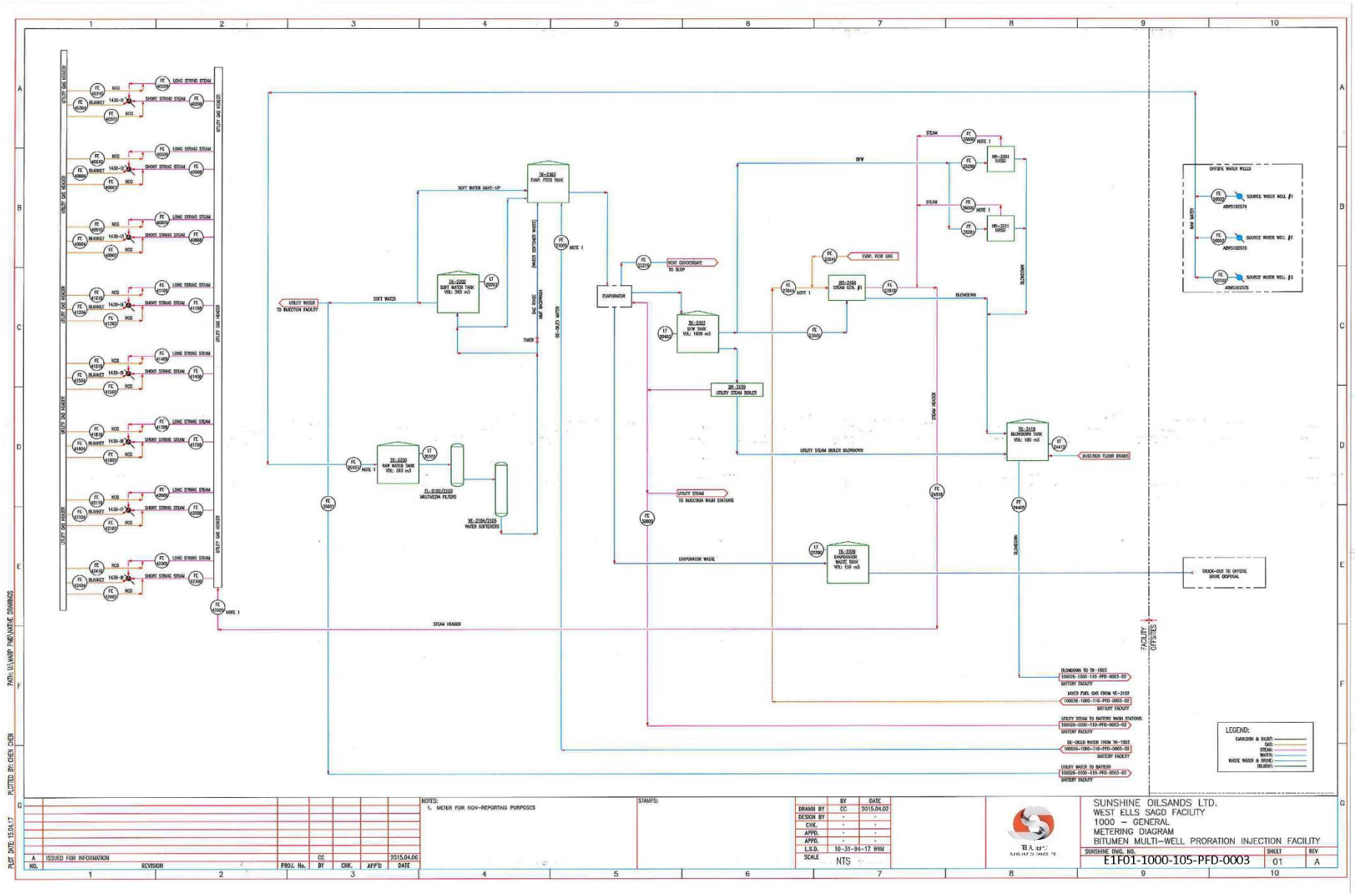
	June 2016	July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	
Flaring Volume (10^3m^3)	0	0	0	0	0	0	0	0	

MARP

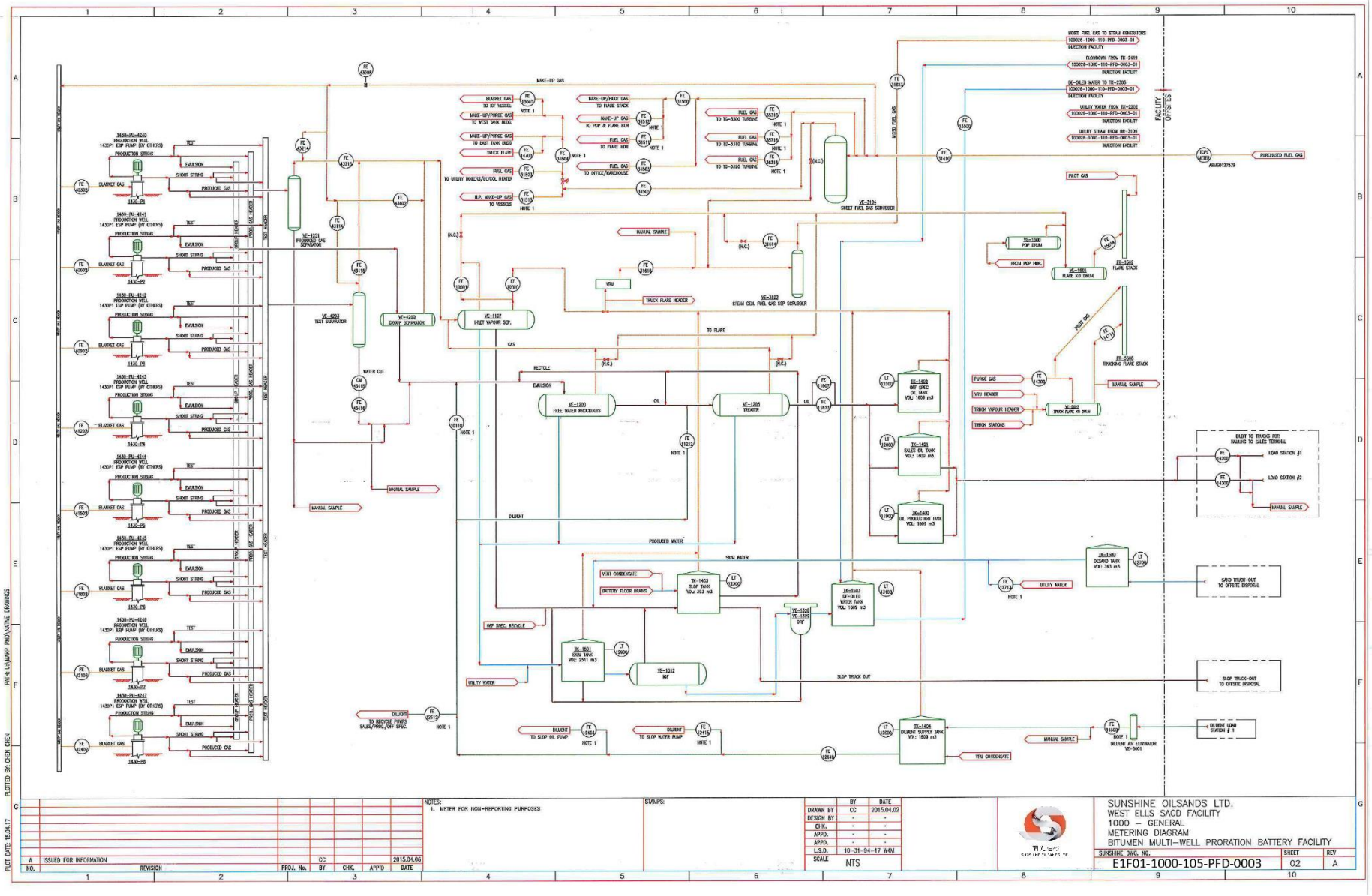
- There have been no changes to the MARP since the 2015 update
  - Reporting codes associated with West Ells
    - ABBT0123666
    - ABIF0123667
    - ABWS0139258. ABWS0139259. ABWS0139260



Metering Schematic



Metering Schematic



Regulatory and Compliance

Compliance

- **Issues**
  - Air monitoring
    - No major issues, a few minor procedural issues at the start of the project for the ambient air monitoring, all issues resolved with dedicated field personnel and on-site training
    - CEMS has been running successfully since commissioning
  - No major spills or releases (>2m^3)

- **Successes**
  - Bear awareness training
    - Had a very large number of bears in 2014, more intensive training and management was implemented in 2015, and saw a drastic reduction in bear interactions in 2015 and continuing in 2016
    - Worked with AEP directly on bear management
  - Internal sump system tied into slop tank
    - This system has reduced minor spills to almost zero while allowing full containment and proper disposal of all waste
  - Enviroboxes
    - In use at inherently high risk load/unload points and have been very successful

Fort McMurray Fires

- West Ells site underwent a mandatory evacuation in May of 2016, and did not have site personnel return for approximately 30 days
  - Instrumentation string in two wells damaged beyond repair and replaced
  - Ongoing evaluation of potential damage to other instrumentation strings
  - No impact to surface facilities
- Minor Compliance issues due to mandatory site evacuation
  - Ambient Air Monitoring was unable to be maintained due to absence
  - Shallow groundwater monitoring, one sample event missed due to absence
- All compliance issues were reported to AER and AEP
- Sunshine was an active participant in regional initiatives at the time, and worked with all levels of Government during this emergency
- West Ells site and helipad used as a staging area for Wildfire Alberta helicopters

Future Plans

- Regulatory
  - Solvent Surfactant Application
    - Sunshine expects to apply for solvent surfactant approval to improve resource recovery

- Phase 1 (5,000bbl/d)
  - Sunshine plans to continue to fully demonstrate the reservoir productivity before advancing to Phase 2

- Phase 2 (5,000bbl/d)
  - Sunshine continues to plan the development of Phase 2 and will incorporate any and all key learnings from Phase 1 to improve design and efficiency

- Steam Strategy
  - Continue to maximize steam efficiency and improve uptime
  - Sunshine will continue building the steam chamber and ramping up production towards nameplate capacity
  - Increased plant reliability will be a major focus

Compliance Declaration

Sunshine is compliant with all AER Rules and Regulations and meets all approval requirements under the Environmental Protection and Enhancement Act

Contact

Thank you for your time!

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