

Cenovus Foster Creek in-situ oil sands scheme (8623) update for 2014

Subsurface
Calgary | May 27, 2015



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Advisory

This presentation contains information in compliance with:

AER Directive 054 - Performance Presentations, Auditing, and Surveillance of In Situ Oil Sands Schemes

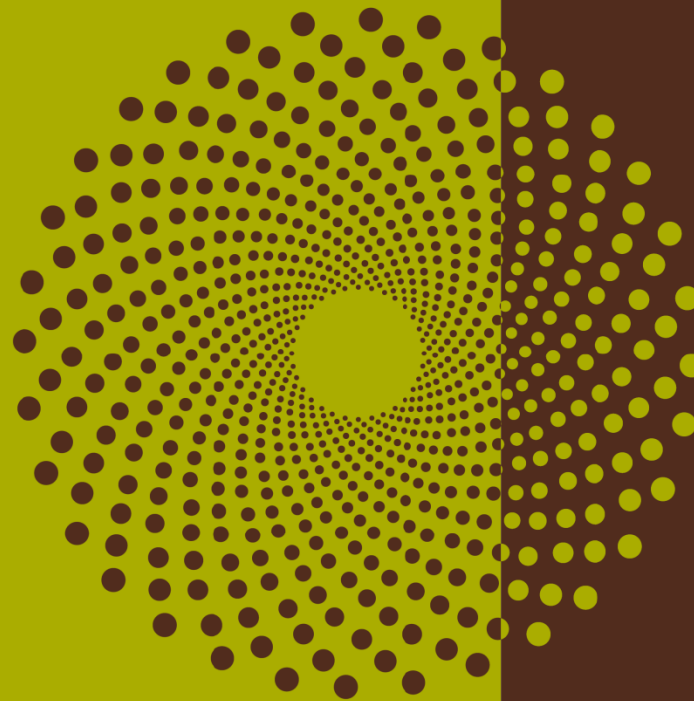
Section 3.1.1 Subsurface Issues Related to Resource Evaluation and Recovery

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Additional information regarding Cenovus Energy Inc. is available at cenovus.com.

Current project status

Subsection 3.1.1-1

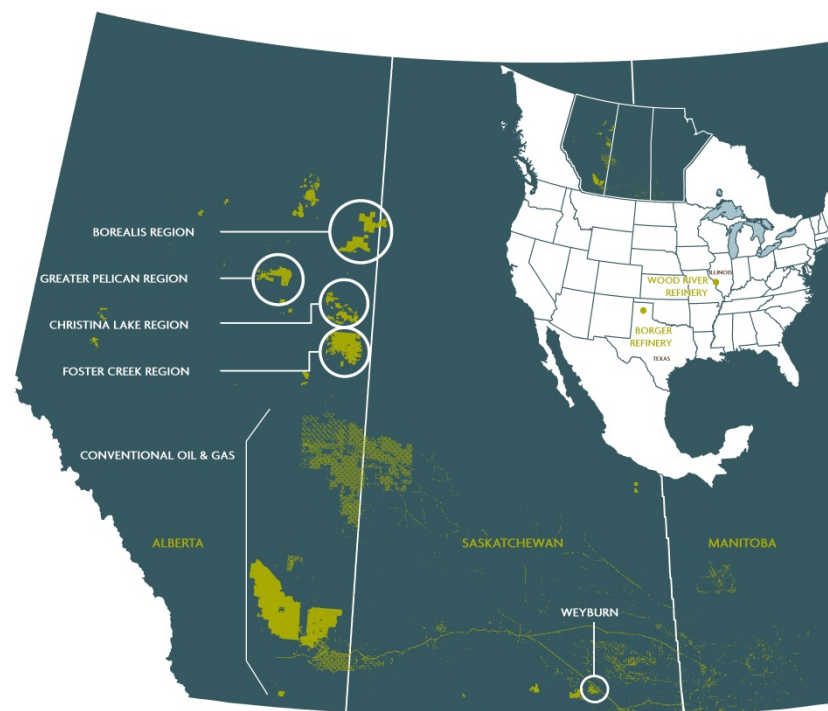


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Strong integrated portfolio

TSX, NYSE | CVE

Enterprise value	C\$25 billion
Shares outstanding	829 MM
2015F production	
Oil & NGLs	204 Mbbls/d
Natural gas	438 MMcf/d
2014 proved & probable reserves	3.9 BBOE
Bitumen	
Economic contingent resources*	9.3 Bbbls
Discovered bitumen initially in place*	93 Bbbls
Lease rights**	1.5 MM net acres
P&NG rights	5.6 MM net acres
Refining capacity	230 Mbbls/d net



Values are approximate. Forecast production based on midpoints of January 28, 2015 guidance. Cenovus land at December 31, 2014. *See advisory. **Includes an additional 0.5 million net acres of exclusive lease rights to lease on our behalf and our assignee's behalf.

Foster Creek – current project status



Aerial shot of Foster Creek facility, and steam and emulsion lines

Note that production volumes refer to total cumulative production capacity

- **Phase A - 20k bbls/d on October 2001 (3,180 m3/d)**
- **80 MW Cogen on Q1 2003**
- **Phase B - 30k bbls/d (4,770 m3/d) complete 2004**
- **Phase C - 60k bbls/d complete 2006 (9,534 m3/d)**
- **Phases D & E - 120k bbls/d complete 2009 (19,078 m3/d)**
- **Water treating debottleneck and cooling loop complete 2010**
- **Phase F - 150k bbls/d complete 2014**
- **Q1 2015 oil production 135,803 bbls/d (21,580 m3/d)**
- **Record oil production day 148,971 bbl (23,673 m3)**
- **Approved for Phases A – J**

Project status – phase D and E update

Main Plant:

- 120,000 bbls/d (19,078 m³/d) oil treating design capacity commissioned in 2009
- Debottleneck on water treating capacity complete in 2010
 - 2014 annualized average was 118,344 bbls/d (18,806 m³/d)
 - 2014 exit rate, Dec 2014, was 140,066 bbls/d (22,258 m³/d)

Phases A - E well update:

- E16 Wedge Well™ technology pad on production in June 2014
- E20 Wedge Well™ technology pad on production in August 2014
- E02 Wedge Well™ technology pad on production in September 2014
- E03 Wedge Well™ technology pad on production in November 2014
- E19 Wedge Well™ technology pad on production in December 2014

Project status – phase F, G and H expansion

Expansions have the following design capacities:

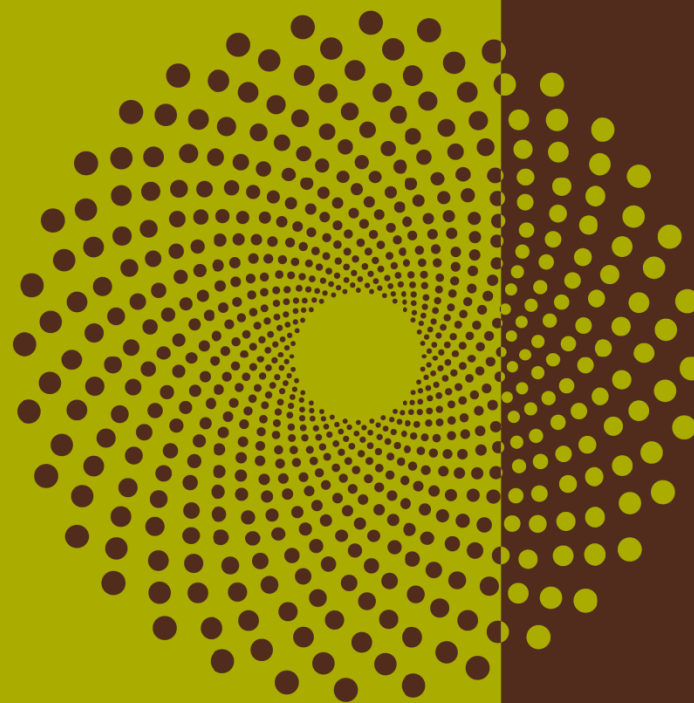
- Phase F – 30k bbls/d oil, online September 2014
- Phase G – 30k bbls/d oil, first production target 2016
- Phase H – 30k bbls/d oil, deferred

Phase F well update:

- E07 Pad on production in August 2014
- E14 Pad on production in October 2014
- E42 Pad on production in November 2014
- W06 Pad on production in November 2014
- W03 Pad on production in December 2014
- W08 Pad on production in March 2015

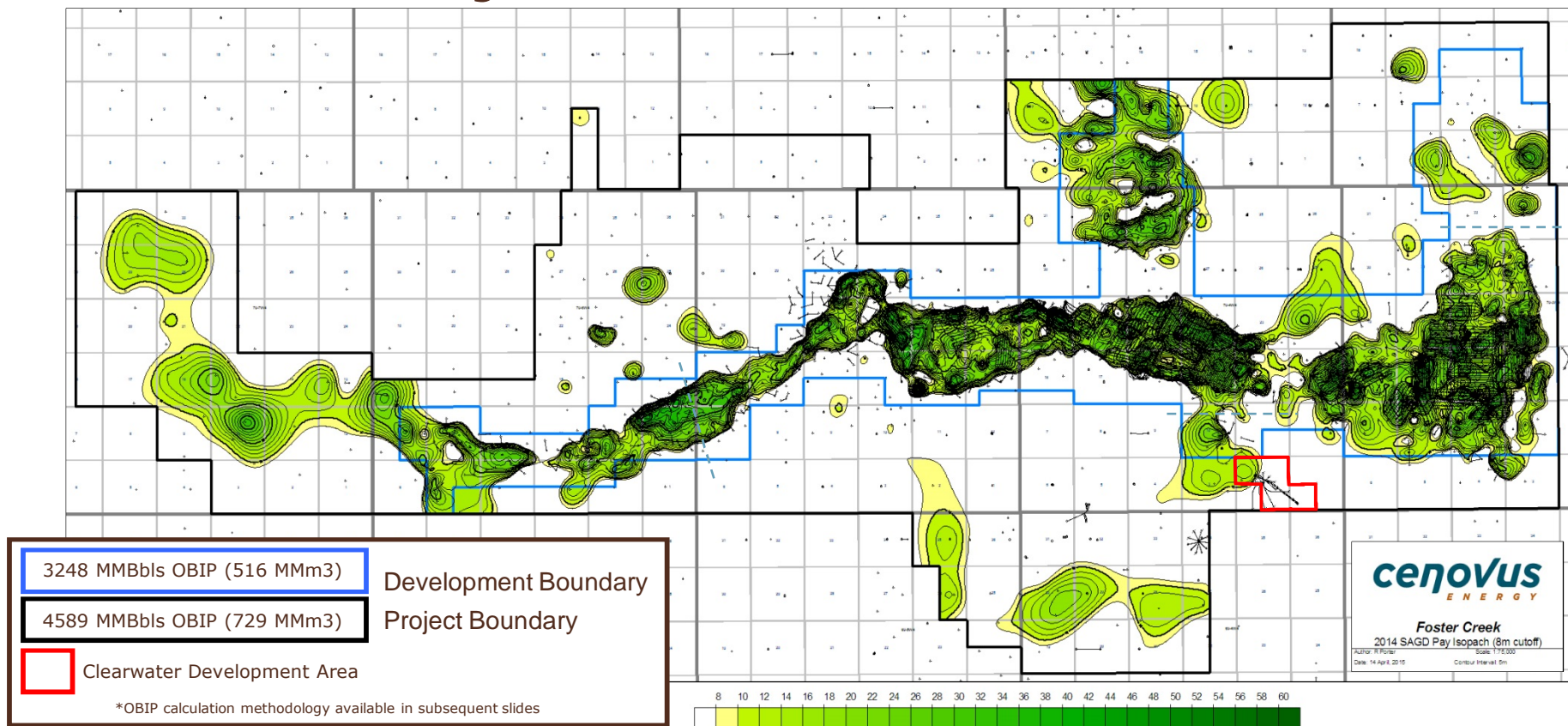
Geology / geoscience

Subsection 3.1.1 – 2)



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Current Project Status – SAGD Resource



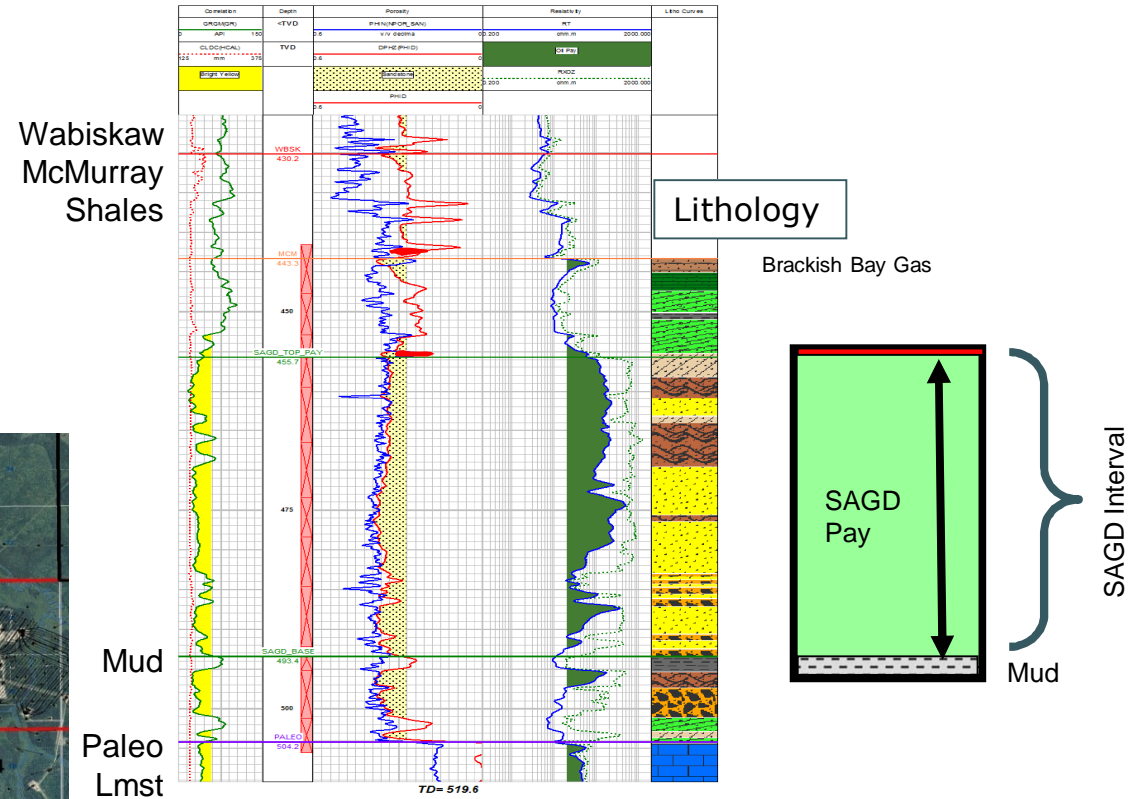
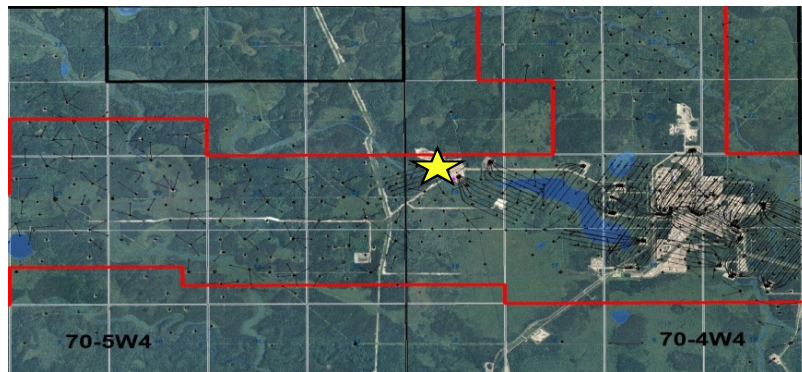
Reservoir characteristics

Reservoir Characteristic	West Area	Central Area	East Area
Depth (m subsea)	180 – 225	180 – 225	180 – 225
Thickness (m)	Up to 30+	Up to 30+	Up to 30+
Porosity (%)	34%	34%	32%
Horizontal Permeability (D)	Up to 10 D	Up to 10 D	Up to 8 D
Vertical Permeability (D)	Up to 8 D	Up to 8 D	Up to 6 D
Oil Saturation	~0.85 (0.50 in transition)	~0.85 (0.50 in transition)	~0.85 (0.50 in transition)
Water Saturation	~0.15 (0.50 in transition)	~0.15 (0.50 in transition)	~0.15 (0.50 in transition)
Original Pressure (kPa)	~2700	~2700	~2700
Original Temperature (°C)	12 °C	12 °C	12 °C

Composite type log: central wells

- Basal mud defines base of pay
- Basal mud is discontinuous and ranges from 0-4 metres in thickness
- Provides a good marker during SAGD operations

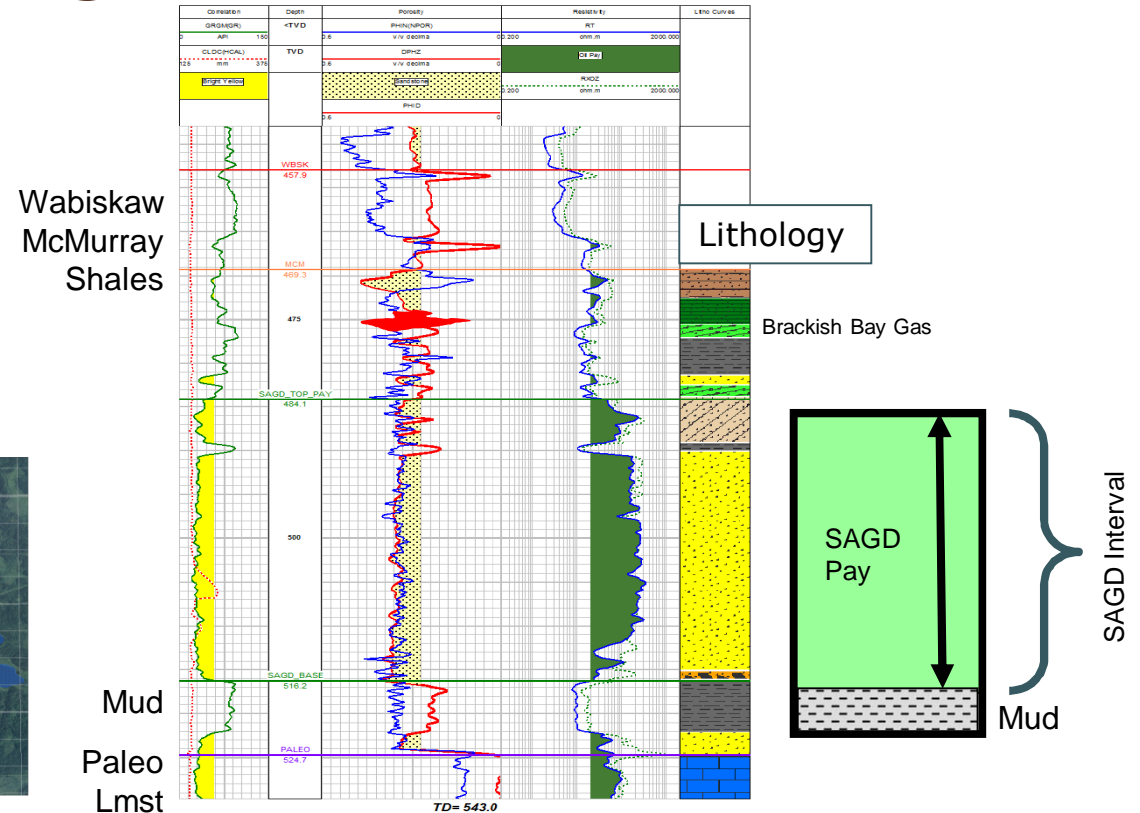
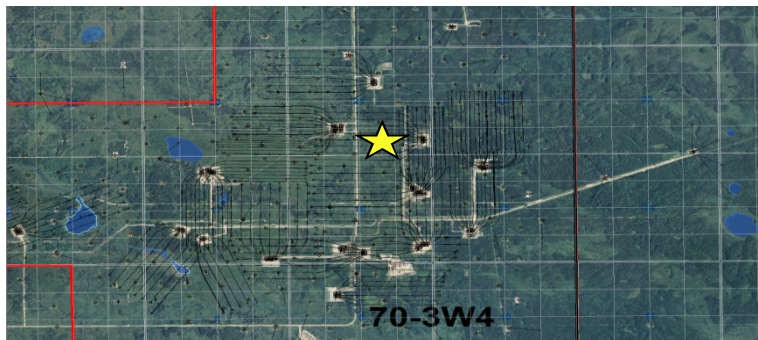
Location: 11-19-70-4W4



Composite type log: east wells

- Basal mud defines base of pay
- Basal mud is discontinuous and ranges from 0-4 metres in thickness
- Provides a good marker during SAGD operations

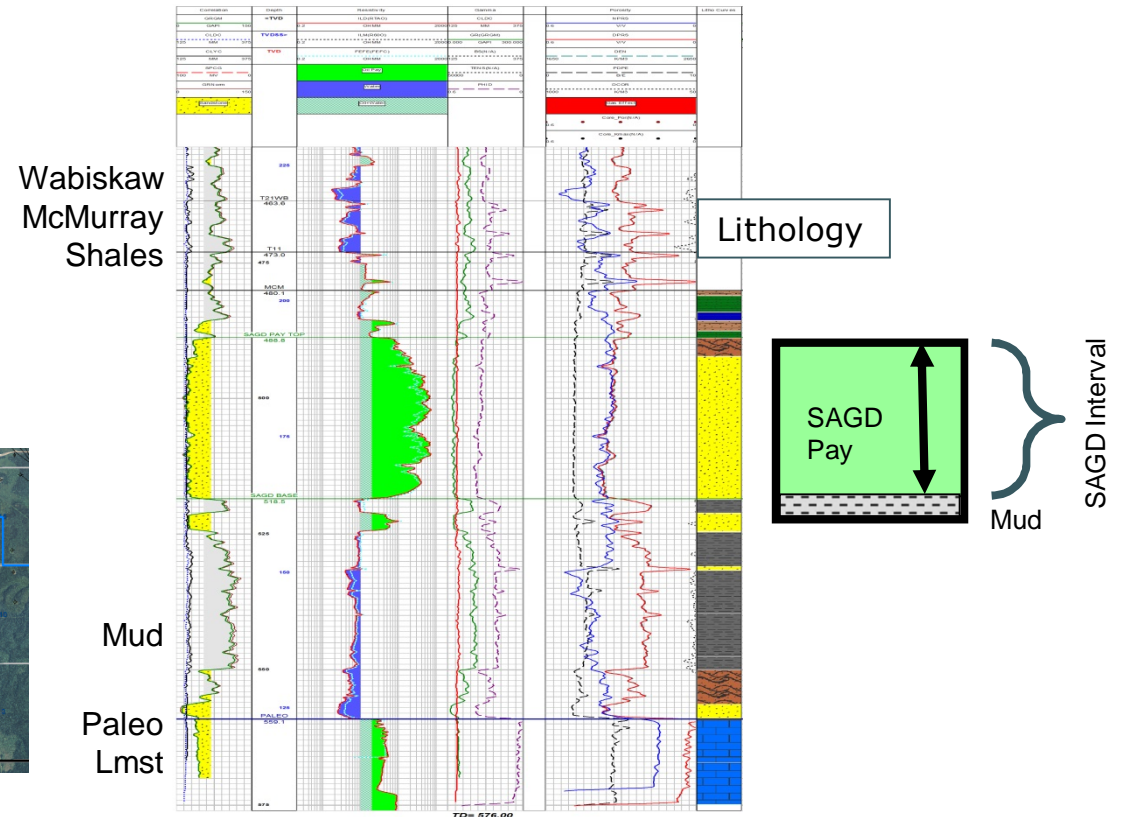
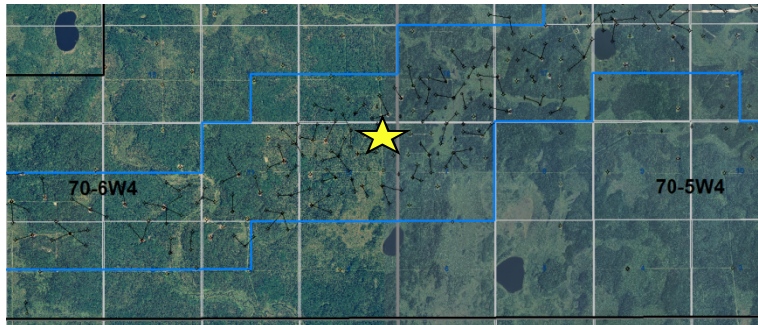
Location: 2-21-70-3W4



Composite type log: west wells

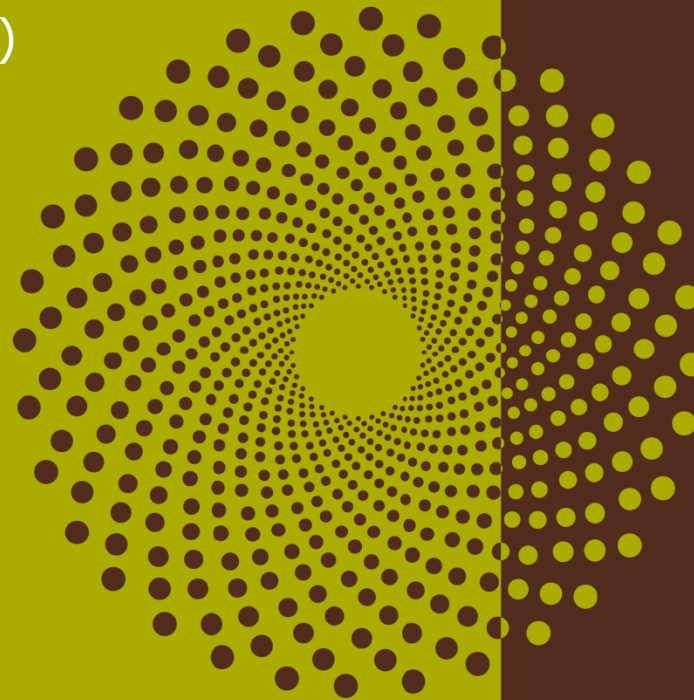
- Basal mud defines base of pay
- Basal mud is discontinuous and ranges from 0-4 metres in thickness
- Provides a good marker during SAGD operations

Location: 16-12-70-6W4

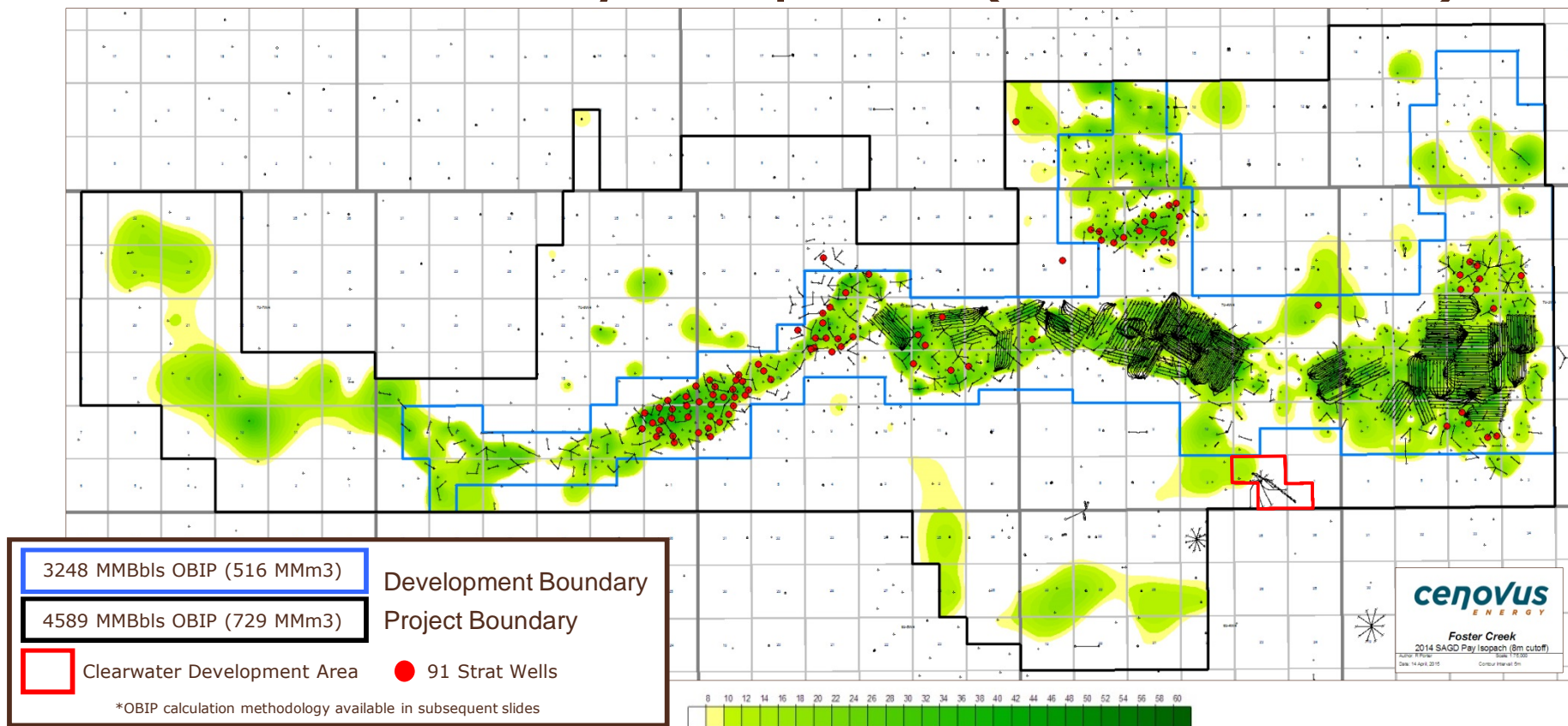


Maps and core

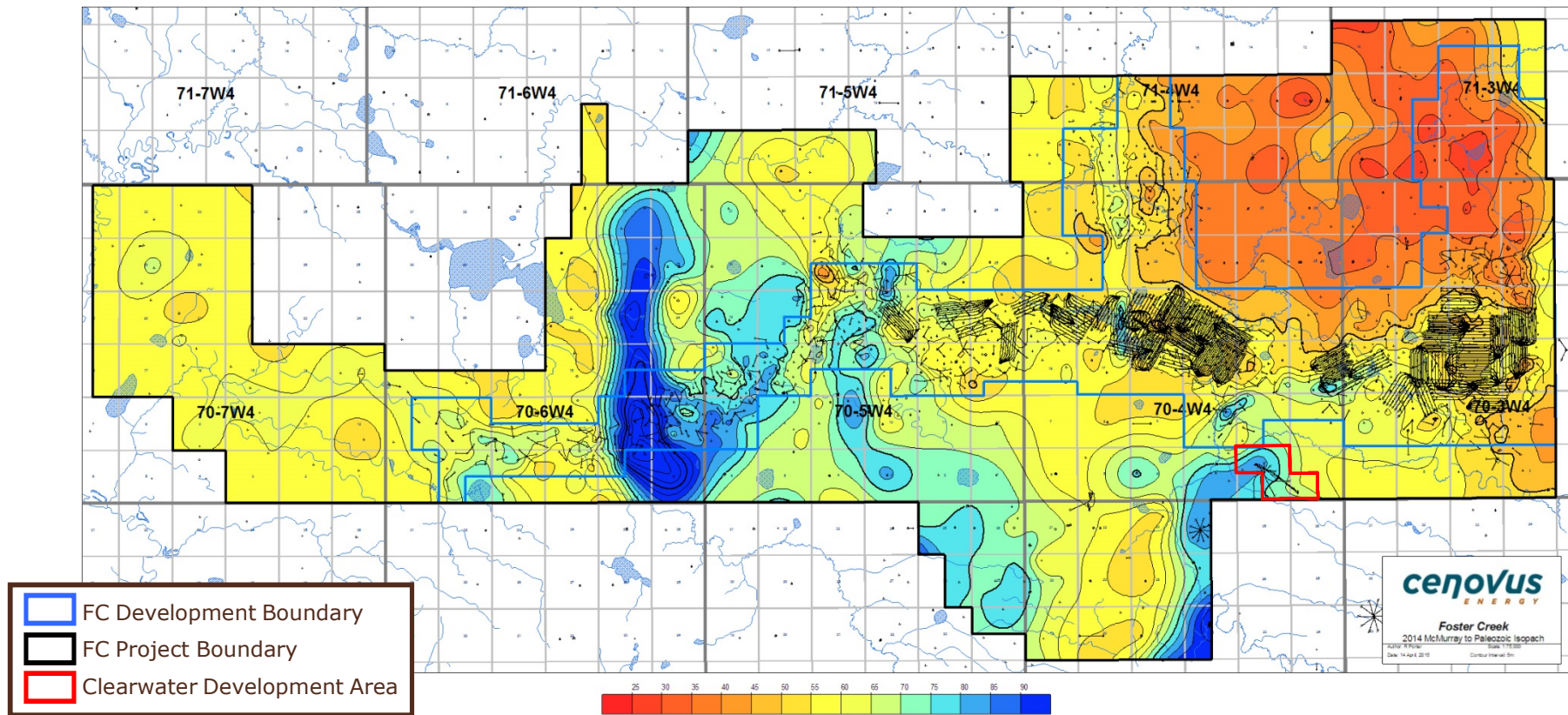
Subsection 3.1.1 – 2, c, d and f)



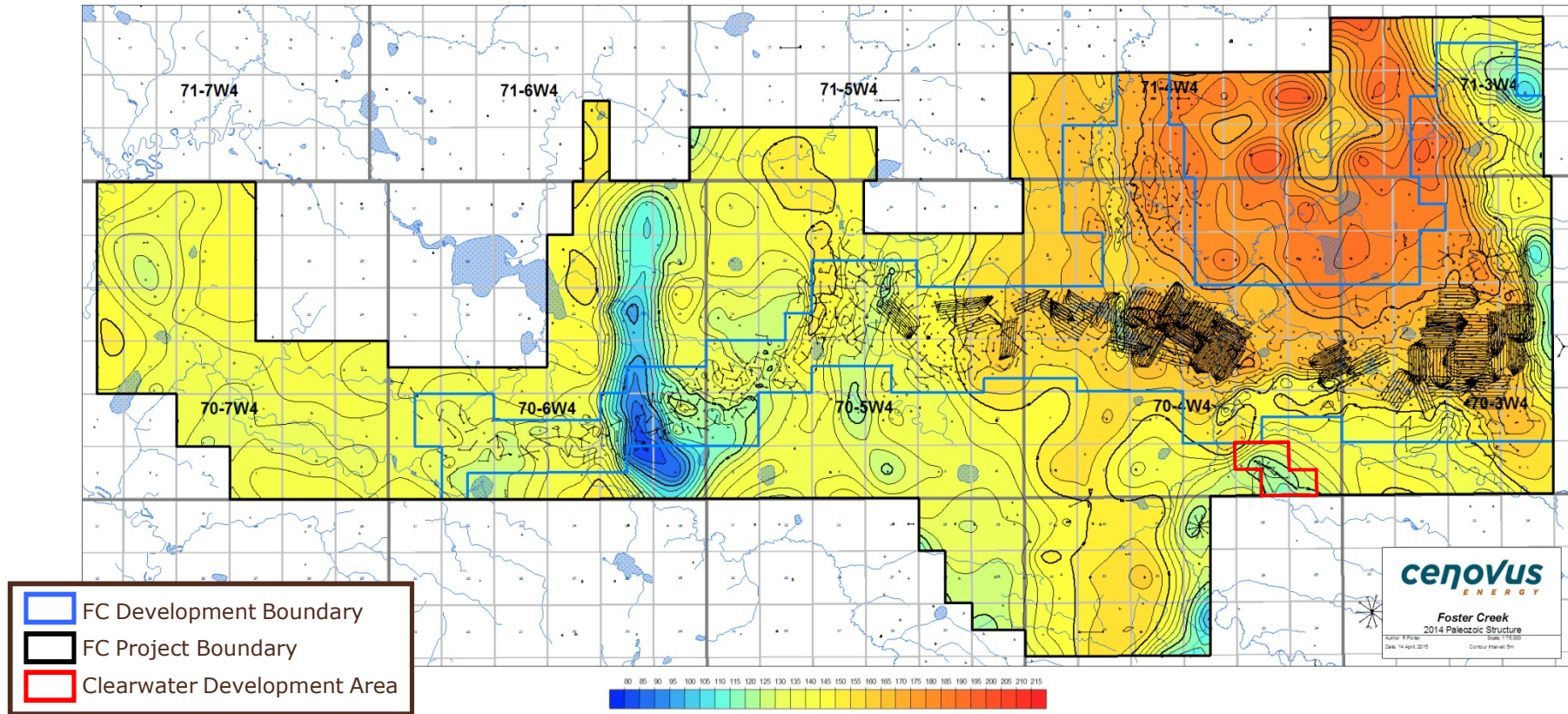
2014 SAGD Pay Isopach (2015 Strats)



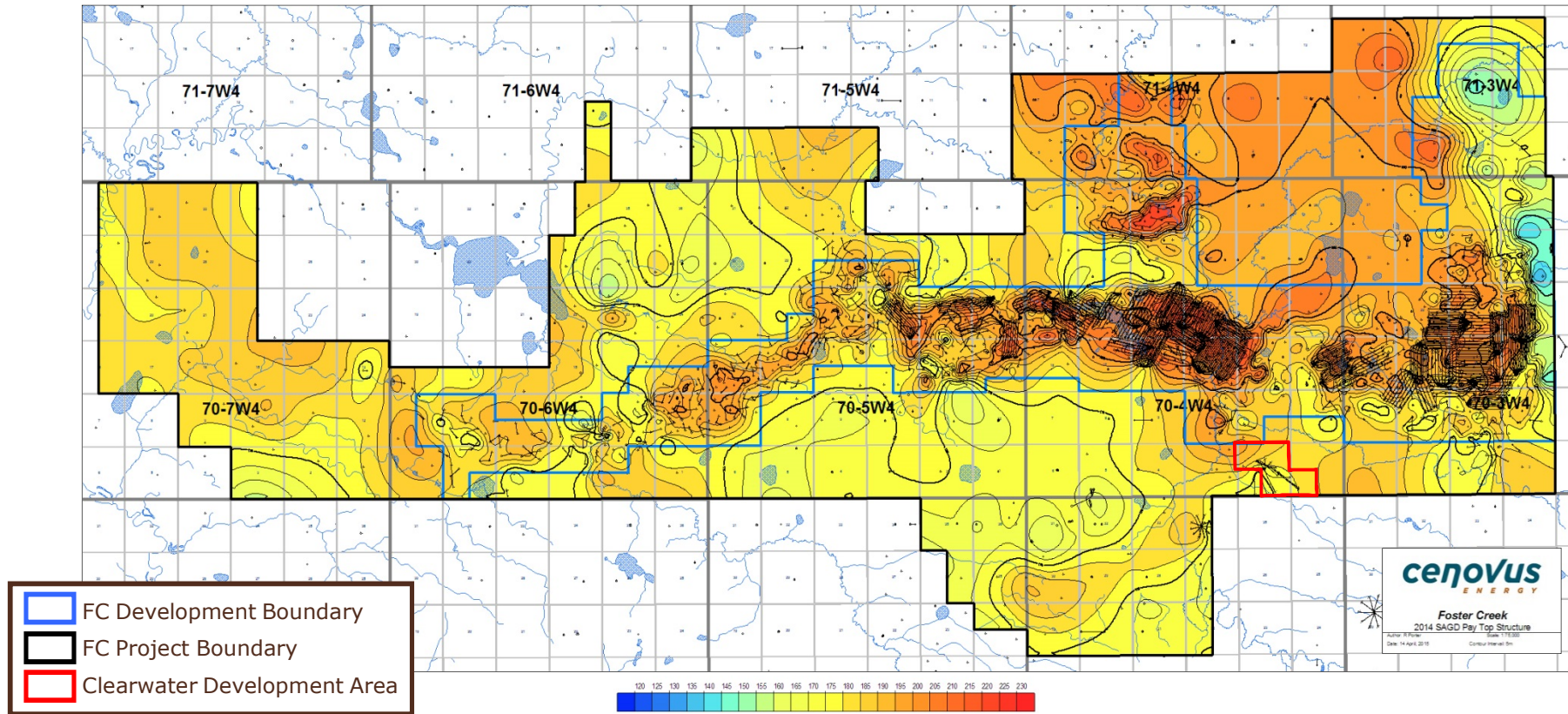
McMurray to Paleozoic Isopach



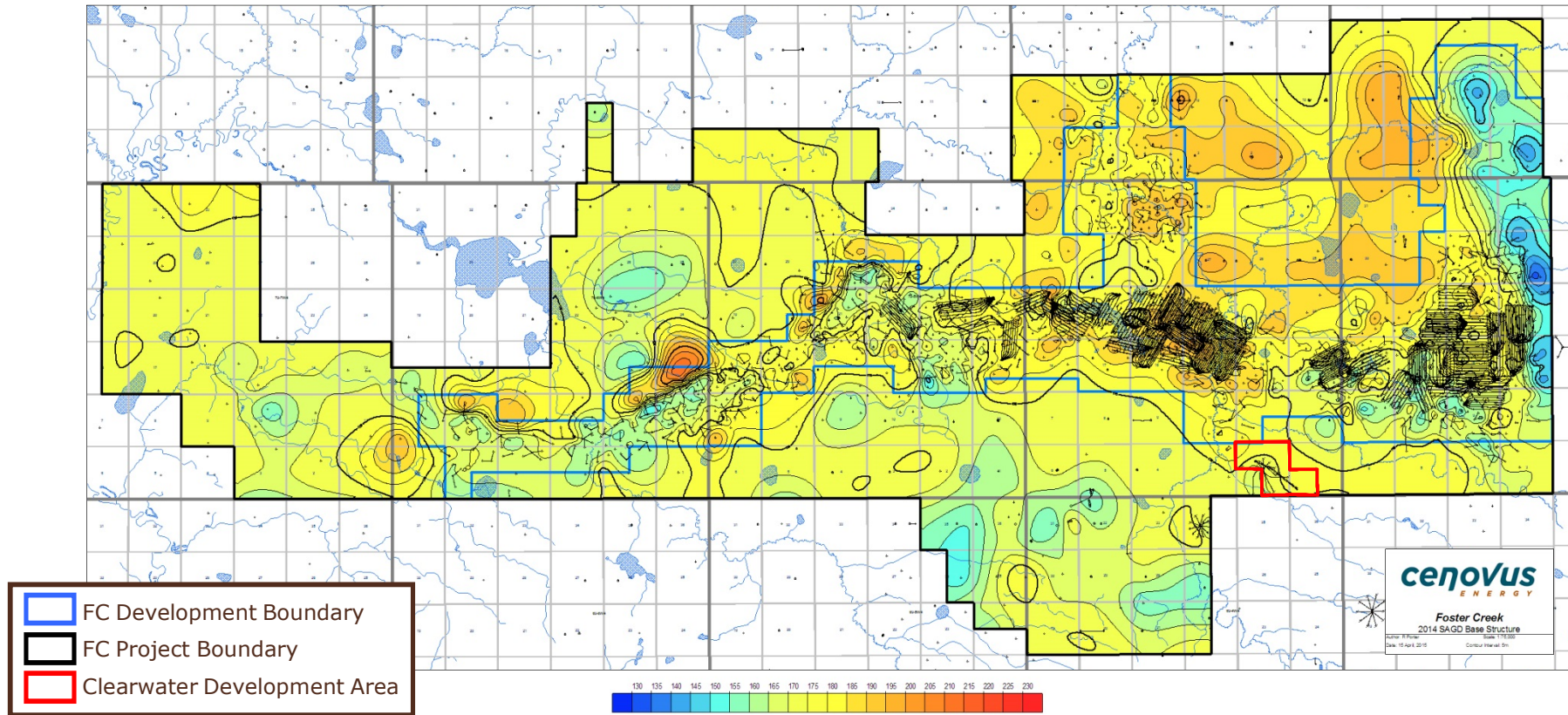
Paleozoic Structure



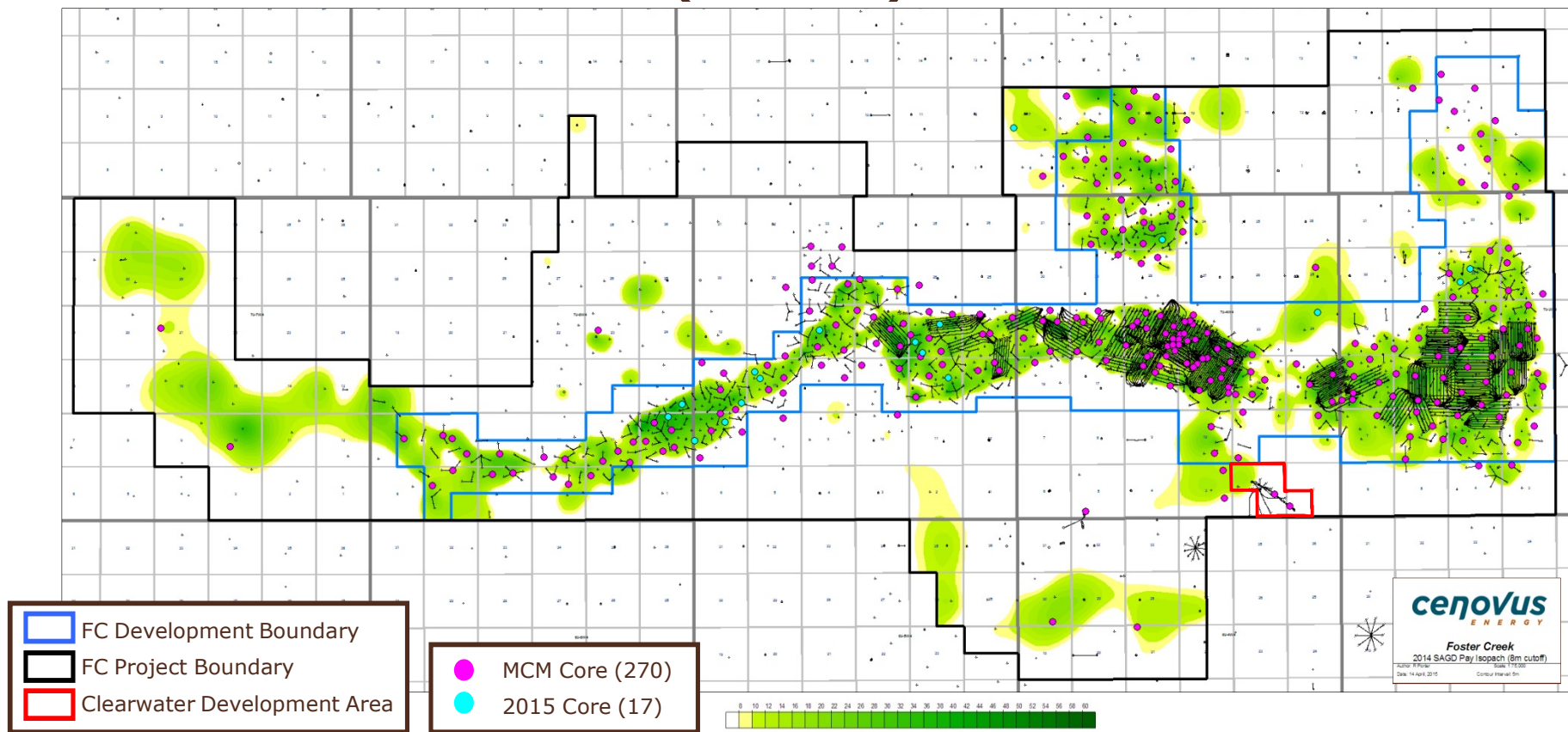
SAGD Pay Top Structure



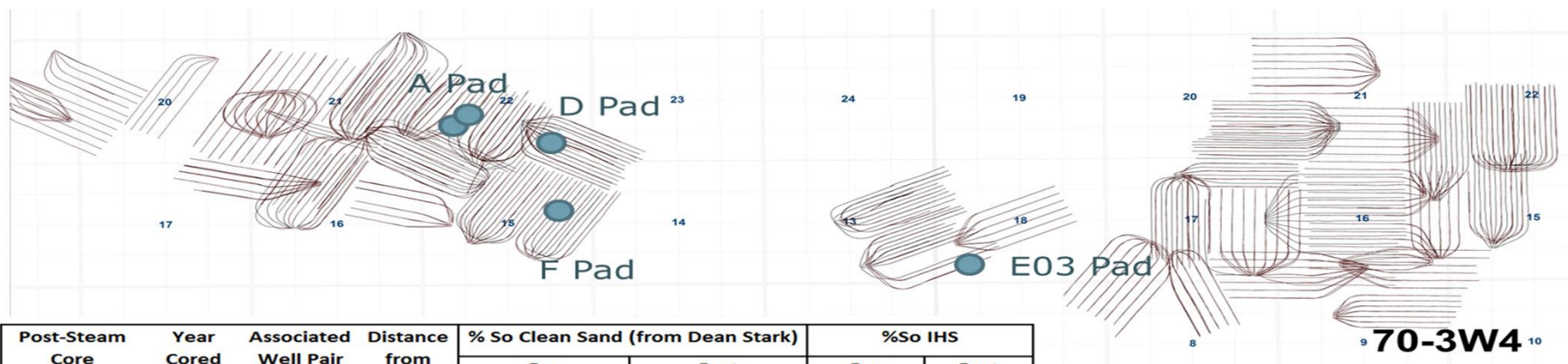
SAGD Base Structure



Cored Locations (2015)



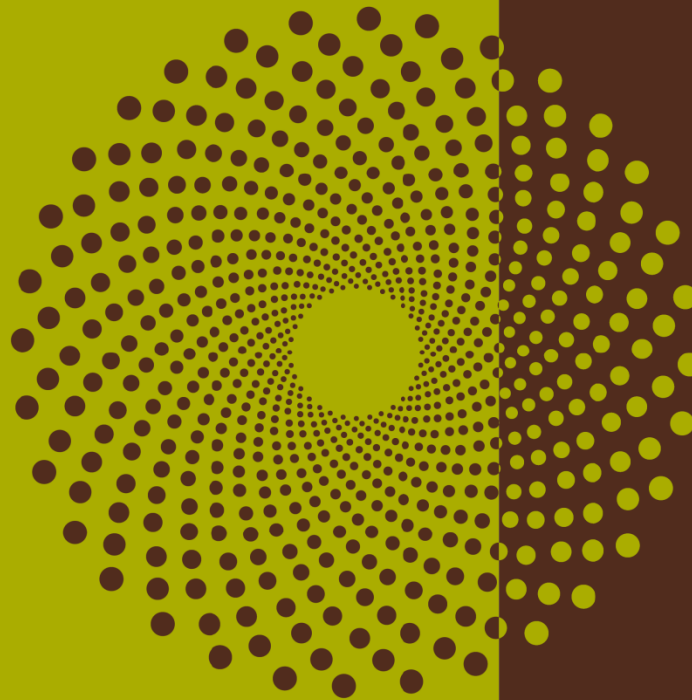
Post-steam core locations



Post-Steam Core	Year Cored	Associated Well Pair	Distance from Well Pair	% So Clean Sand (from Dean Stark)		%So IHS	
				Pre	Post (in steam chamber)	Pre	Post
3A5-22-70-4	2005	A3	10	92	11-26%	No Lats	No Lats
2D2-22-70-4	2010	D21	27	90	1-21%	65-83%	14-60%
5-22-70-4	2011	A3	17	88	3-20%	No Lats	No Lats
2B9-15-70-4	2012	FP4	32	90	2-34%	No Lats	No Lats
D14-18-70-3	2013	E0306	21	N/A	2-26%	N/A	8-80%

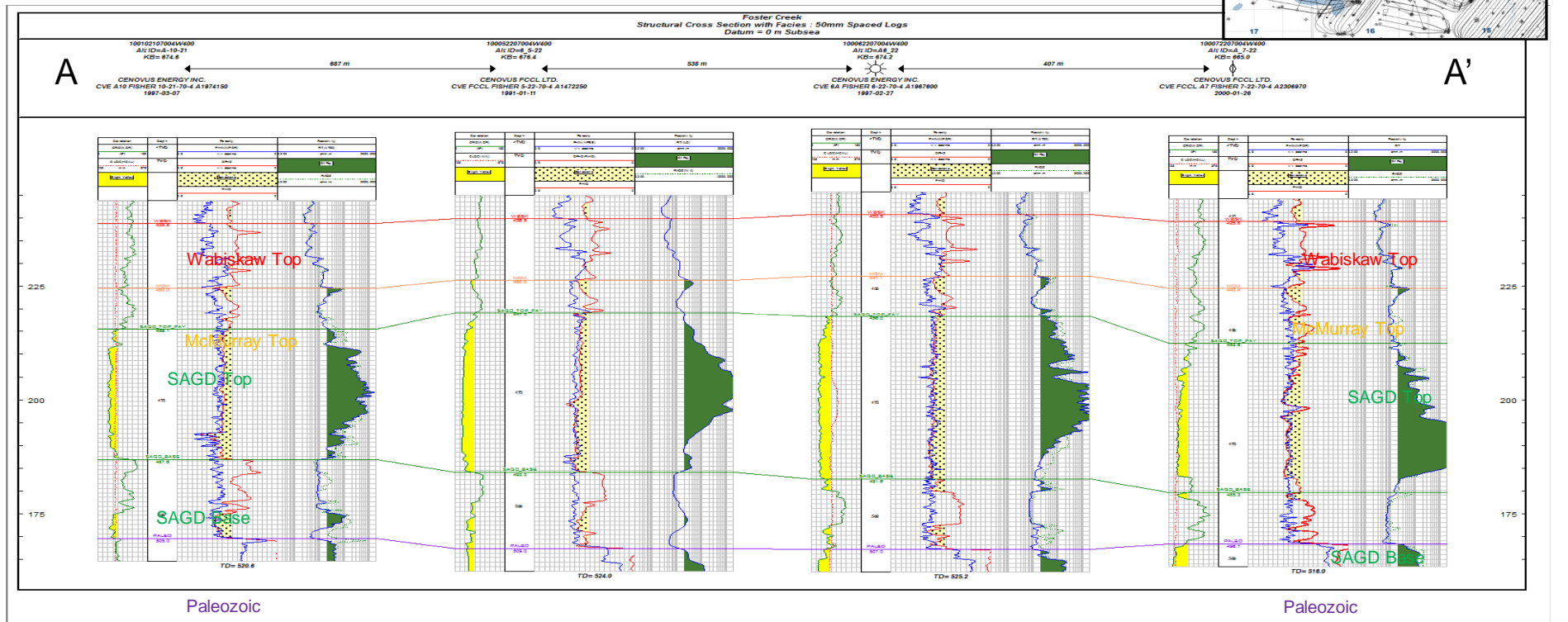
Cross-sections

Subsection 3.1.1 – 2, i)

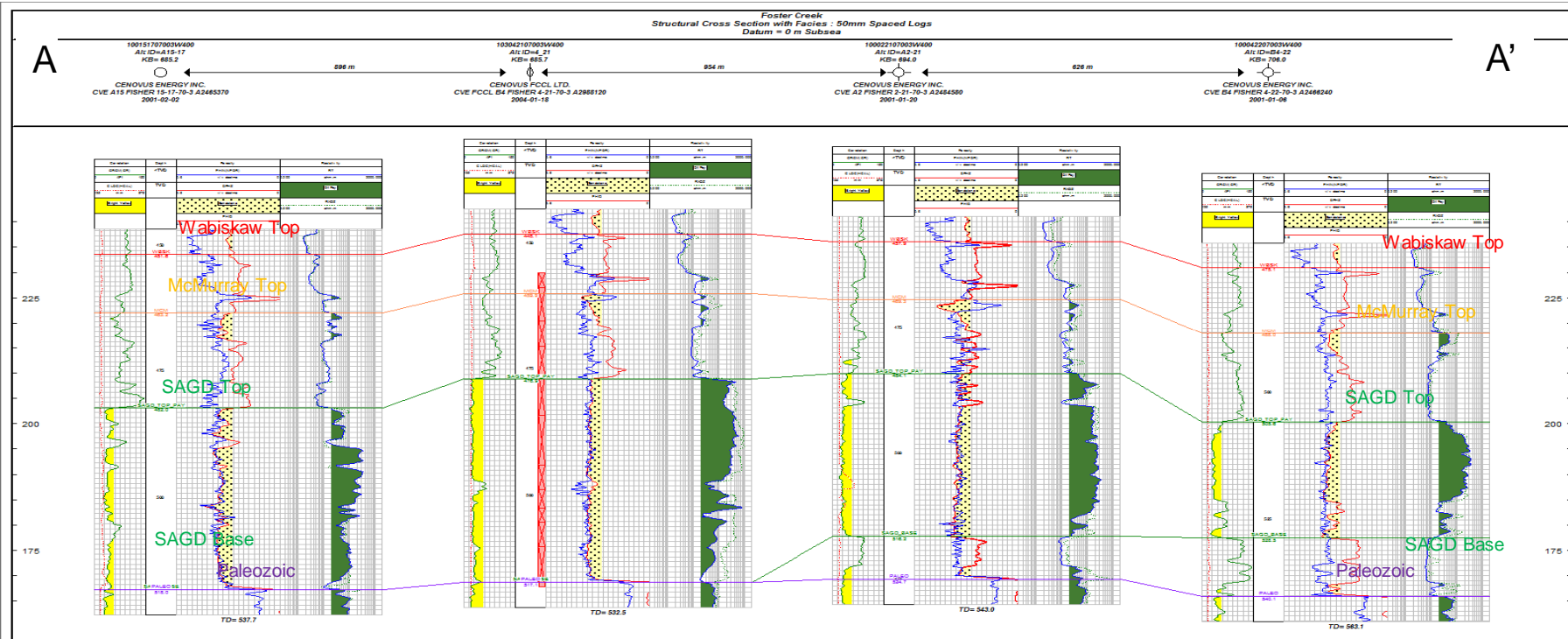
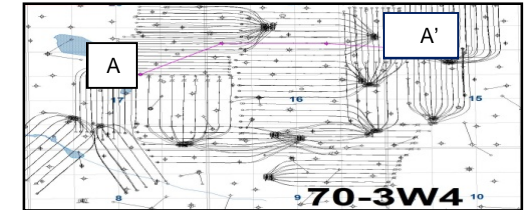


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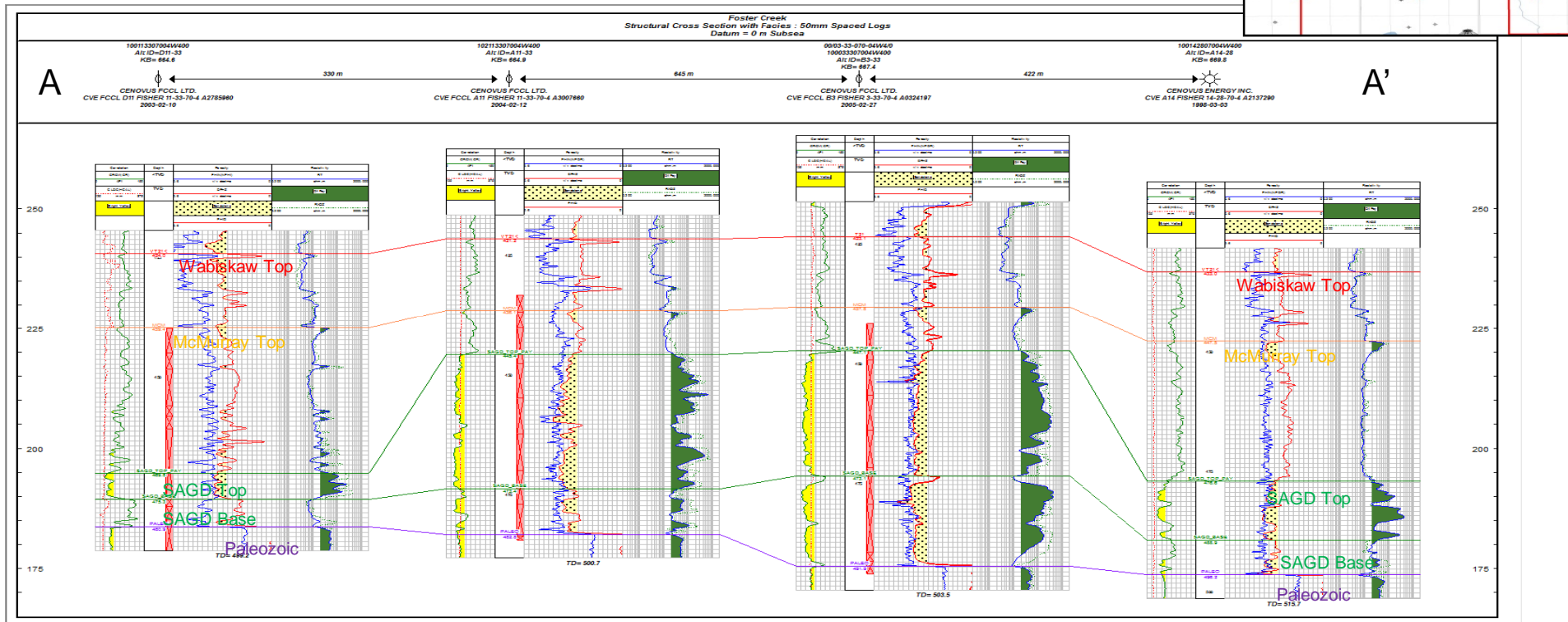
Representative structural cross-section over central area



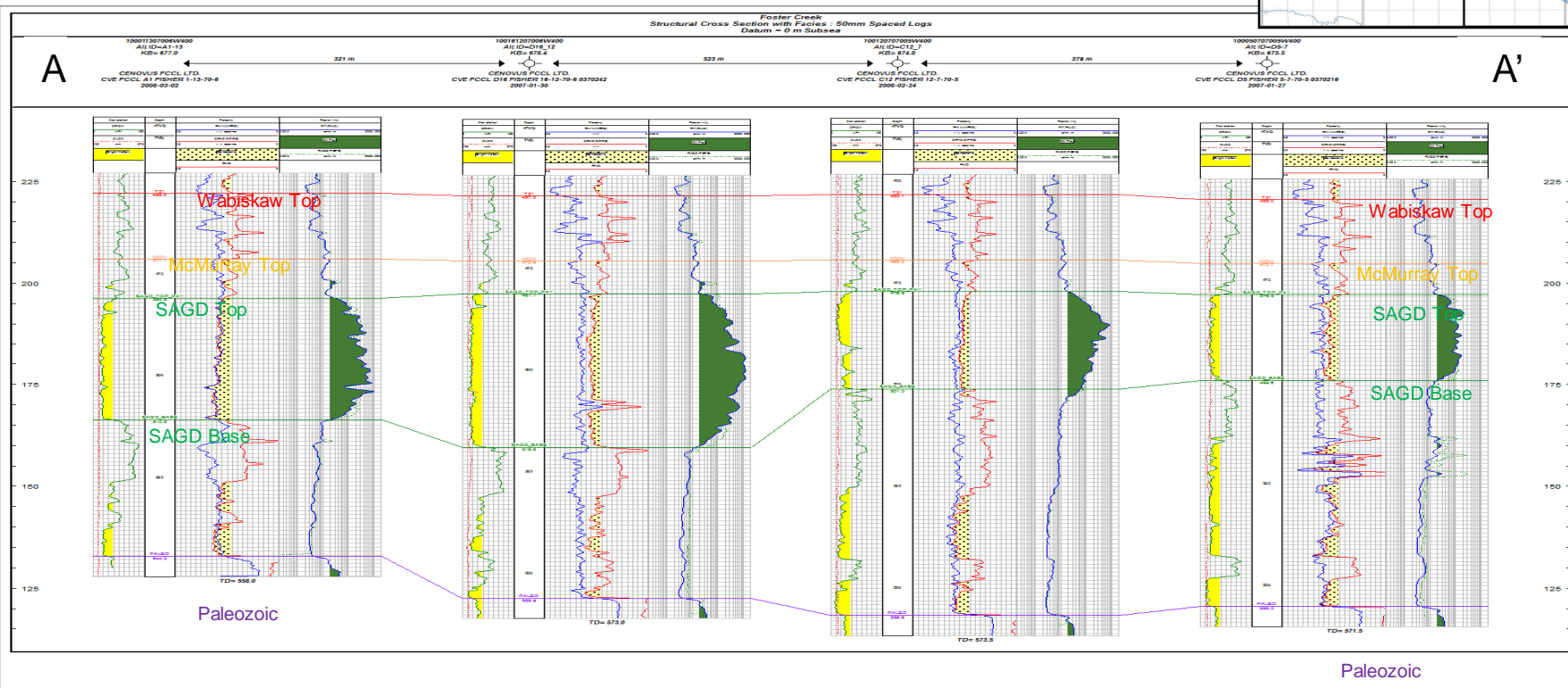
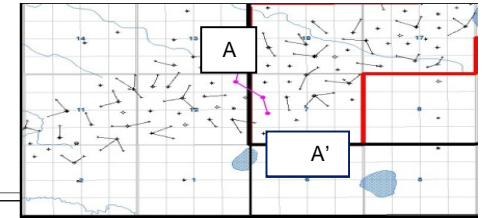
Representative structural cross-section over East area



Representative structural cross-section over North area

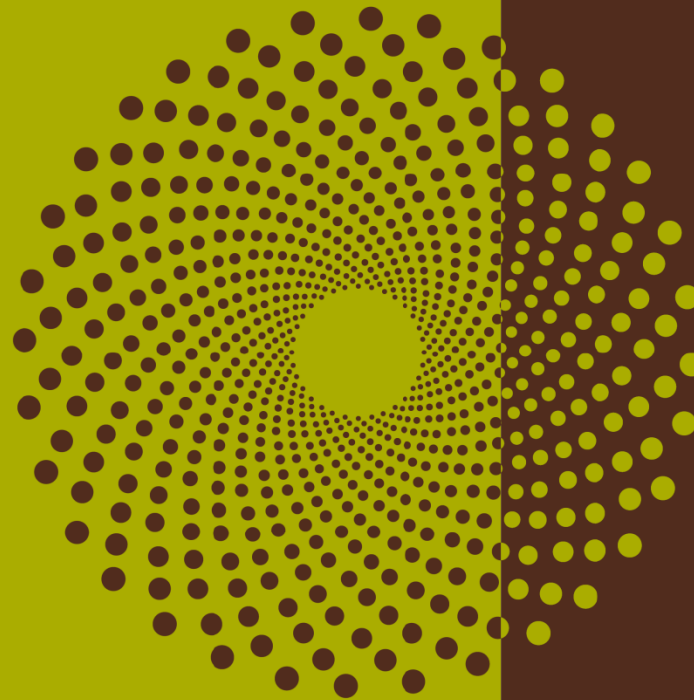


Representative structural cross-section over West area



Geo-mechanical data

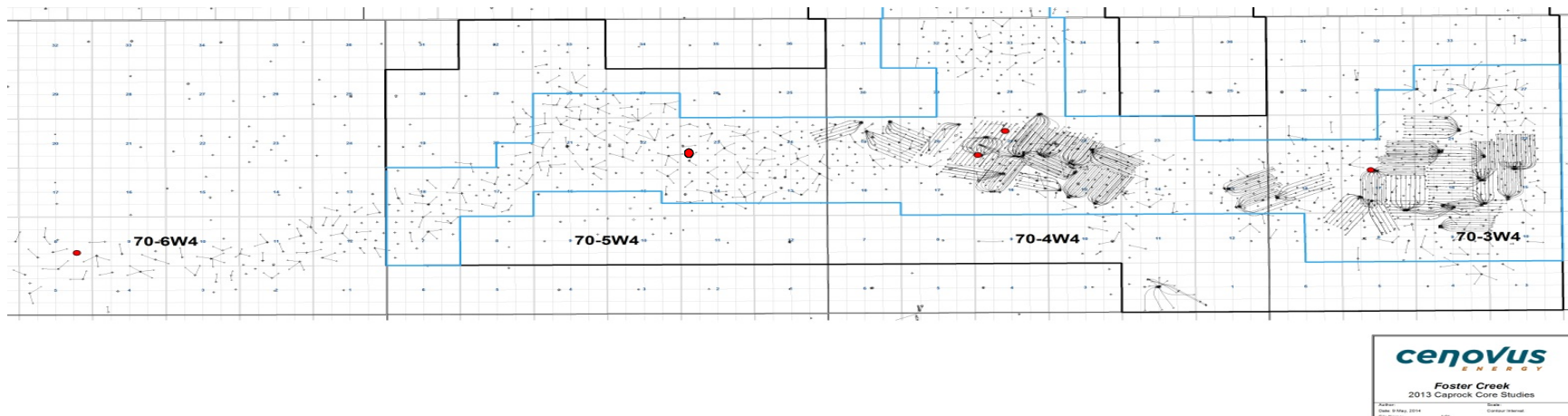
Subsection 3.1.1 – 2, j)



Geomechanical data

Caprock studies continue on Colorado Shale cores 104132107004W400 (JP09), 1021417003W400 (E12W8) and 105112107004W400, and 102052307005W400 (2015)

Mechanical testing of T31 Shale being carried out by Professor Chalaturnyk at University of Alberta on 1AA080807006W400



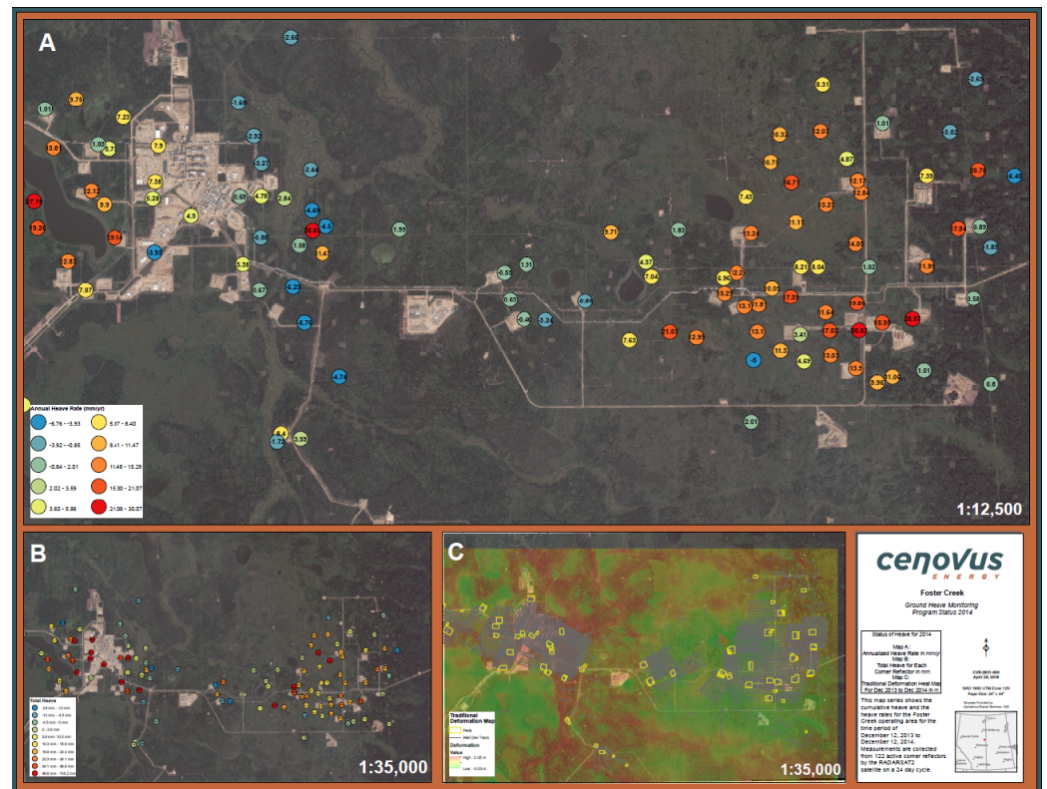
Surface monitoring

Subsection 3.1.1 – 2, k)



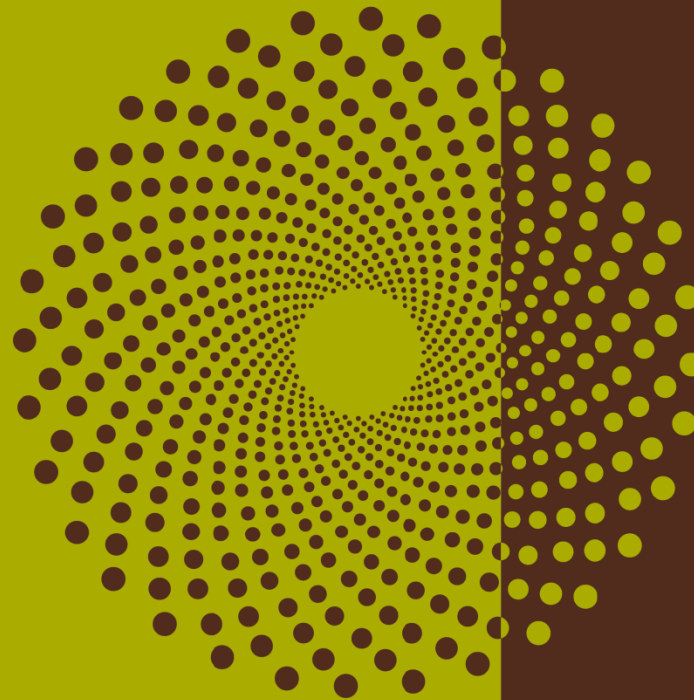
2014 surface heave

Active CRs 122
New installs – west area 14



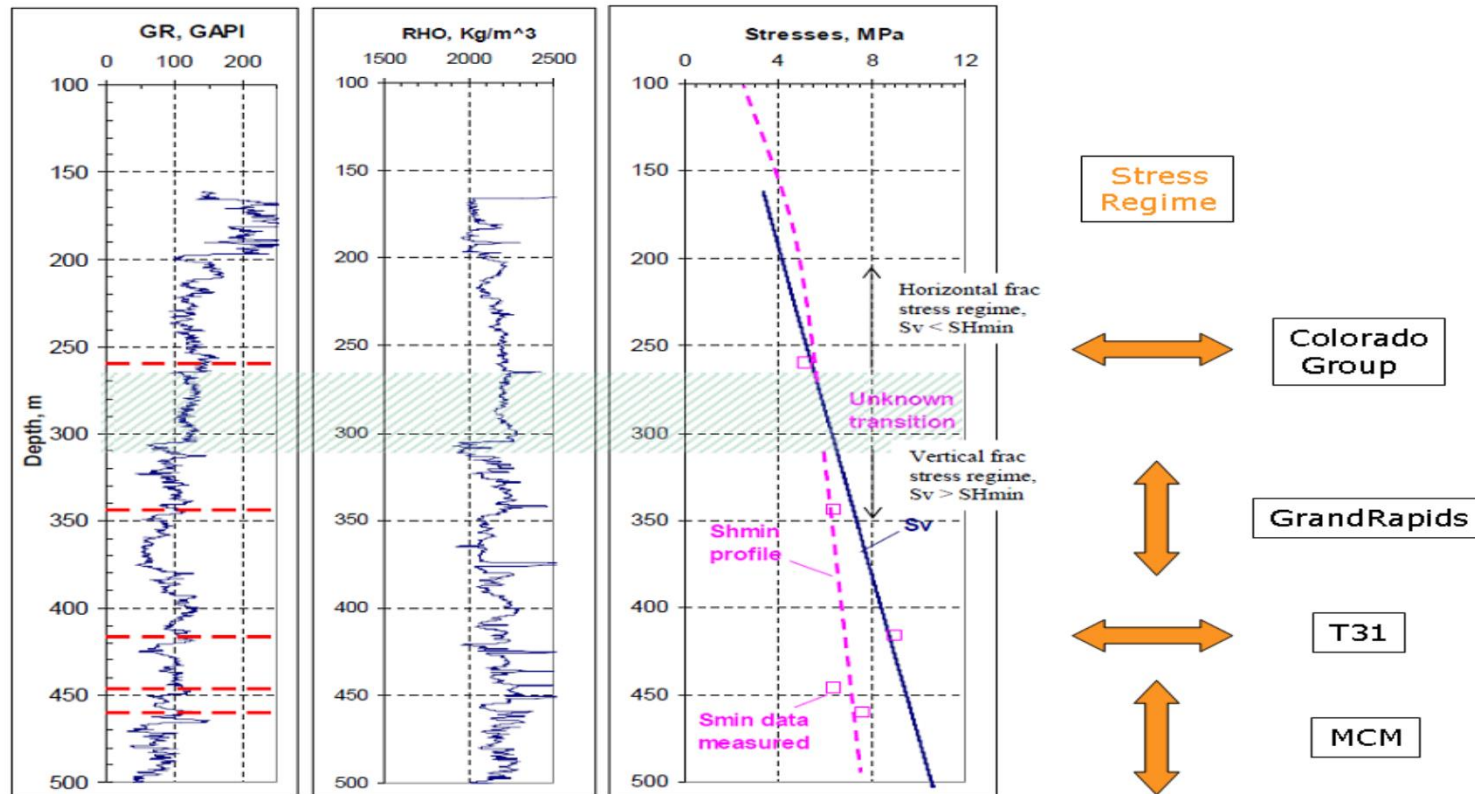
Caprock integrity

Subsection 3.1.1 – 2, m)

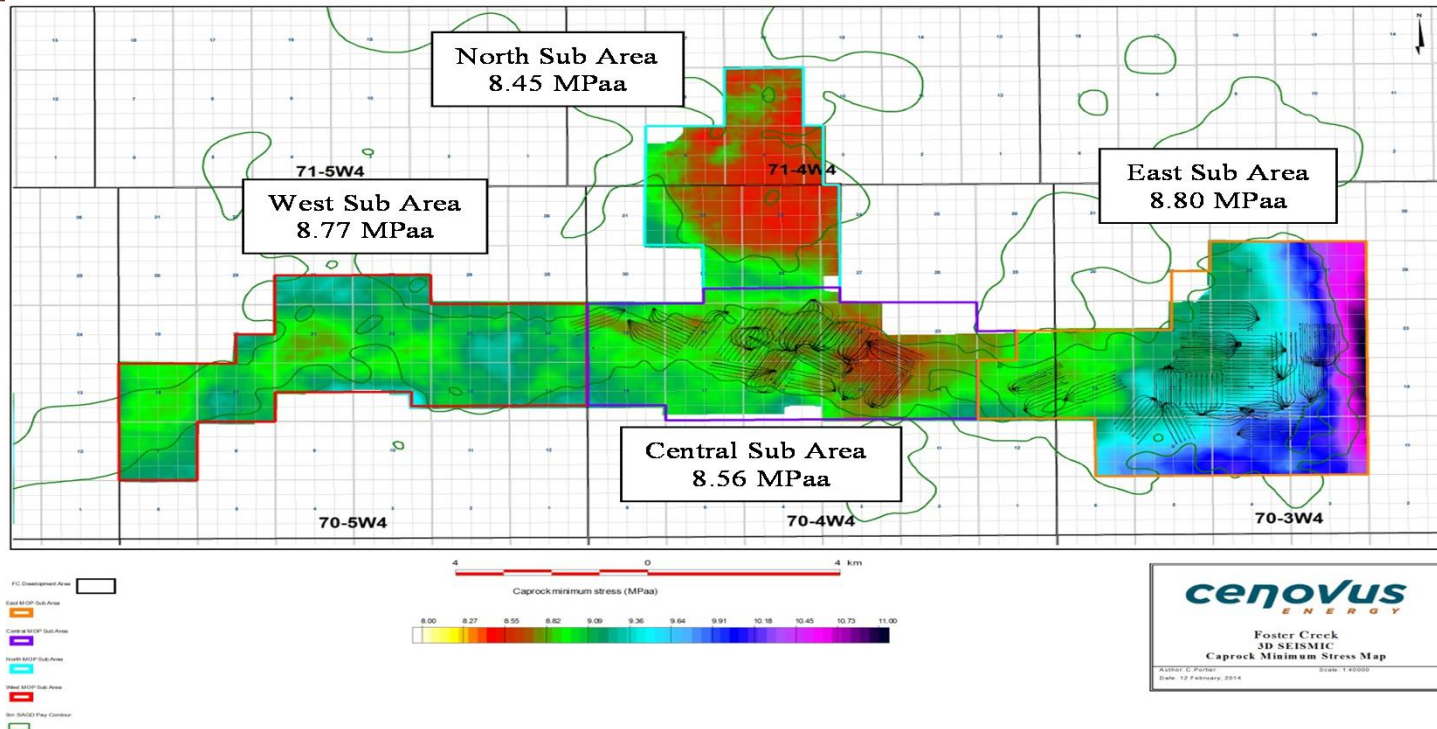


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Minimum in-situ stress profile



Caprock minimum in-situ stress



Minimum in-situ stress values in the caprock vary across the project

Smallest minimum in-situ stress values in each sub-area are shown in the above map

Criteria for determining caprock integrity

Cenovus determines the minimum in-situ stress of the caprock over the project area through mini frac testing and seismic mapping

Minimum in-situ stresses have shown variability across our development area

Current project contains four regions with different approved MOP values

- North – 6.6 MPag
- Central – 6.7 MPag
- West – 6.9 MPag
- East – 6.9 MPag

Operating pressures in the project vary through the various well stages

- steam stimulation/circulation: (5.5 – 6.6 MPa)*
- ramp-up: (3.5 – 5.5 MPa)
- normal operating conditions: (2.0 – 3.5 MPa)

*** - Note that this upper limit is specific to the MOP of each region**

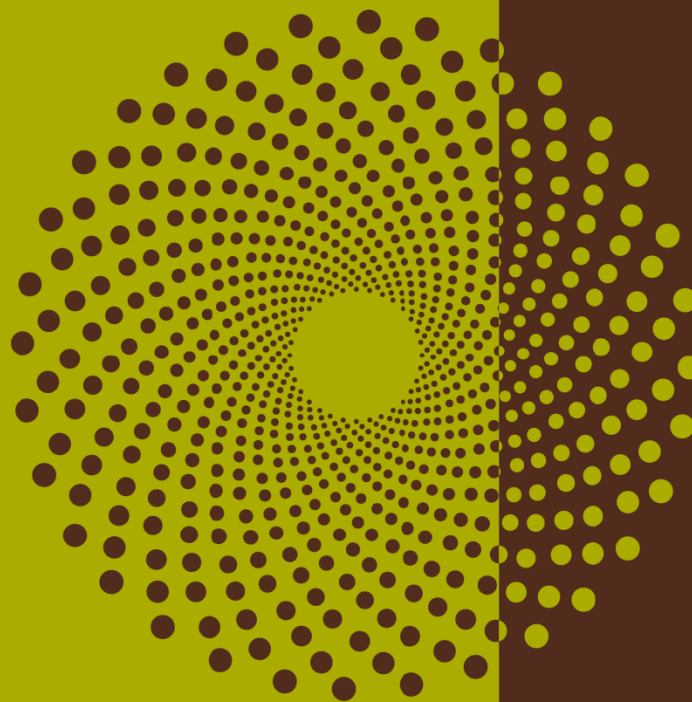
Caprock Monitoring Plans

Cenovus monitors caprock integrity through:

- 1. SAGD injection pressure monitoring**
- 2. Piezometer monitoring in the T31 caprock**
 - Previously 3 locations
 - Added an additional 3 locations in 2015
- 3. Heave monitoring**
- 4. 4D seismic monitoring**

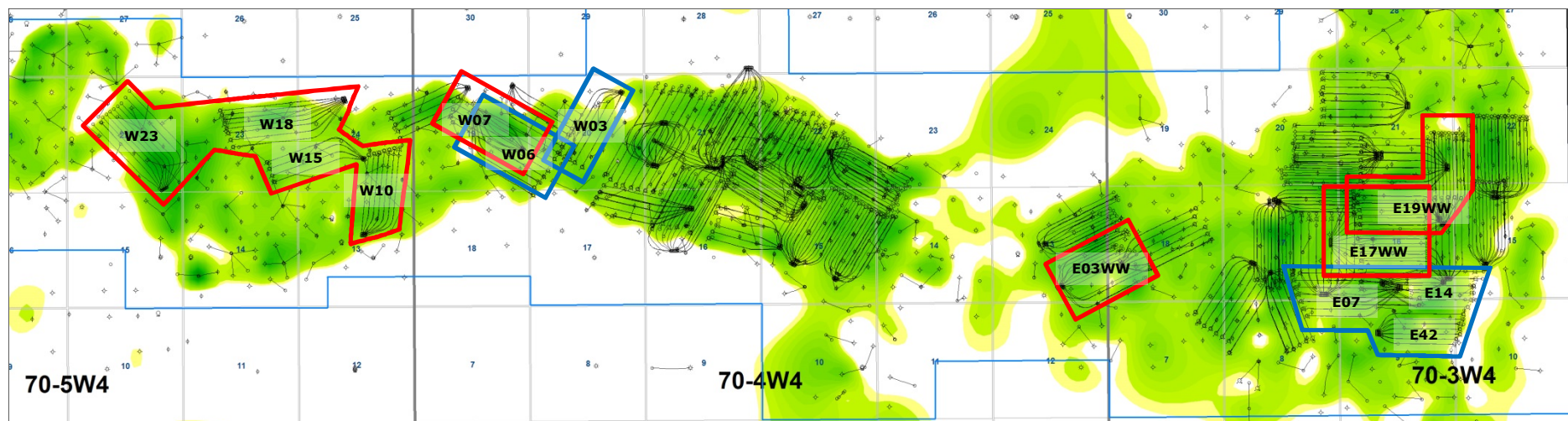
Drilling and completions

Subsection 3.1.1 – 3)





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2014-2015 New SAGD Well Pairs & Infill Drilling



Steam Requirements:

- Phase F steam allocated to new phase F pads
- Existing A-E steam allocated to maintain and optimize reservoir pressures at A-E pads.

 2014-2015 Drilling
 2014-2015 On Production

Re-drills and re-entries

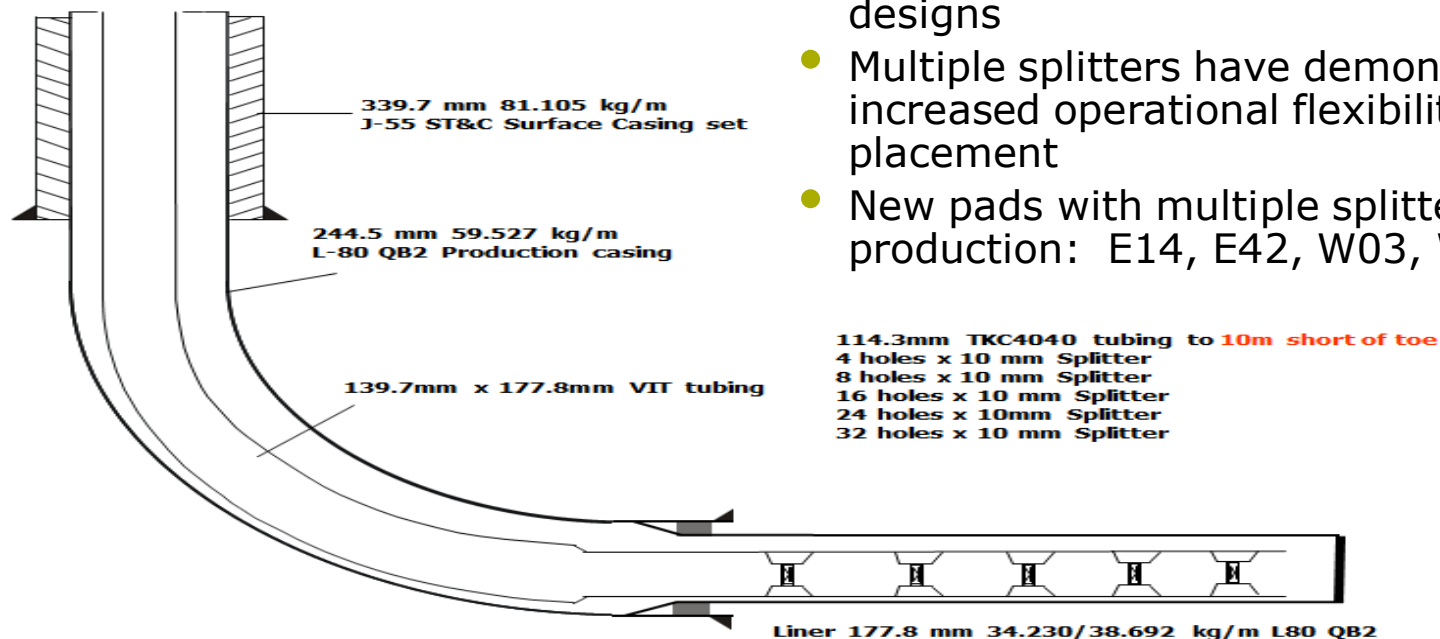
List of re-drill and re-entry wells in Foster Creek since January 1, 2014

*Liner failures caused by steam jetting.

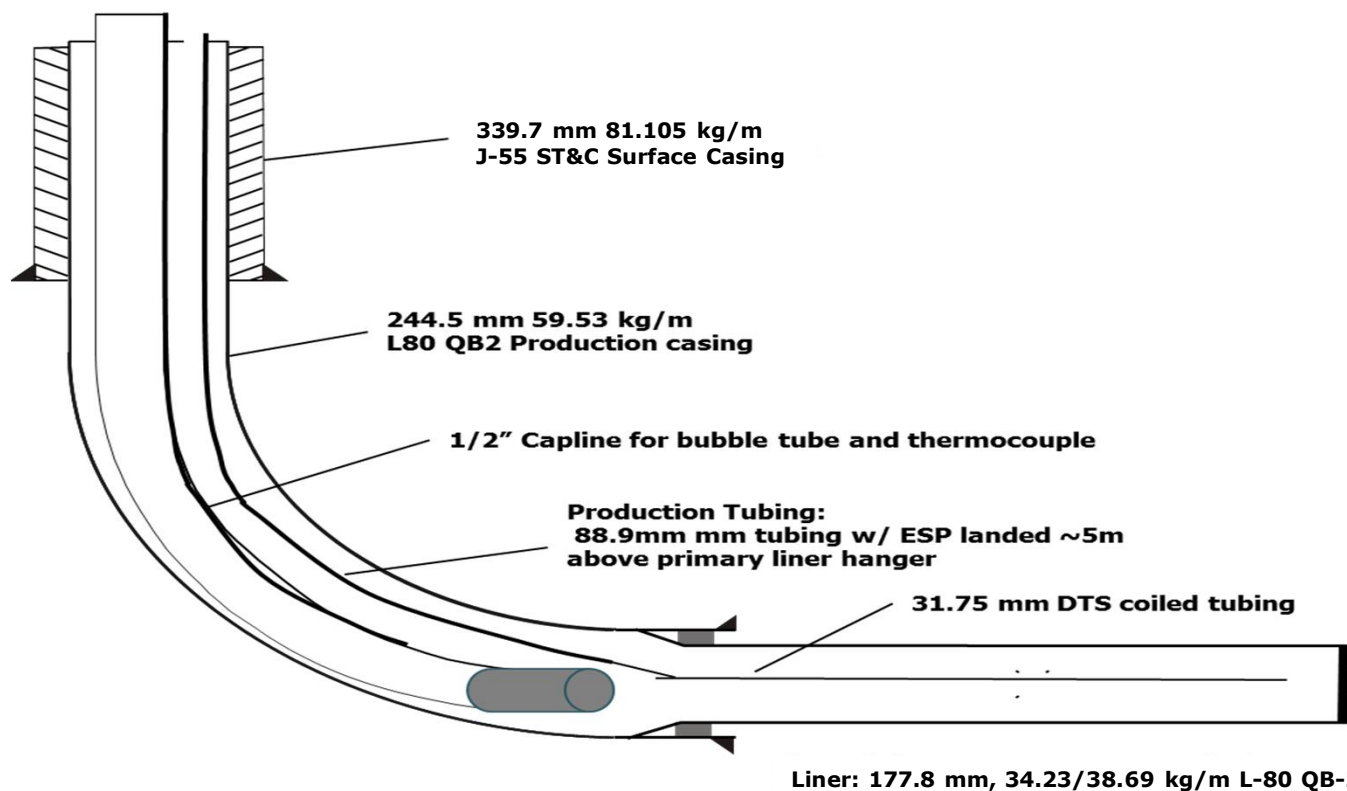
Well	Type	Drill Start	Drill End	Reason for remediation
W02P05-1	Step-out	2014-01-14	2014-01-29	Primary Liner failure in the Hz slotted section of the well
E12P06-1	Step-out	2014-04-16	2014-04-29	Intermediate casing failure
E16P05-1	Step-out	2014-04-20	2014-05-02	Primary Liner failure in the Hz slotted section of the well
E12P04-1	Step-out	2014-04-30	2014-05-16	Intermediate casing failure
E08P04	Re-entry	2014-05-21	2014-05-26	Primary Liner failure in the Hz slotted section of the well
E25P05	Re-entry	2014-05-31	2014-06-06	Primary Liner failure in the Hz slotted section of the well
E04P01-1	Step-out	2014-05-31	2014-06-12	Primary Liner failure in the Hz slotted section of the well
E24P05-1	Step-out	2014-06-14	2014-06-22	Primary Liner failure in the Hz slotted section of the well
E12P07-1	Step-out	2014-06-24	2014-07-04	Intermediate casing failure
E15P11-1	Step-out	2014-07-13	2014-07-23	Primary Liner failure in the Hz slotted section of the well
E03P01-1	Step-out	2014-07-14	2014-07-24	Primary Liner failure in the Hz slotted section of the well
E15I10	Re-entry	2014-08-06	2014-08-13	Re-develop to access new reserves
E19P11	Re-entry	2014-08-18	2014-08-26	Primary Liner failure in the Hz slotted section of the well
E25P01	Re-entry	2014-10-28	2014-11-07	Primary Liner failure in the Hz slotted section of the well
E25I01-1	Step-out	2014-11-10	2014-11-23	Primary Liner failure in the Hz slotted section of the well
E08P01	Re-entry	2014-11-18	2014-11-24	Primary Liner failure in the Hz slotted section of the well
E21I01-1	Step-out	2014-11-28	2014-12-08	Re-develop to access new reserves
E12I09-1	Step-out	2014-12-08	2015-01-16	Re-develop to access new reserves
E12P08-1	Step-out	2015-01-18	2015-01-28	Primary Liner failure in the Hz slotted section of the well
E24P06-3	Step-out	2015-02-01	2015-02-11	Primary Liner failure in the Hz slotted section of the well

Standard injector completion

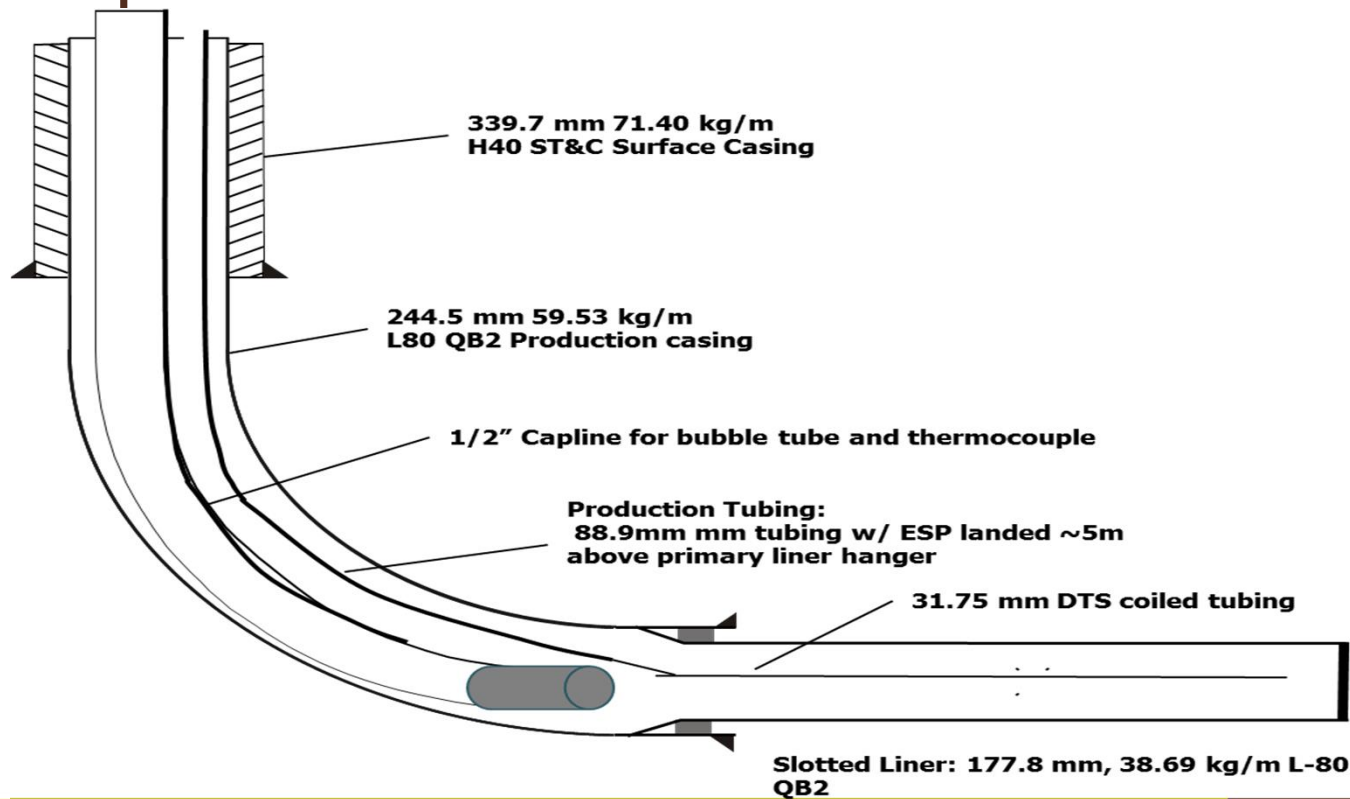
- Majority of well pairs at Foster Creek have been started up with single splitter injector designs
- Multiple splitters have demonstrated increased operational flexibility with steam placement
- New pads with multiple splitter designs on production: E14, E42, W03, W06, W08



Standard producer ESP completion



Standard Wedge Well™ technology completion



Artificial lift

Subsection 3.1.1 – 4)



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Artificial lift

Electric submersible pumps (ESPs)

- all operating SAGD pairs (~ 190 producers) are currently equipped with ESPs. Rod pumps were used previously for wells with difficult start-up.

Rod pumps

- 34/98 operating wells utilizing Wedge Well™ technology are equipped with rod pumps
- rod pumps at Foster Creek can range from about 0 – 350 m³/d

	ESPs	Rod pumps
Turn down (m ³ /d)	120	0
Max. rate (m ³ /d)	1200	350
Max. operating temp (°C)	218	200+
Number of pumps	254	34
Average run life (months)	12.7	5.0

Artificial lift – new technology

ESPs

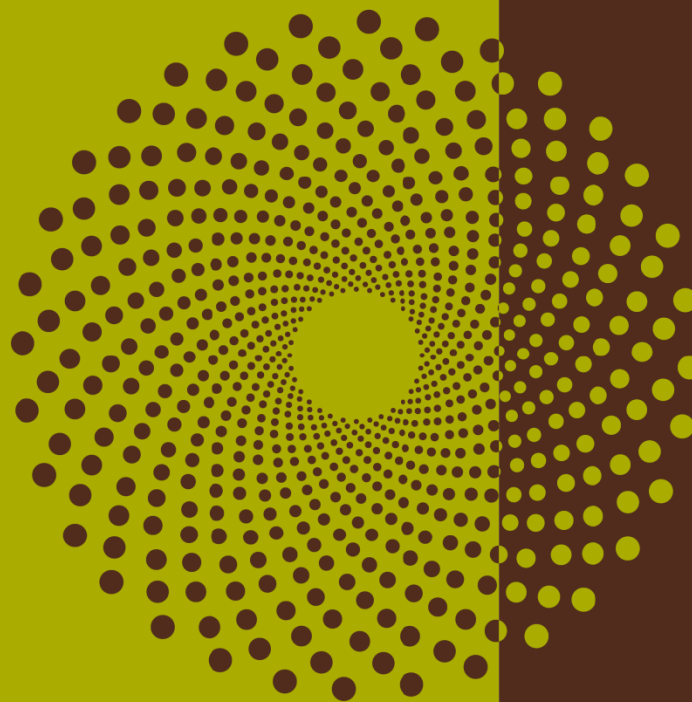
- Working with vendors to increase runtime.

Rod pumps

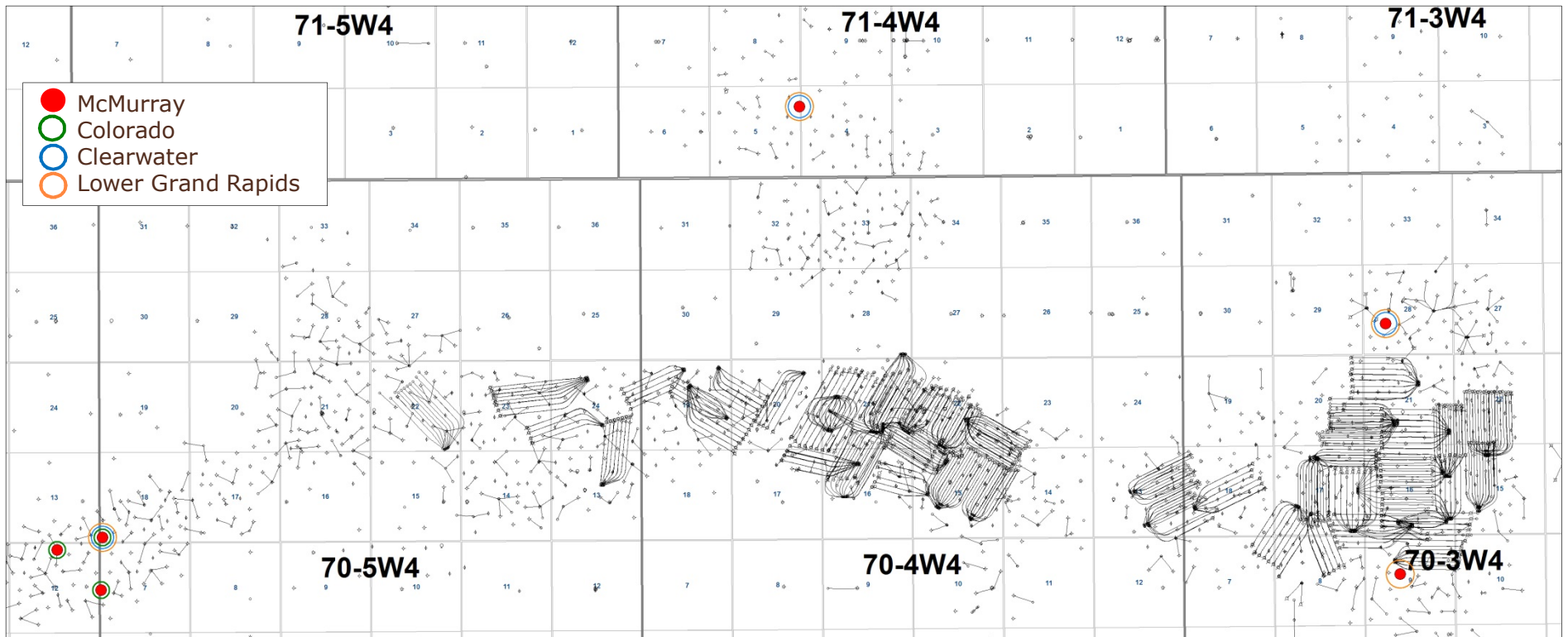
- previously utilizing Wedge Well™ technology
- higher maintenance pump than ESPs, have had problems with sand bridging and can result in slower ramp up to peak production
- All new Wedge Well™ pads to be produced via ESP

Instrumentation in wells

Subsection 3.1.1 – 5)



Foster Creek 2015 piezometer locations



Piezometer details

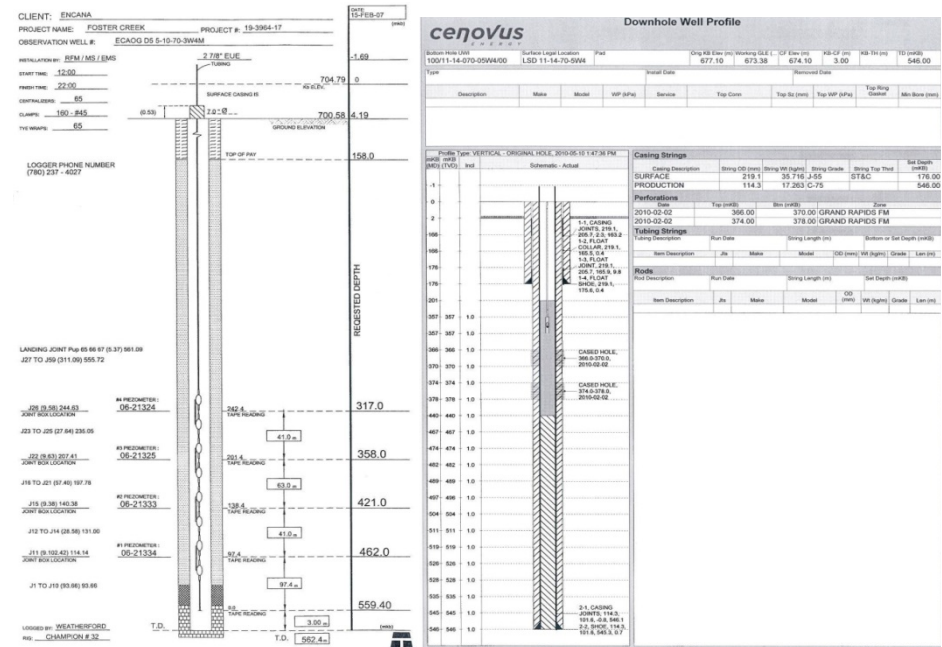
Three installation types:

Cemented tubing - vibrating wire piezometers mounted on tubulars and cemented in place (14 wells)

Hanging wire – pressure / temperature gauges hung from the wellhead to about 10-15m above perforations (9 wells)

Cemented casing – High temperature Optical pressure sensors strapped and cemented to the production casing (29 wells)

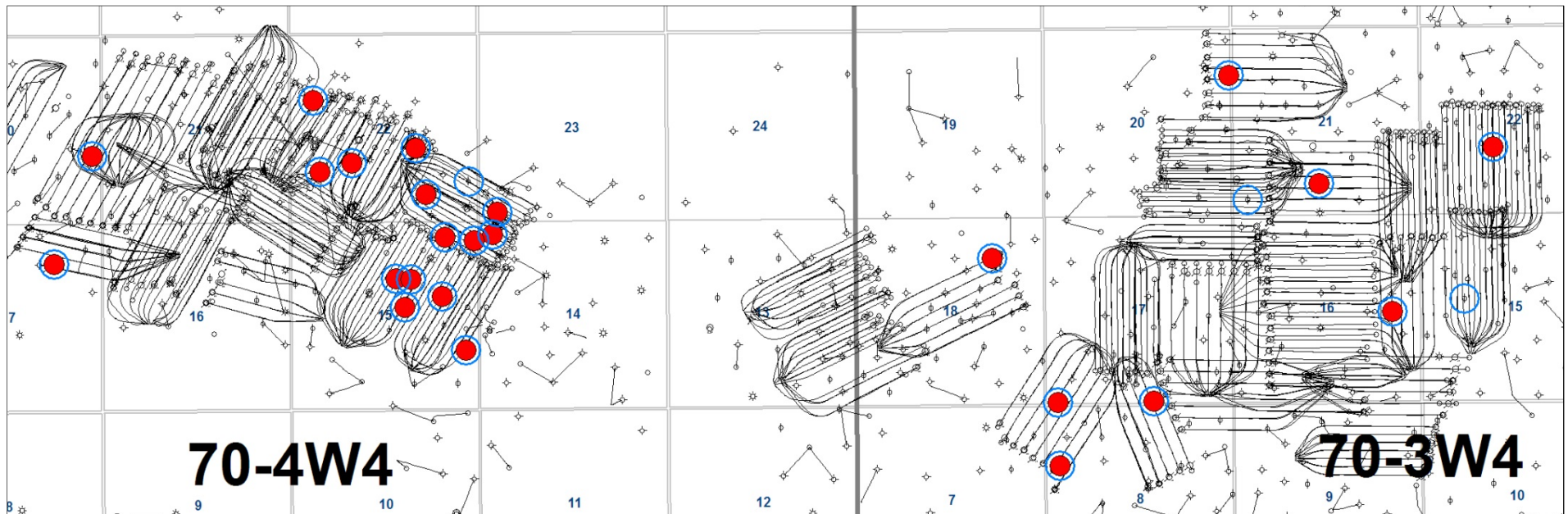
Six new McMurray piezometers installed



Foster Creek temperature and RST data

24 observation wells logged to acquire temperature data

27 observation wells logged to acquire RST data



- Wells selected for Temperature logging
- Wells selected for RST logging

Instrumentation in SAGD wells

SAGD steam injector

- blanket gas for pressure measurement

SAGD producer

- ½" capline strapped to tubing for bubble tubes and single point thermocouple
- Distributed temperature sensing (DTS) strings installed in all new wells

SAGD using our patented Wedge Well™ technology

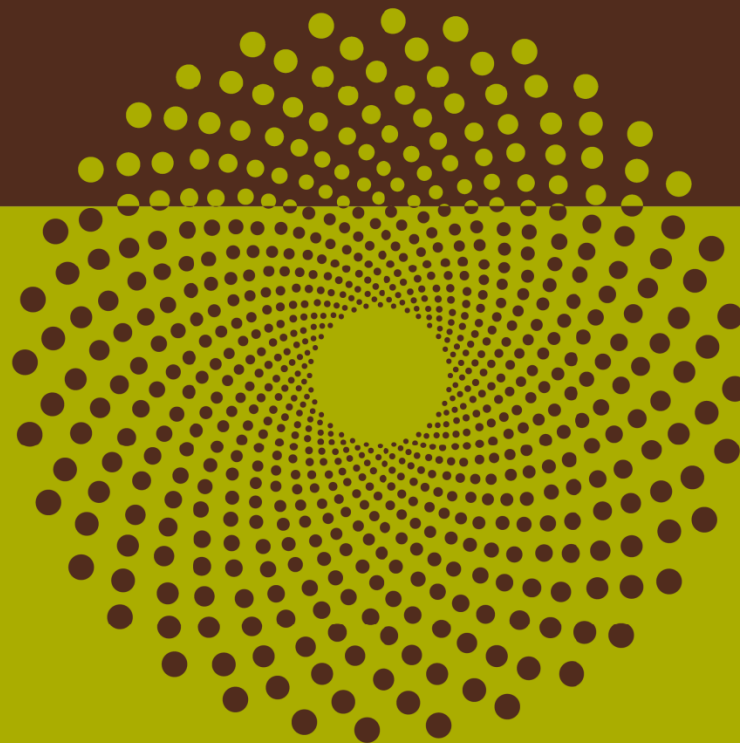
- no downhole instrumentation with rod pumps
- new wells with ESPs to be equipped with ½" capline strapped to production tubing string to measure pressure and temperature

* Schematics can be seen in subsection 3.1.1 – 3 c)

Subsection 3.1.1 – 5 c) and d) – instrumentation data

**Requirements under Subsection 3.1.1 5c) and d) are
located in the Appendix**

Wellbore Integrity Update



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Well Integrity – Updates

1. Intermediate Casing Failures:

- Measured by pressure tests
- Concentrated within the Joli Fou but have been noted elsewhere in the Colorado Shale Group, 200-300m SS

2014 Intermediate Casing Failures – all CLOSED

- E12P06; E12P04; GP6; E12P07; E24P02; E12I06

Q1 2015 Intermediate Casing Failures - CLOSED

- E20P06

2014 Well Integrity – Actions

➤ Strain monitoring wells installed

- Baseline data in non-thermally affected zones
 - 1AB/03-23-070-05W4/00 (W20 Pad)
 - 1AD/05-23-070-05W4/00 (W20 Pad)
 - 100/05-28-070-03W4/00 (E26 Pad)

➤ Modelling, geo-mechanical lab testing, core sampling

➤ Routine Monitoring

- Scraper/gauge ring runs

2014 Well Integrity – Actions

➤ Joint Industry Projects

- Thermal Well Casing Connection Evaluation Protocol (TWCCEP)
- Synergistic Impacts of Thermal-Mechanical Loading & Environmental Corrosion Cracking on Tubular Materials for Thermal Wells
- NSERC/Foundation CMG Industrial Research Chair in Reservoir Geomechanics for Unconventional Resources

Well Integrity – Updates

2) Surface Casing Vent Flows: (no steam)

Well	Action	Status
AP2-2	Repaired	Producing
CP33-1	Repaired	Testing
E12P03	Repaired	Producing
E24P06-1	Repaired	Monitoring

➤ **SWS investigation on-going**

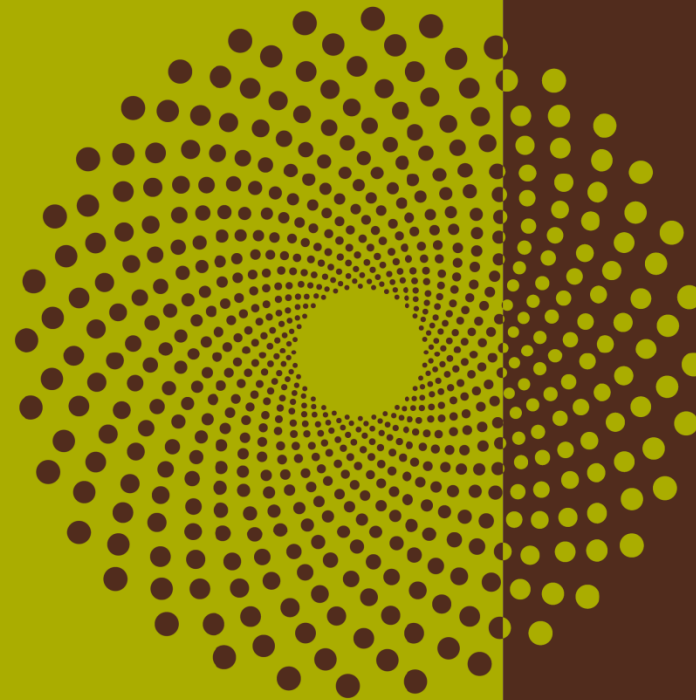
Well Integrity – Updates

3) Surface Casing Corrosion:

Corrosion Location	Status
Surface Casing Exterior	Mitigation on-going
Surface Casing Interior / Intermediate Casing Exterior	Investigation on-going
Pack-Off	Investigation on-going

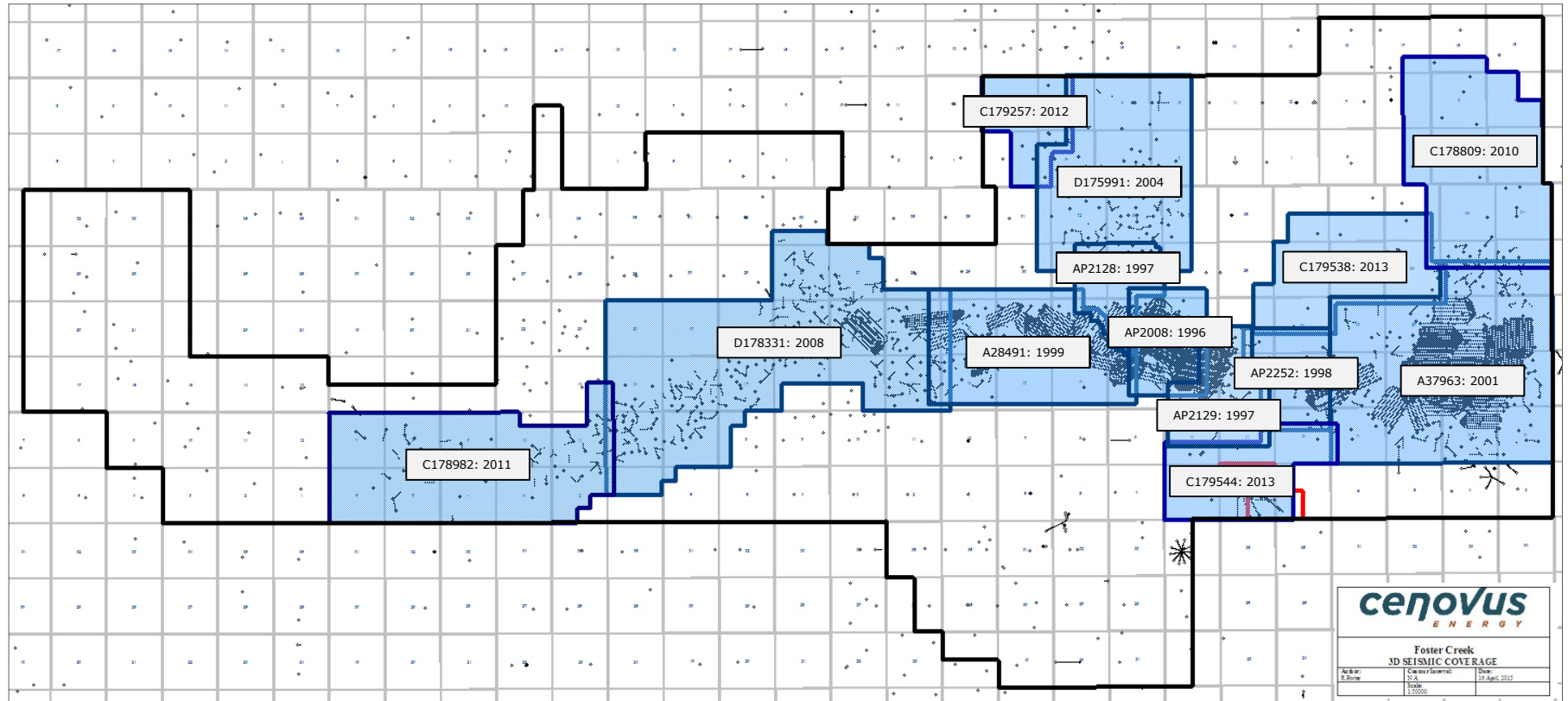
4D seismic

Subsection 3.1.1 – 6)

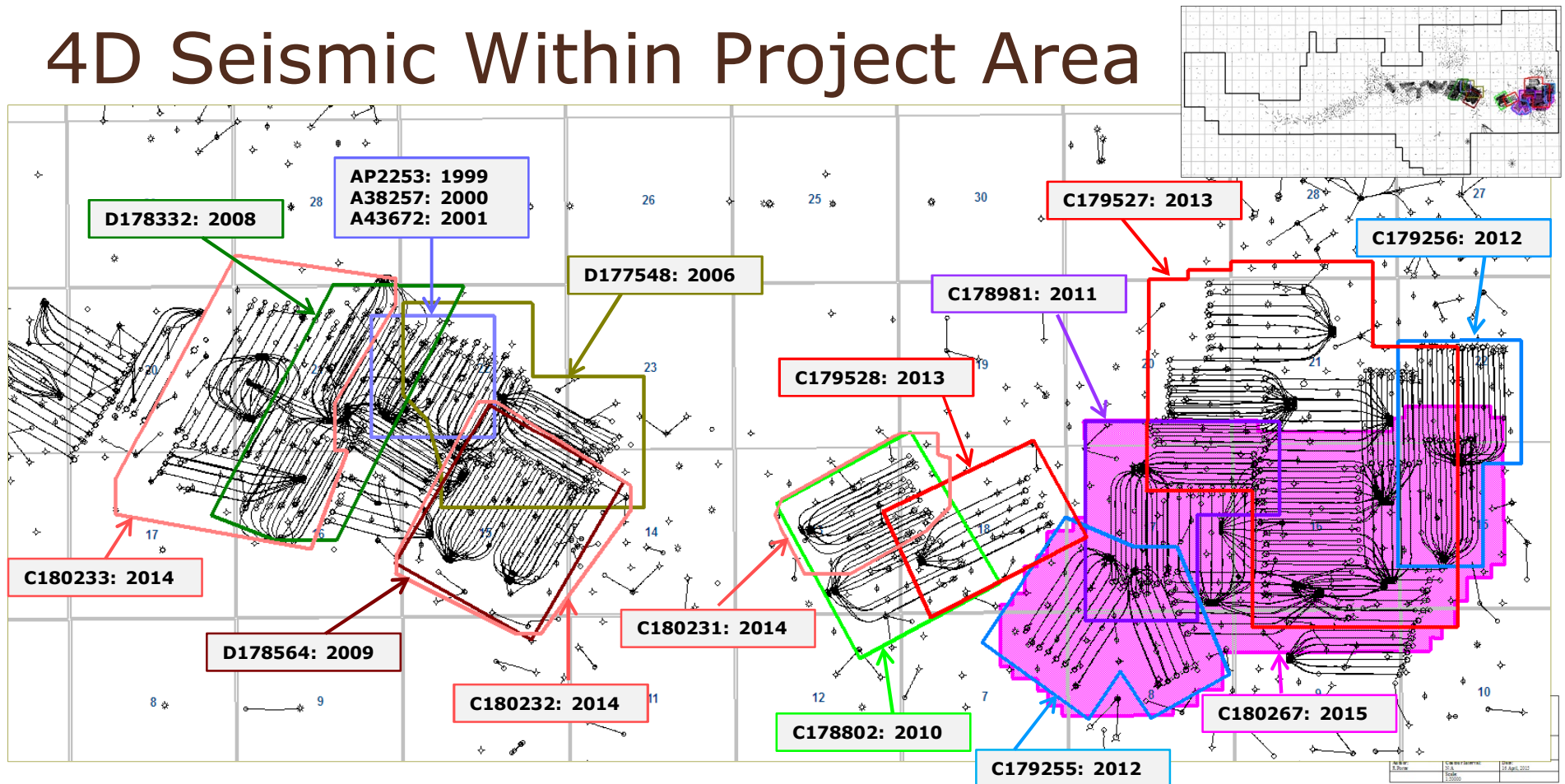


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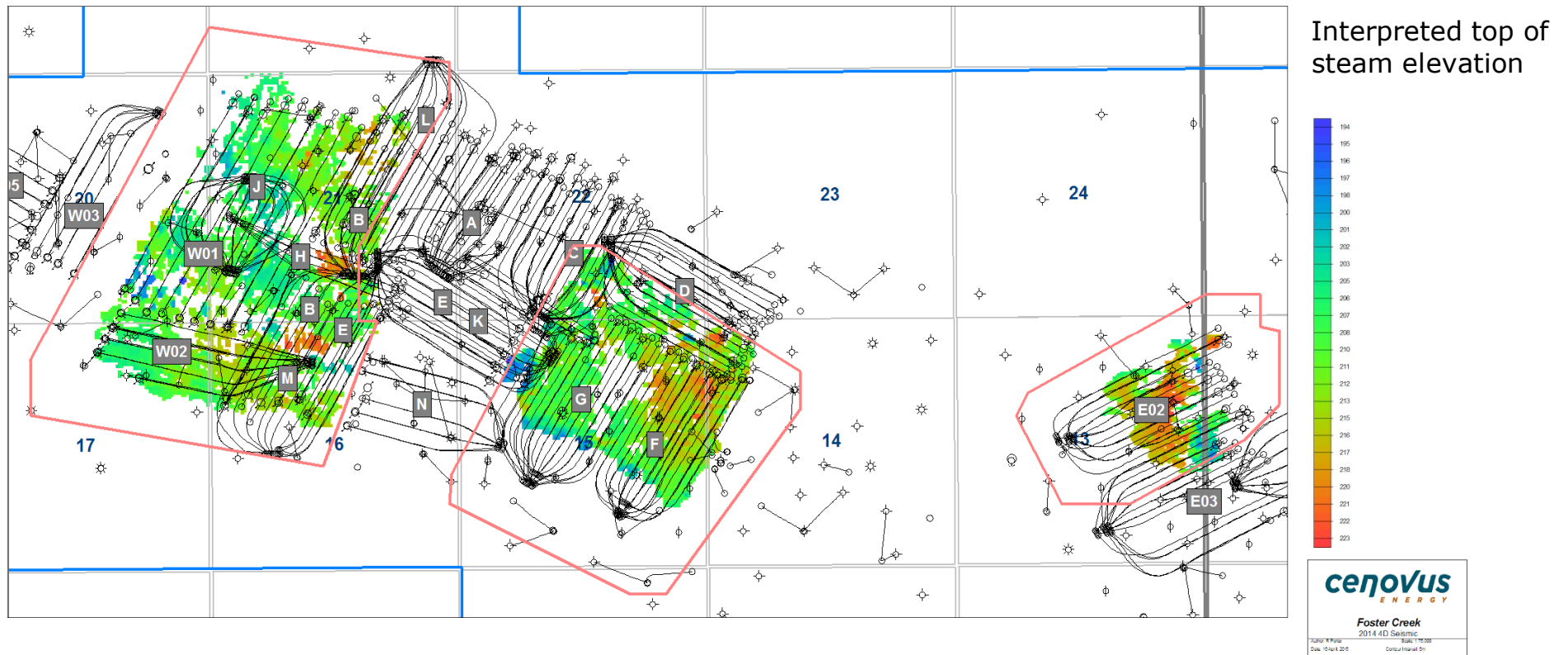
3D Seismic Within Project Area



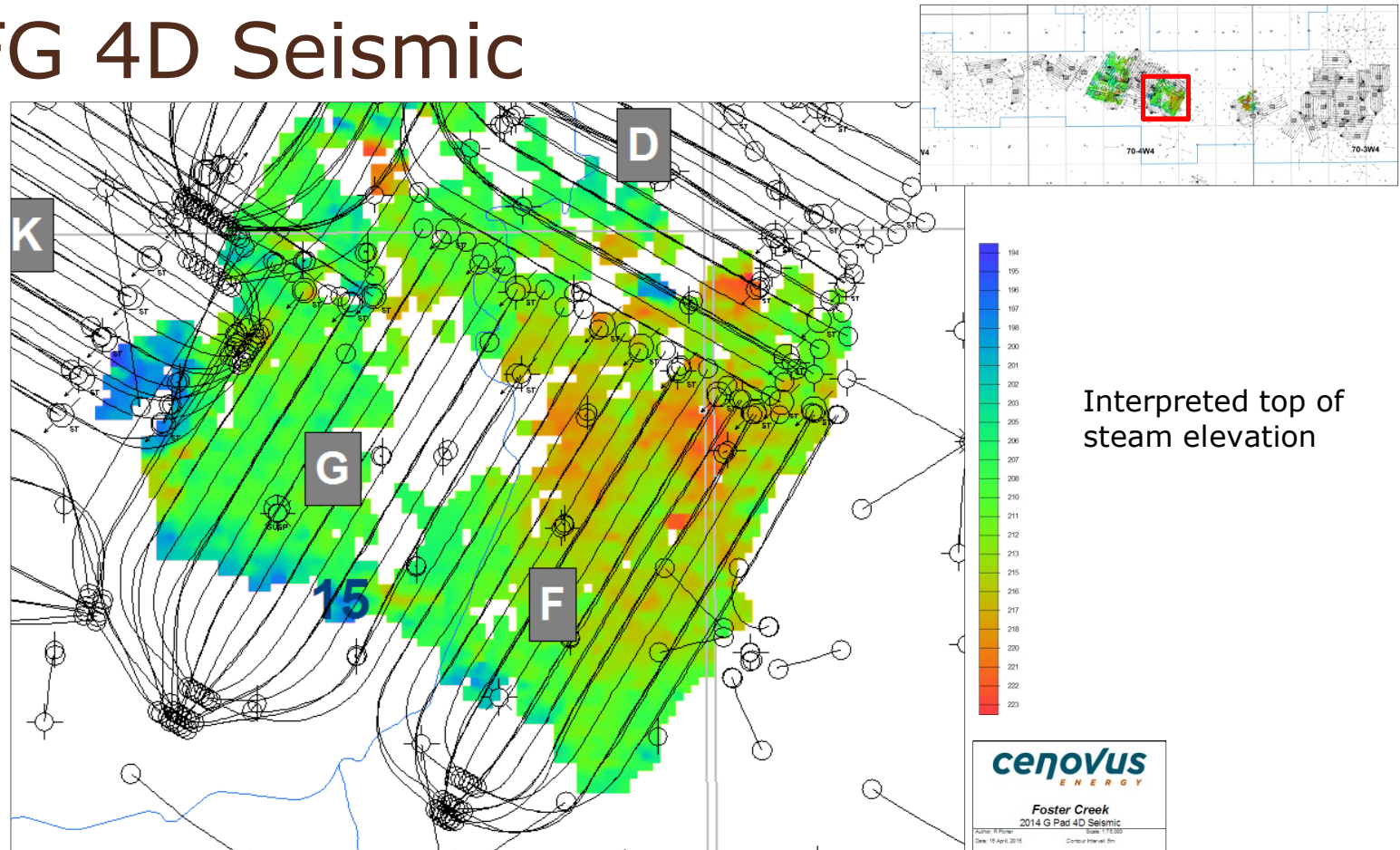
4D Seismic Within Project Area



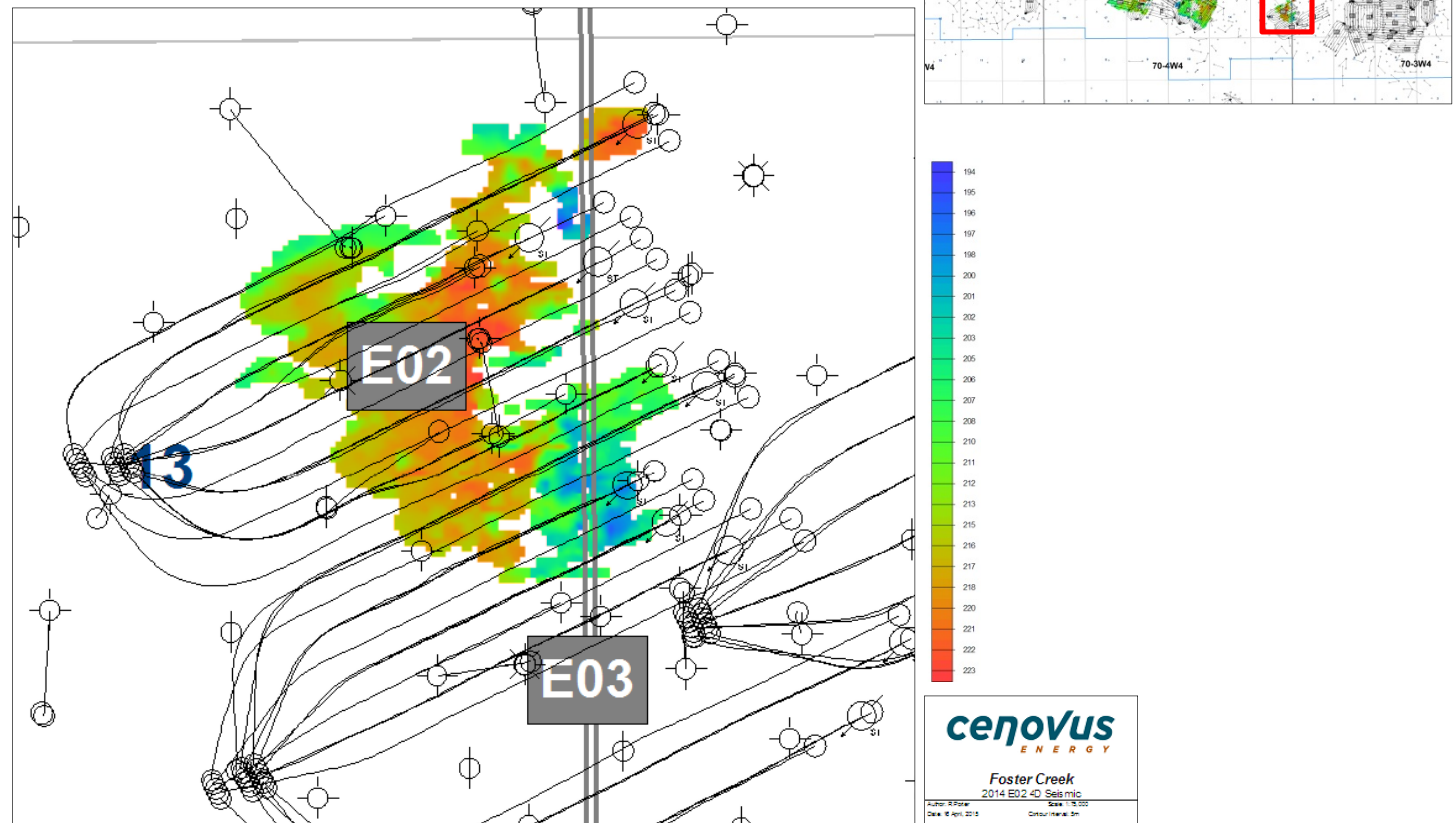
2014 4D Seismic



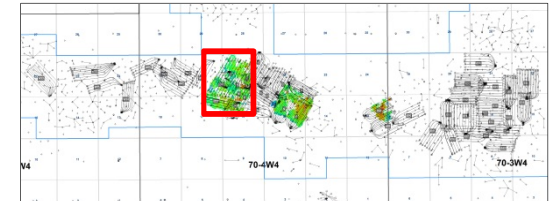
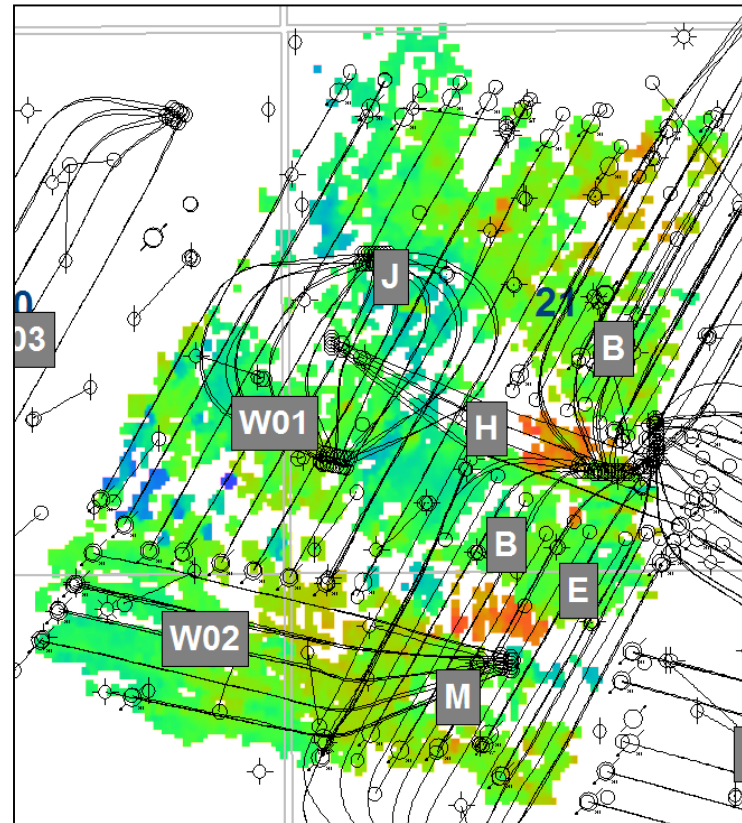
2014 FG 4D Seismic



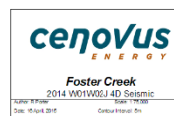
2014 E02 4D Seismic



2014 W01W02J 4D Seismic

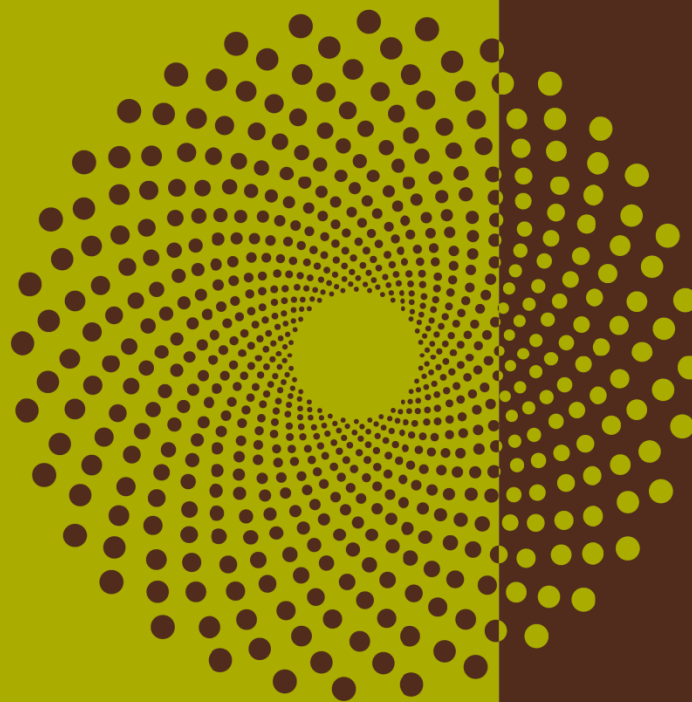


Interpreted top of
steam elevation



Scheme performance

Subsection 3.1.1 – 7 a)

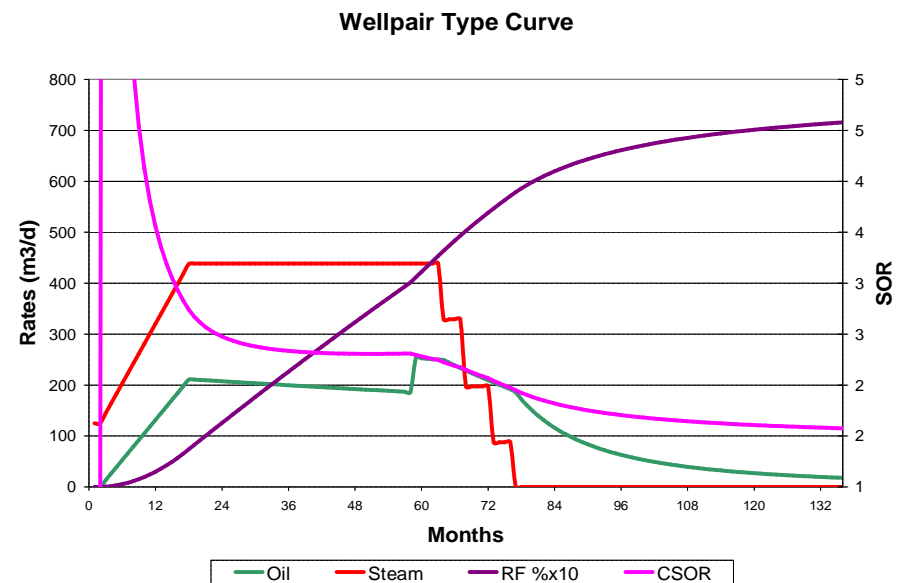


Scheme performance prediction

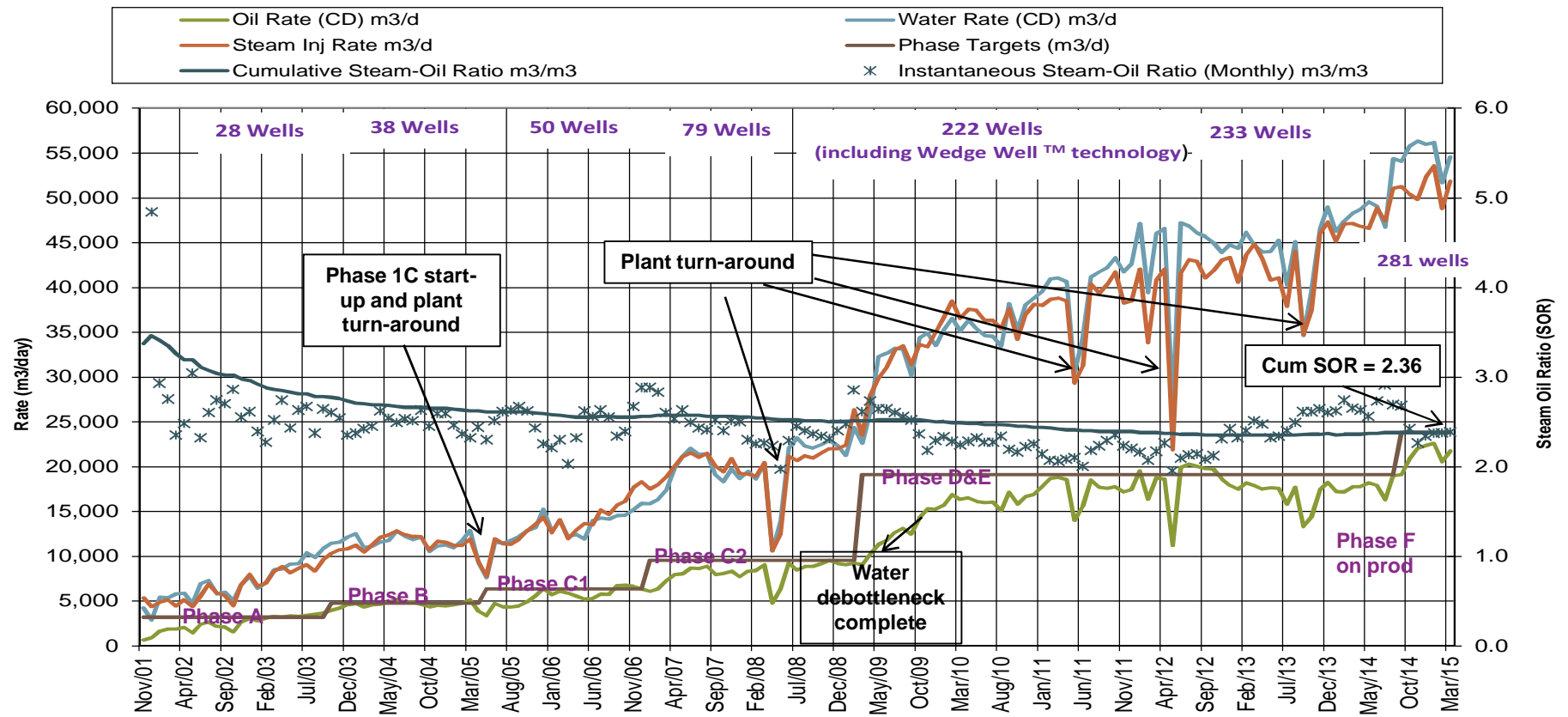
Predict well pair performance based on modified Butler's equation

Predict well pair CSOR using published CSOR correlations (*Edmunds & Chhina 2002*)

Generate overall scheme production performance by adding individual well forecasts over time to honour predicted steam capacity and water treating availability

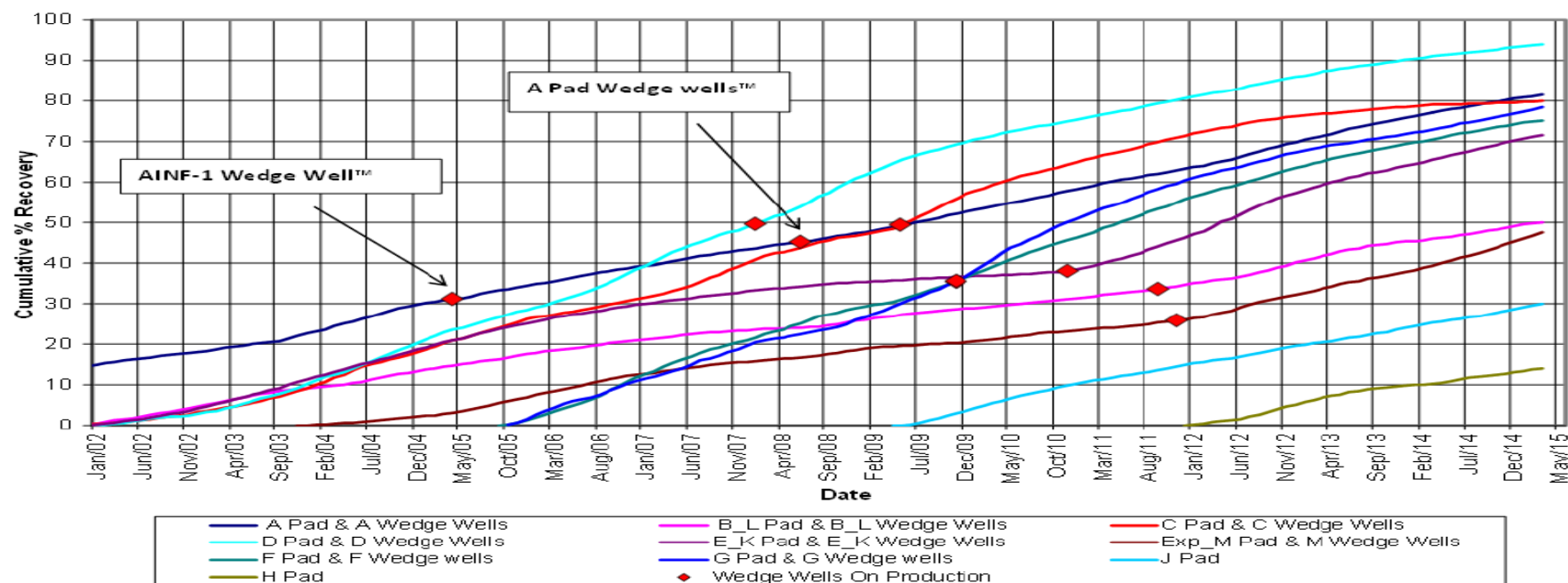


FOSTER CREEK SAGD Totals



Central - cumulative % recovery SOIP

Foster Creek - Central Pads Cumulative % Recovery SOIP

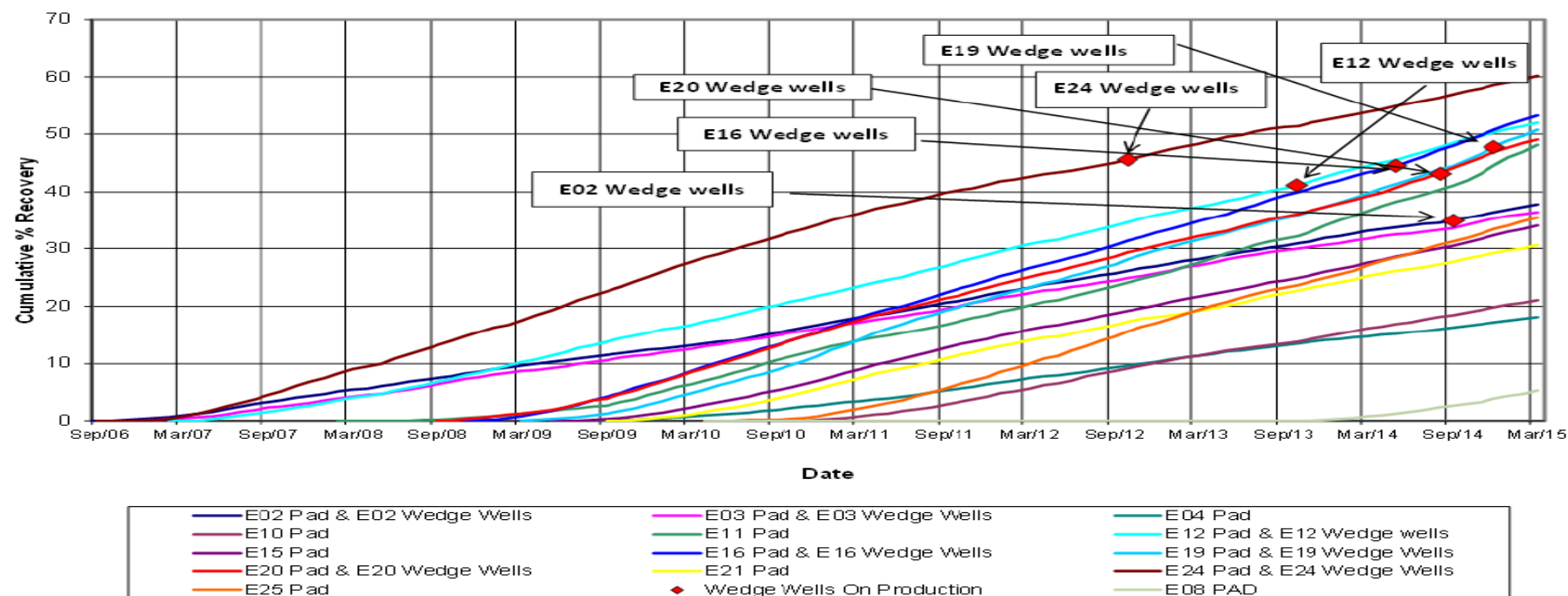


*Note –A35, AINF-6 & AINF-7 volumes included in E Pad

*Note that SOIP calculation methodology is available in subsequent slides

East - cumulative % recovery SOIP

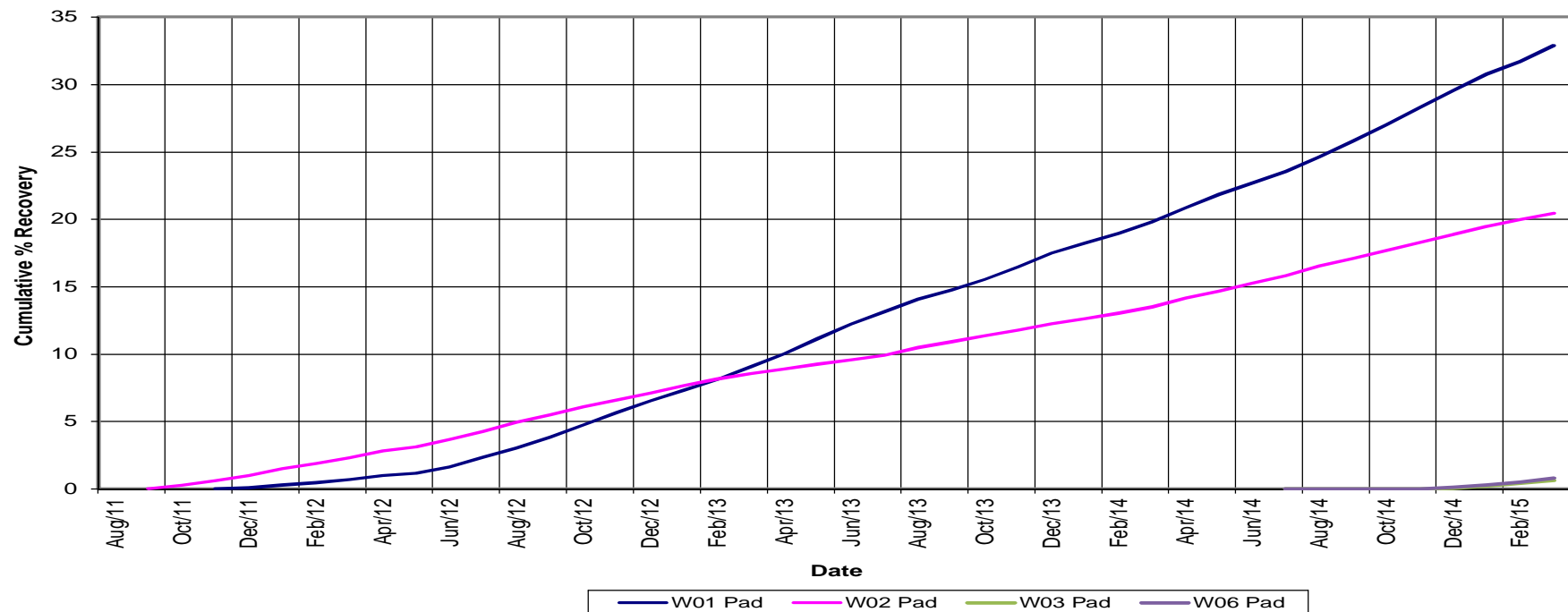
Foster Creek - East Pads
Cumulative % Recovery SOIP



*Note that SOIP calculation methodology is available in subsequent slides

West - cumulative % recovery SOIP

Foster Creek - West Pads Cumulative % Recovery SOIP



*Note that SOIP calculation methodology is available in subsequent slides

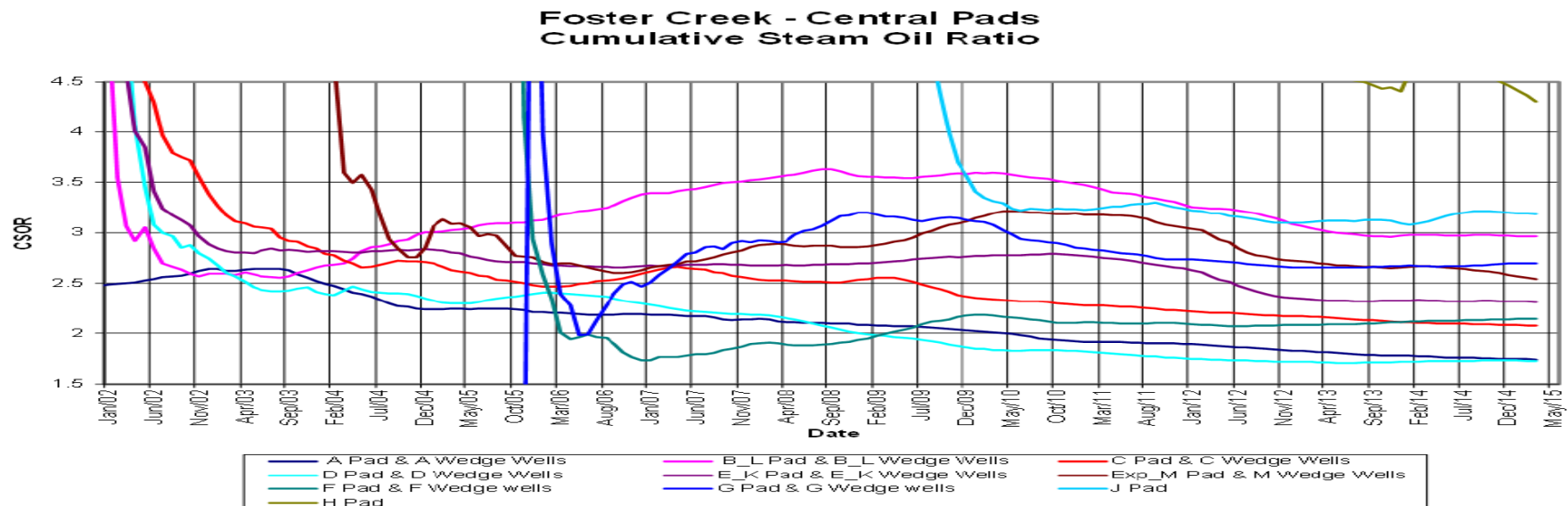
Cumulative steam oil ratio – central pads

B / L and EXP / M Pad SORs high due to shut-in periods of wells on pad that were affected by the Colorado Shale issue

D, C, A, F and G pads have superior SORs as a result of wells drilled utilizing our patented Wedge Well™ technology

D,C and A pad also have started methane co-injection

*Note –A35, AINF-6 & AINF-7 volumes included in E Pad



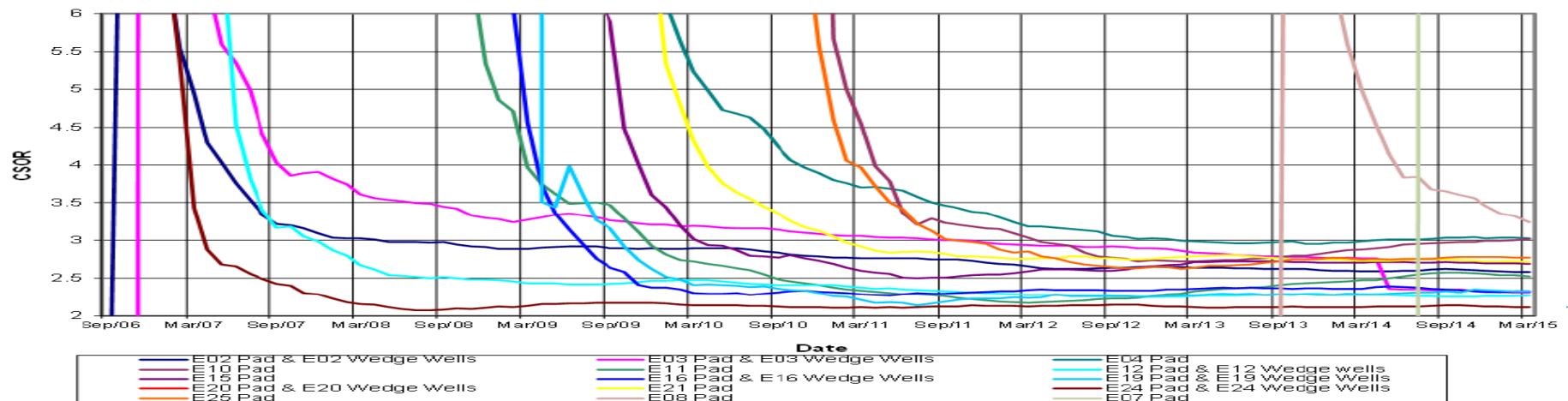
Cumulative steam oil ratio – East pads

E02 & E03 pads - geology in this area is more heterogeneous than in most areas at Foster Creek and start-up was difficult, requiring several steam stimulations, resulting in a higher CSOR

E24, E16, E19, E20 and E12 pads – all very good geology and well performance, thus, low SORs

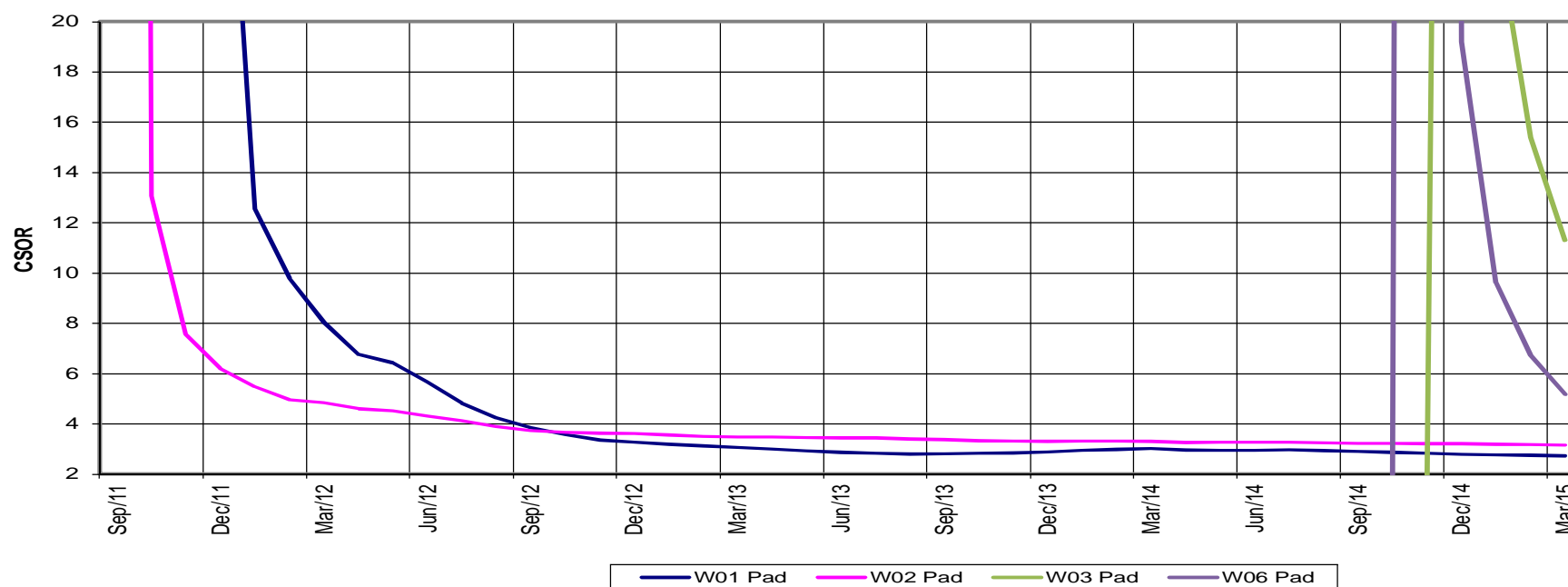
E10 & E11 pads have seen some water influx in a couple of wells

**Foster Creek - East Pads
Cumulative Steam Oil Ratio**



Cumulative steam oil ratio – West pads

**Foster Creek - West Pads
Cumulative Steam Oil Ratio**



Actual production vs. approval capacity

Foster Creek has met the target rate in Phase A, Phase B, Phase C and Phase D&E applications

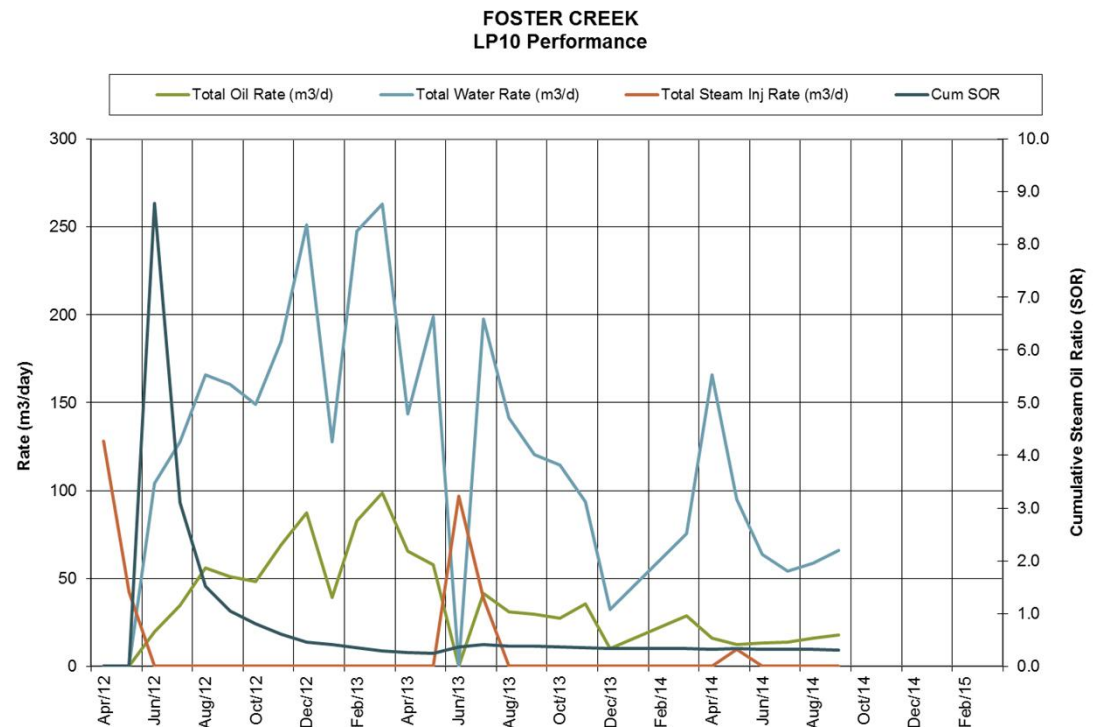
- Phase D&E (Pads J, E04, E08, E11, E15, E16, E19, E20, E21, E25, W01, W02, H) – 120,000 bbl/d (19,080 m³/d)
- Phase F (Pads E07, E14, E42, W06, W03, W08) – 30,000 bbl/d (4767 m³/d)
- Target daily production between 120,000- 150,000bbl/d throughout the remainder of the year

*wells drilled utilizing Wedge Well™ technology have been drilled and are on production

Note that production volumes refer to cumulative production capacity on a total production basis

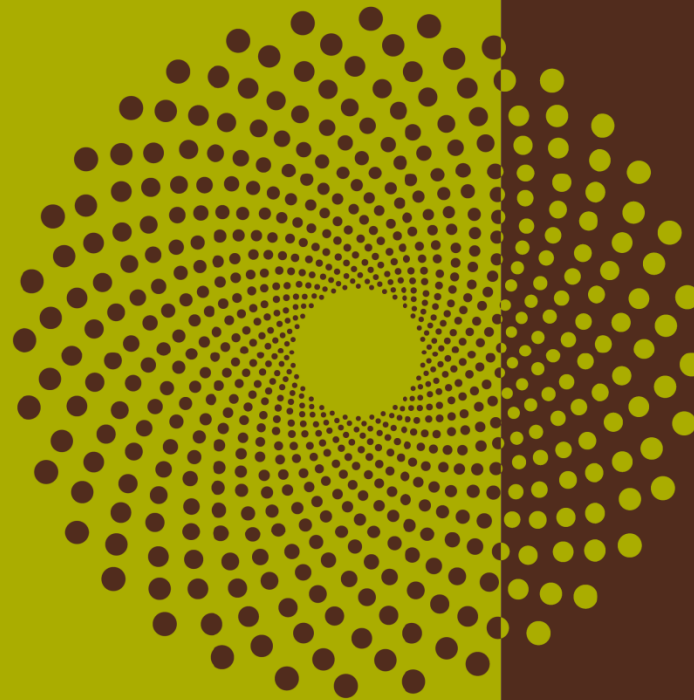
LP10 Performance (Secondary Pay)

- **LP10 is the only secondary pay well with production history to date**
- **Produced at low rates with an extremely low SOR**
- **Currently shut in, no immediate plans to bring back on production**
- **Secondary pay wells are not being further reviewed at this time in the current low oil price environment**



Steam chamber development

Subsection 3.1.1 – 7 b)



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Methods for monitoring chamber development

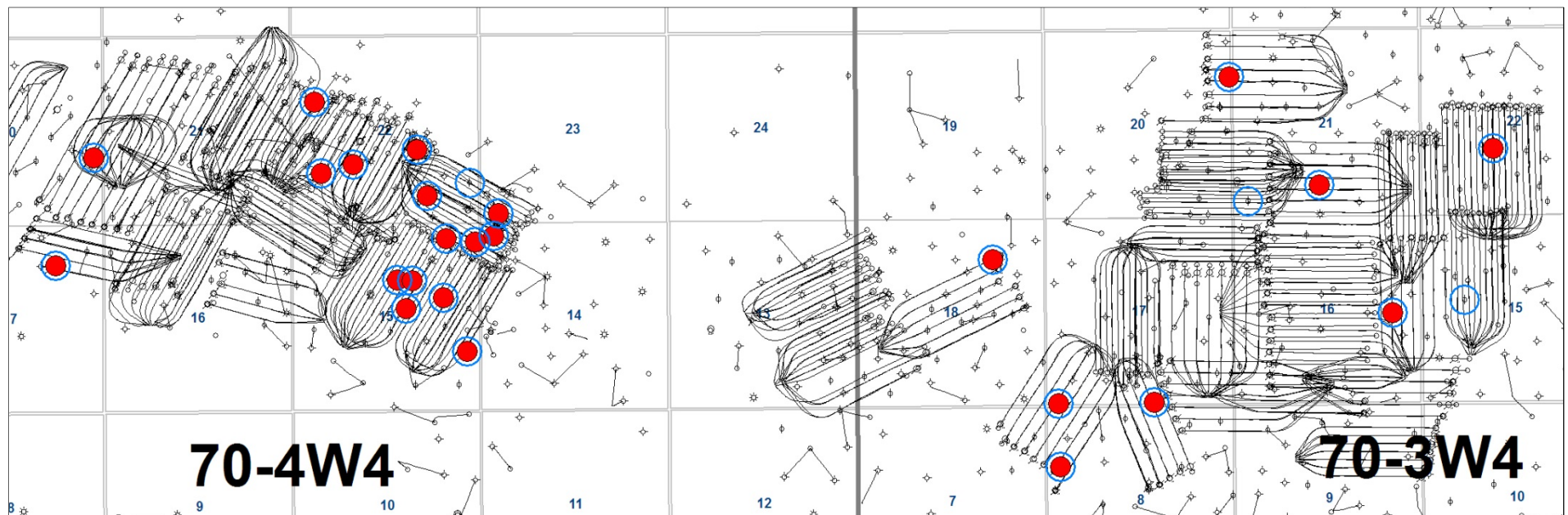
Cenovus uses the following methods for monitoring chamber development:

- Observation wells
- Specialized logging and coring
- Seismic
- Volumetrics

Foster Creek temperature and RST data

24 observation wells logged to acquire temperature data

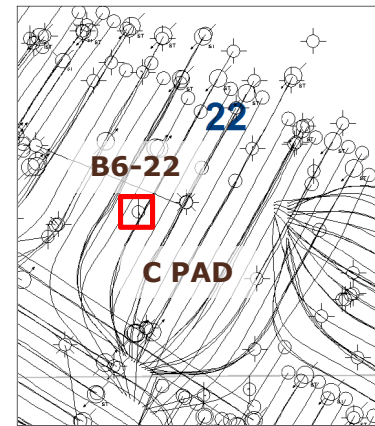
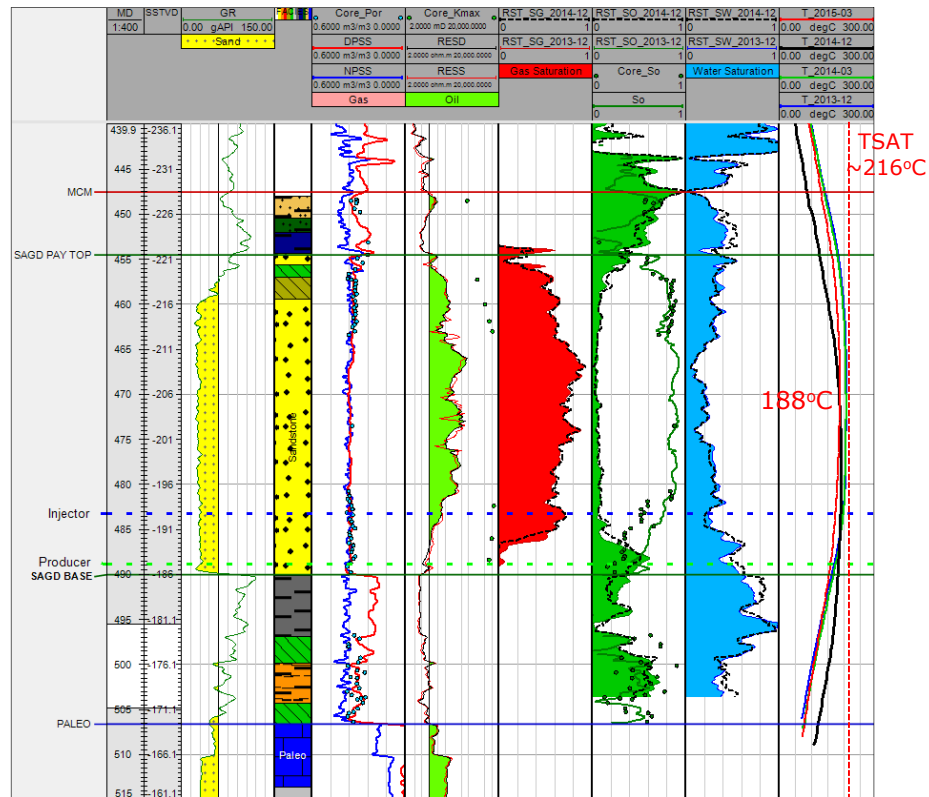
27 observation wells logged to acquire RST data



- Wells selected for Temperature logging
- Wells selected for RST logging

Foster Creek temperature wells

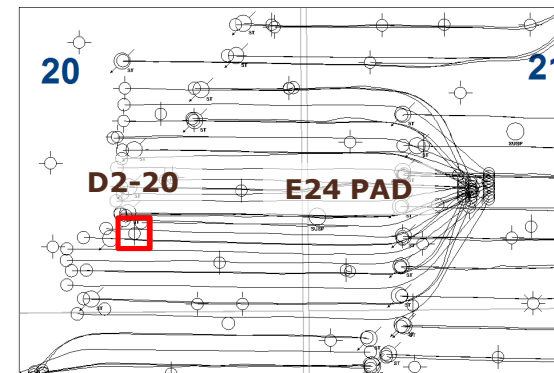
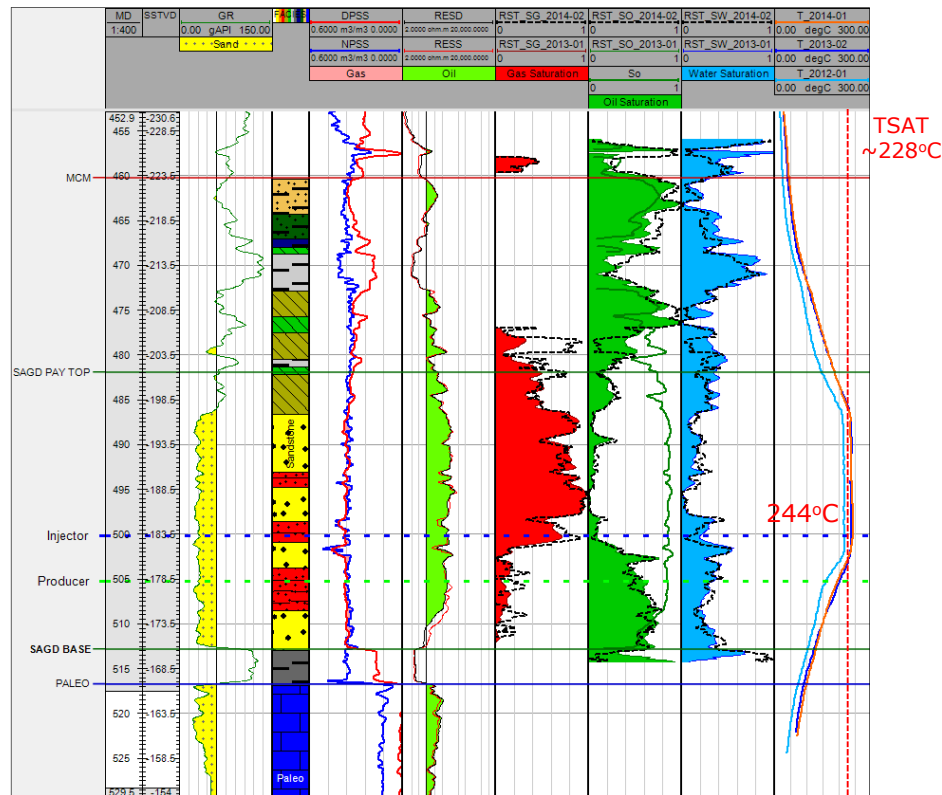
B6-22



- 10m offset C11 Well Pair

Foster Creek temperature wells

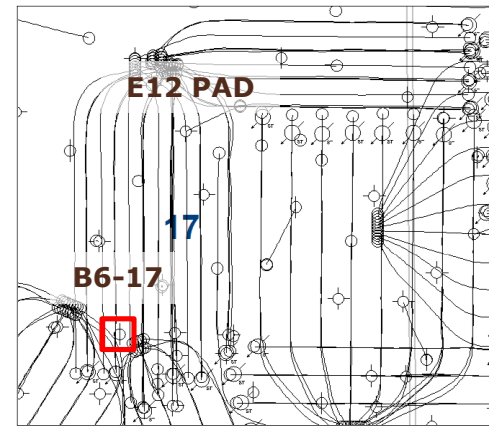
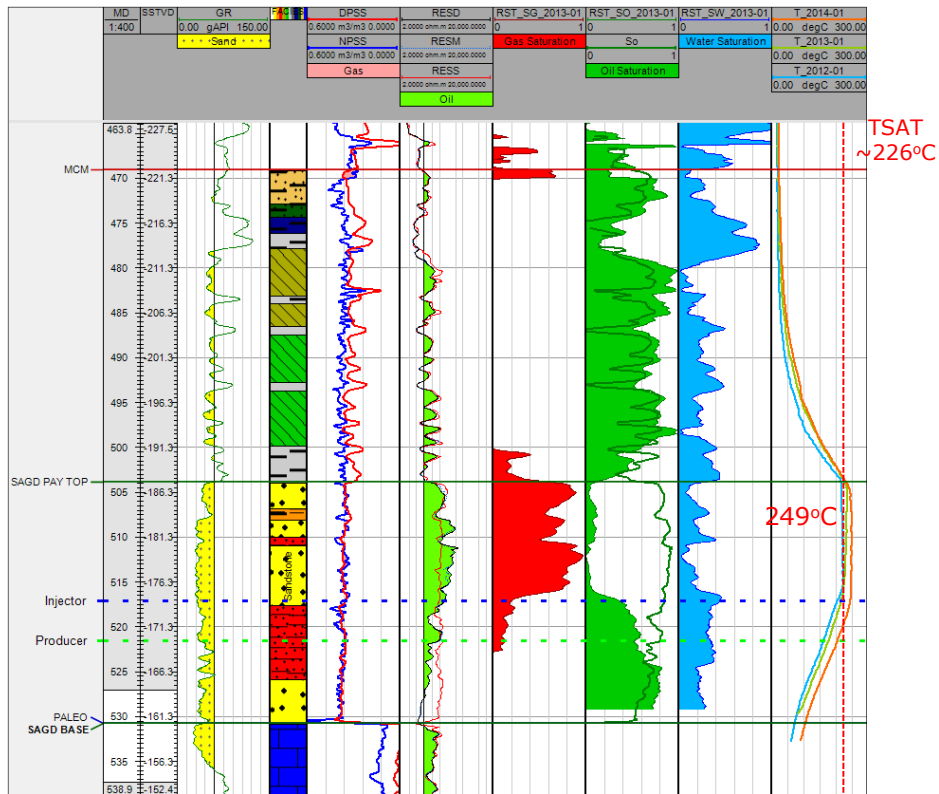
D2-20



- 5m from E24W05 wedge well and 30m away from E24-03 well pair

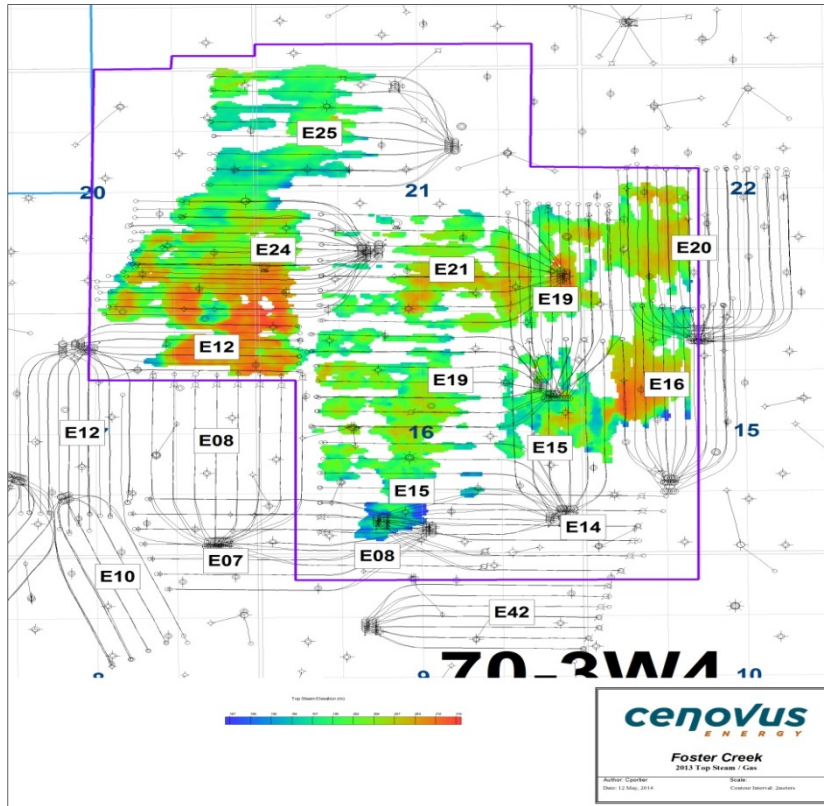
Foster Creek temperature wells

B6-17



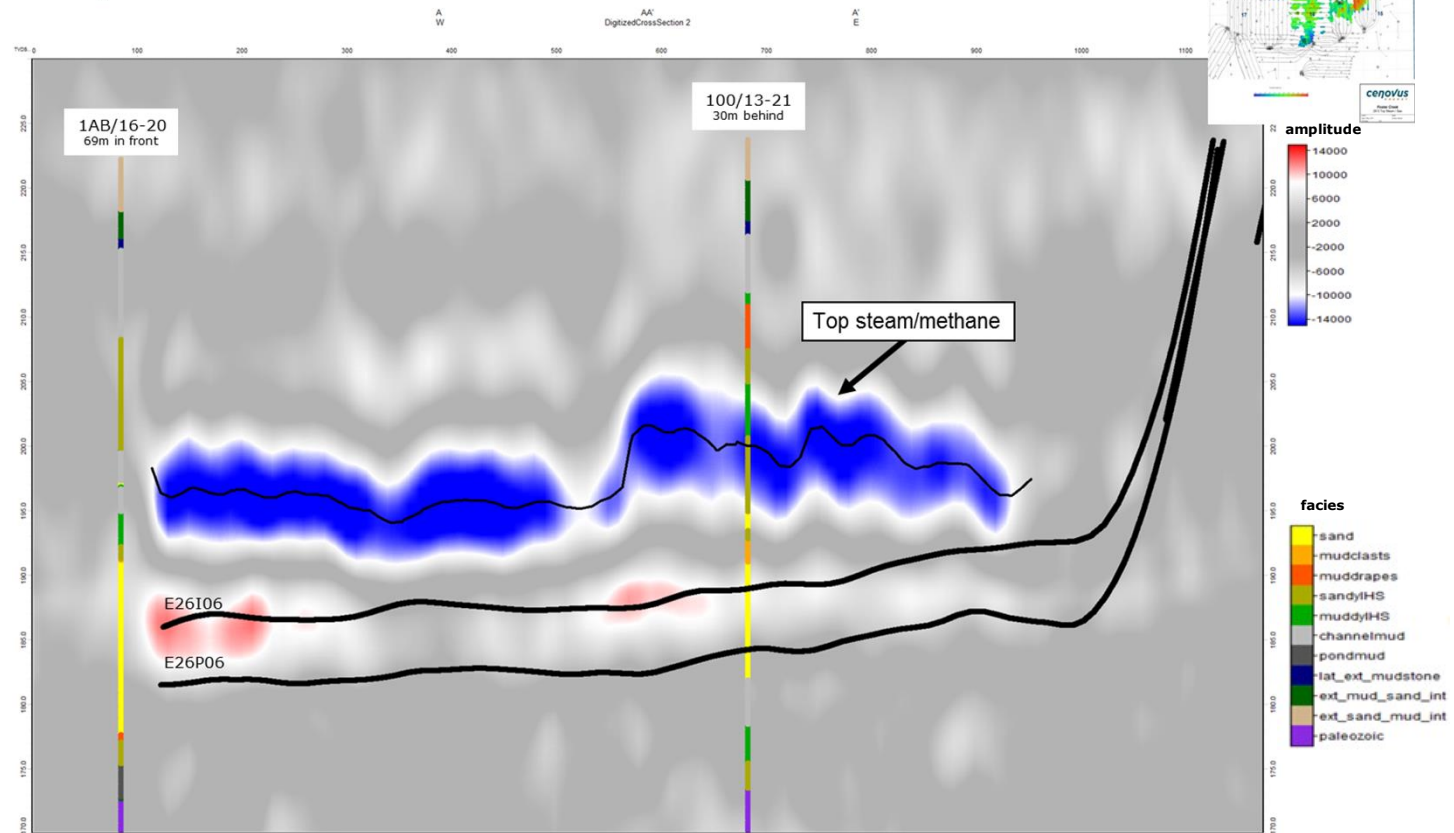
- 9m away from E12-02 well pair

East 4D Seismic (2013)

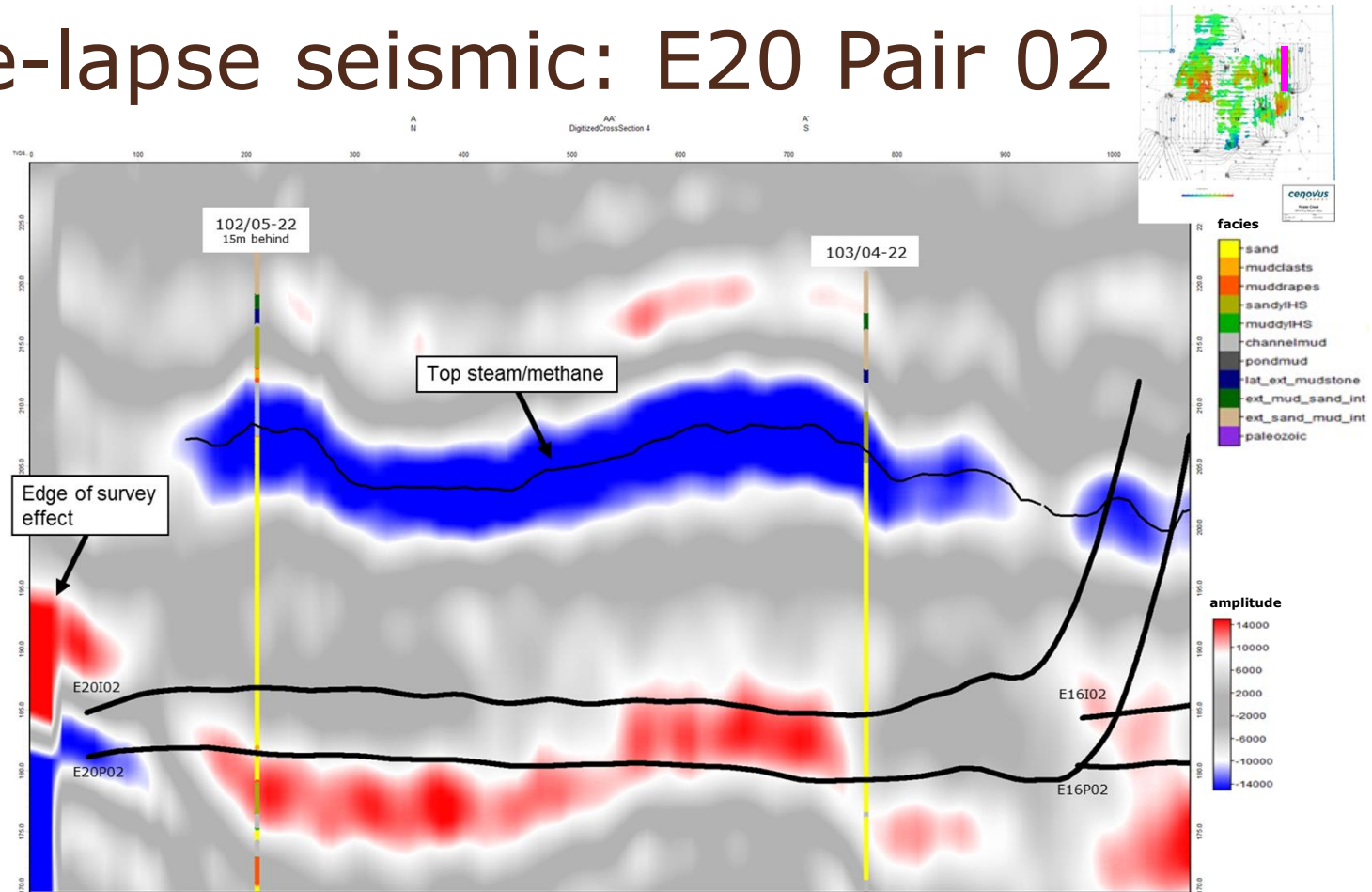


East 4D acquired in 2013 processed and interpreted

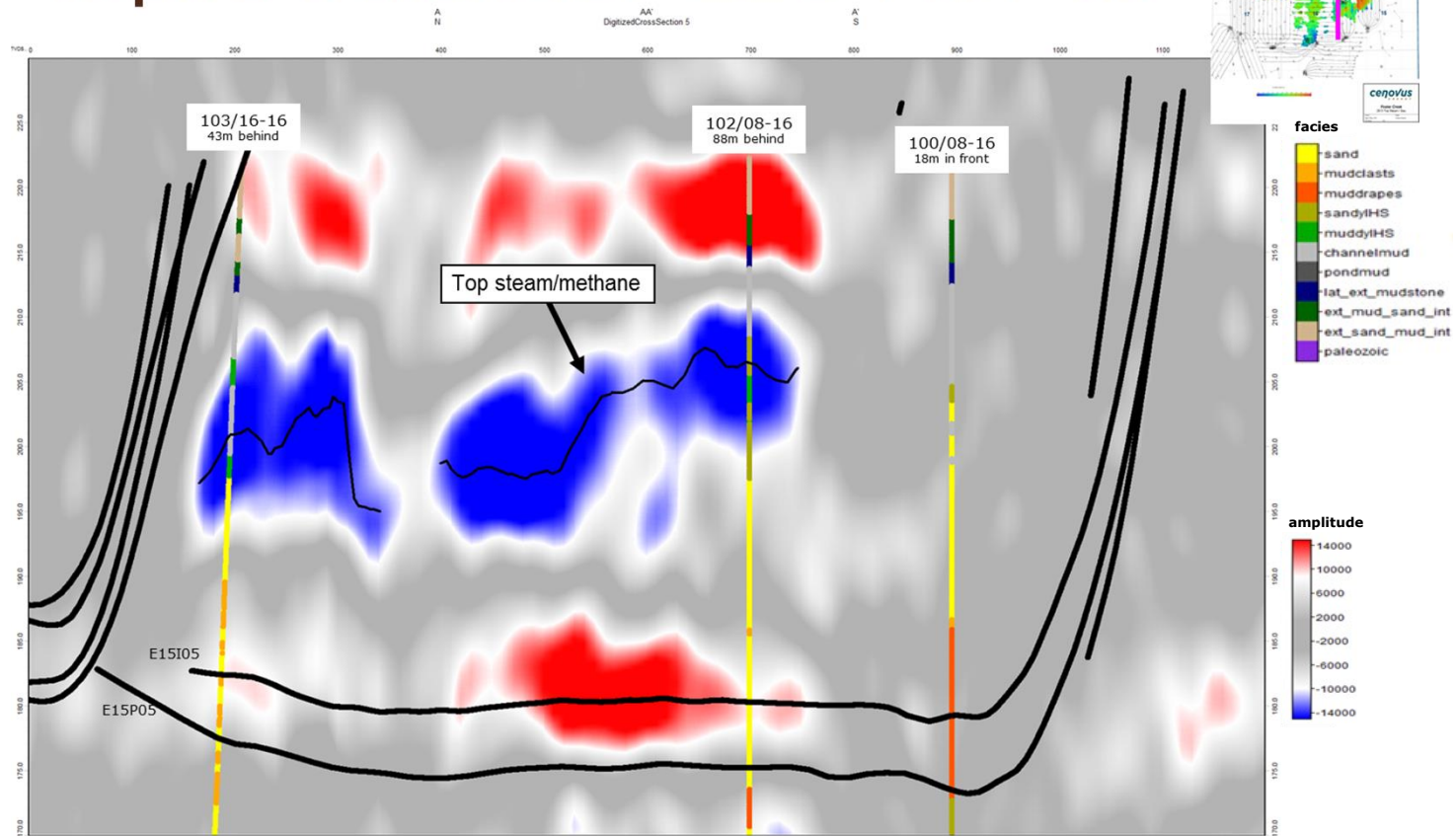
Time-lapse seismic: E25 Pair 06



Time-lapse seismic: E20 Pair 02

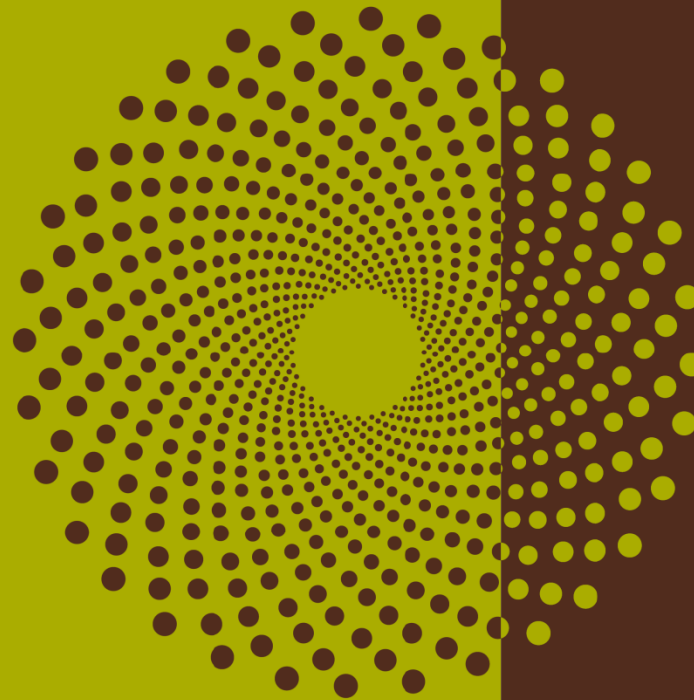


Time-lapse seismic: E15 Pair 05



OBIP

Subsection 3.1.1 – 7c



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Oil in place: SAGDable OIP (SOIP) vs. Productive OIP (POIP)

Two types of Oil in Place (OIP) are provided:

- SAGDable OIP and Productive OIP

SAGDable OIP defined as:

- $(\text{Planned Length}) \times (\text{Spacing}) \times (\text{Net SAGD Pay: Base to Top SAGD}) \times (S_o) \times (\emptyset)$
 - used drilled length for existing well pairs but will use planned length for all future pairs
- a “before-drilling” OOIP, used during planning phase
- doesn’t change after well pair plans finalized
- used to plan additional wells (Wedge Well™ technology, bypassed pay producers, re-drills, new pairs)
- this is essentially a “planned” OOIP, as we would aim to drill the full planned length (typically 800m), and drill the producer well as low as possible in relation to Base SAGD

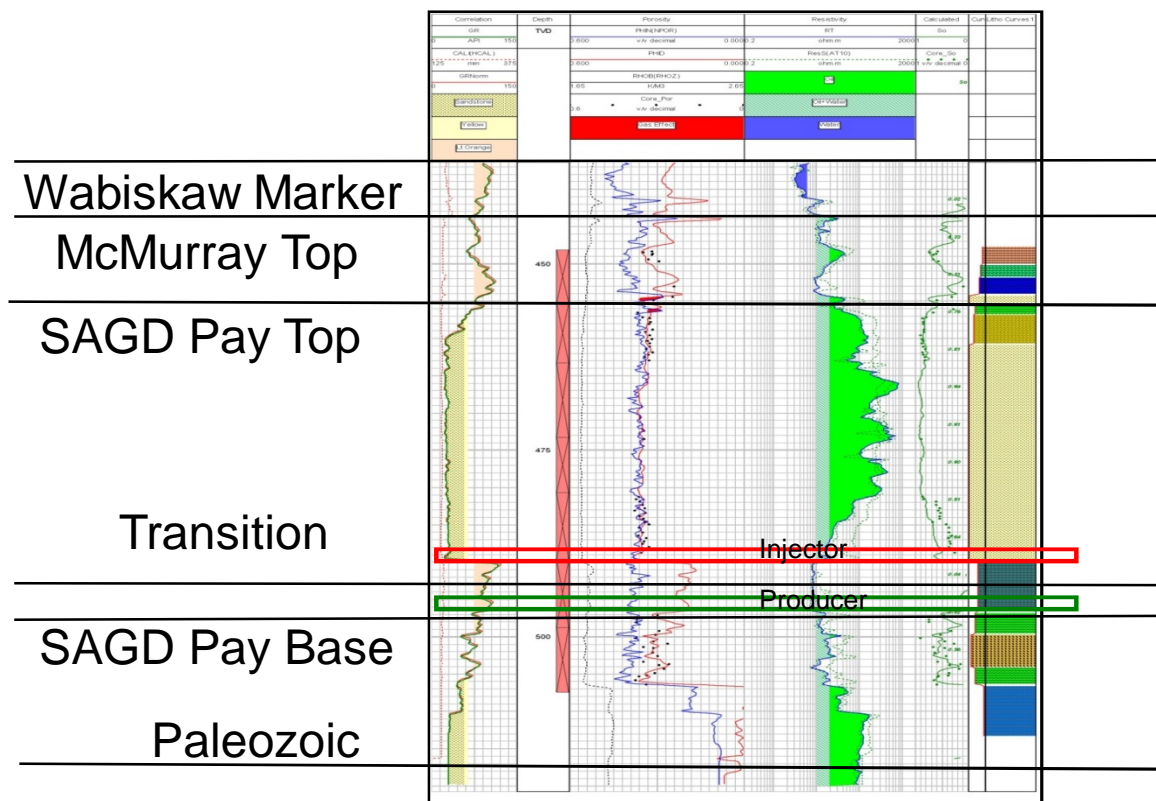
Productive OIP defined as:

- $(\text{Effective Length}) \times (\text{Spacing}) \times (\text{Effective Pay: Producer to Top SAGD}) \times (S_o) \times (\emptyset)$
- an “after-drilling” OOIP, based on well pair potential
- changes with time and interpretation (obs. wells, 4D seismic, MWD error, etc.)
- used to plan blowdown strategy
- this reflects actual well pair performance
 - incorporates actual overlapping slotted liner lengths initially (including blank sections <100m)
 - incorporates actual location of the producing well

Productive OIP almost always < SAGDable OIP

Internally updated reserves definitions and methodology in 2010 and review annually. Change in various pads SOIP and POIP values from year to year to better reflect well lengths, placement, recovery factors and production performance

SOIP and POIP intervals



Cutoffs:

Gamma: <60 API

Porosity: >27% D

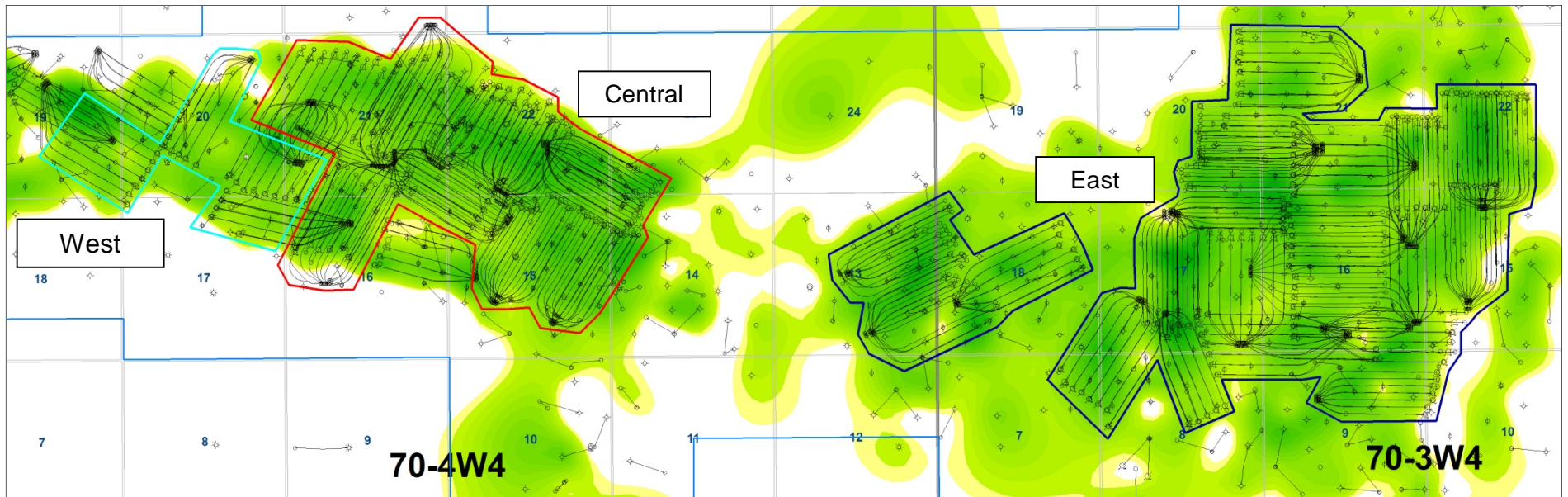
Rt: >20 ohm-m
(equates to 50% So)

Facies: sand, sand-
mud clasts, & sand-
mud drapes.

<1m mud interval

SOIP
POIP

OIP – location of areas



East: 17 pads
Central: 10 pads
West: 4 pads

OIP & percent recovery – central

Ultimate recoveries in the central area are now forecasted higher than originally expected due to:

- Wells drilled utilizing our patented Wedge Well™ technology have been successful
- Indications of lower residual oil than originally expected

C, D & G Pads – currently re-evaluating SOIP, POIP and ultimate recoveries, expectation is that these volumes will increase

PAD	SOIP Mm3	POIP Mm3	Cum Oil Mm3 (to Mar 31, 2015)	Recovery % SOIP	Recovery % POIP	Expected Ultimate Recovery Mm3	Ultimate Recovery as % of SOIP
A PAD*-**	3,228	2,952	2,632	82	89	2,900	90%
B_L PAD	4,330	3,274	2171	50	66	2,947	68%
C PAD**	4,592	3,957	3,672	80	93	3,900	85%
D PAD**	4,695	4,198	4,418	94	105	4,600	98%
E_K PAD*	4,625	3,820	3,315	72	87	3,700	80%
EXP_M PAD	4,156	3,110	1,975	48	64	2,593	62%
F PAD**	4,211	3,541	3,166	75	89	3,500	83%
G PAD**	3,265	2,274	2,559	78	113	2,700	83%
H PAD	721	504	102	14	20	420	58%
J PAD	4,170	3,118	1,249	30	40	2,227	53%
Total Central	37,994	30,748	25,260	66	82	29,487	78%
Total FC	116,819	88,350	52,270	45	59	76,752	66%

*Note - A35, AINF-6 7 AINF-7 excluded from A pad volume and recovery and included in E_K pad.

**Note – includes wells drilled utilizing Wedge Well™ technology

Pad, area, and Foster Creek totals based on sum of wells

To Mar 31, 2015

OIP and percent recovery - east

Ultimate recovery includes only existing wells.

Cenovus anticipates infill drilling on most pads that will significantly increase the ultimate recovery, but has not quantified these increases at this time.

*Note – does not include future Wedge Well™ technology recoverables

**Note – includes wells drilled utilizing Wedge Well™ technology

Pad, area, and Foster Creek totals based on sum of wells

PAD	SOIP Mm3	POIP Mm3	Cum Oil Mm3 (to Mar 31, 2015)	Recovery % SOIP	Recovery % POIP	Expected Ultimate Recovery Mm3	Ultimate Recovery as % of SOIP
E02 PAD	2,993	2,051	1131	38	55	1,749	58%
E03 PAD	3,042	2,079	1104	36	53	1,985	65%
E04 PAD	3,568	2,407	647	18	27	1,925	54%
E07 PAD	2,606	1,849	32	1	2	1,479	57%
E08 PAD	4,676	4,049	244	5	6	3,239	69%
E10 PAD	2,061	1,492	435	21	29	1,194	58%
E11 PAD	3,912	3,409	1884	48	55	2,727	70%
E12 PAD	7,023	4,831	3656	52	76	4,598	65%
E15 PAD	7,397	5,646	2522	34	45	4,517	61%
E16 PAD	3,486	3,119	1856	53	60	2,512	72%
E19 PAD	6,307	5,850	3200	51	55	4,680	74%
E20 PAD	5,882	4,909	2891	49	59	4,022	68%
E21 PAD	3,930	2,863	1203	31	42	2,291	58%
E24 PAD	5,256	4,931	3162	60	64	4,008	76%
E25 PAD	4,137	3,390	1469	36	43	2,712	66%
Total East	66,276	52,875	25,436	38	48	43,638	66%
Total FC	116,819	88,350	52,270	45	59	76,752	66%

To March 31, 2015

OIP and percent recovery – west

W01 & W02 pads came online in late 2011

W03 & W06 pads came online in late 2014

PAD	SOIP Mm3	POIP Mm3	Cum Oil Mm3 (to Mar 31, 2015)	Recovery % SOIP	Recovery % POIP	Expected Ultimate Recovery Mm3	Ultimate Recovery as % of SOIP
W01	3,697	3,224	1,215	33	38	2,402	65%
W02	1,753	1,503	358	20	24	1,226	70%
W03	2,532	1,998	15	1	1	1,568	62%
W06	4,566	3,735	36	1	1	2,861	63%
Total West	12,549	10,460	1,625	13	16	8,057	64%
Total FC	116,819	94,083	52,322	45	56	81,182	69%

***Note – does not include future Wedge Well™ technology recoverable**

Pad, area, and Foster Creek totals based on sum of wells

To March 31, 2015

Recovery examples

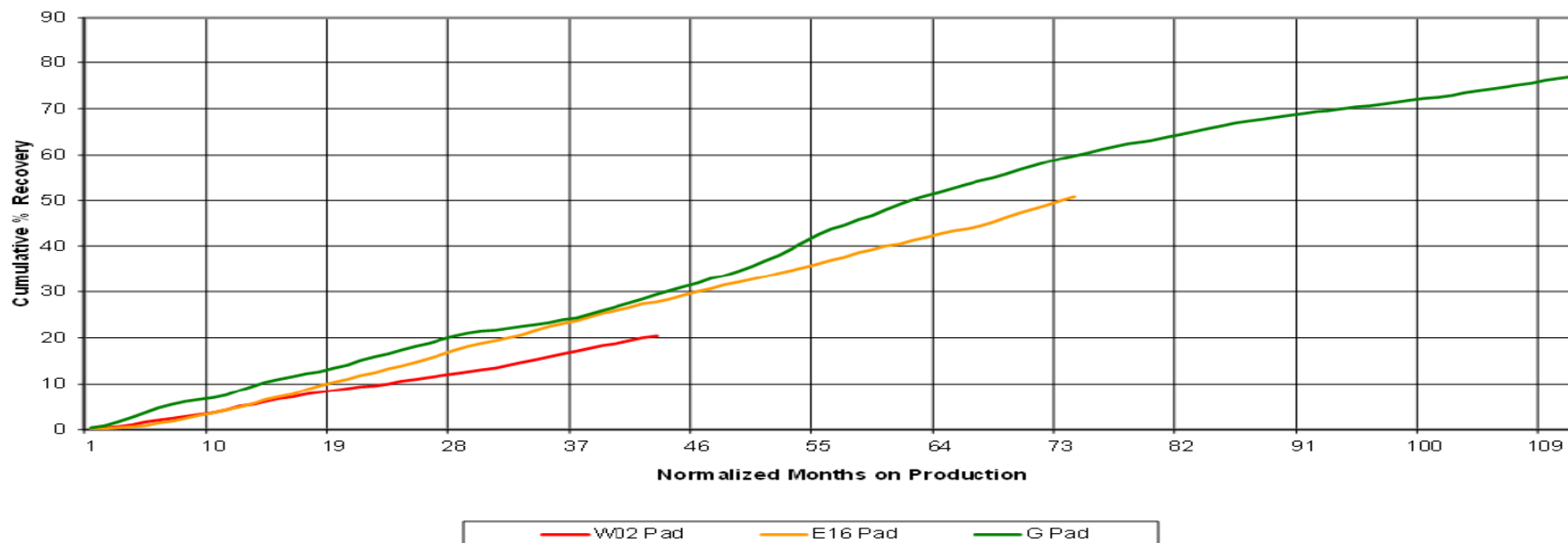
W02 pad low ultimate recovery example with focus on W02-03 well pair

E16 pad medium ultimate recovery example with focus on E16-02 well pair

G pad high ultimate recovery example with focus on GP01 well pair

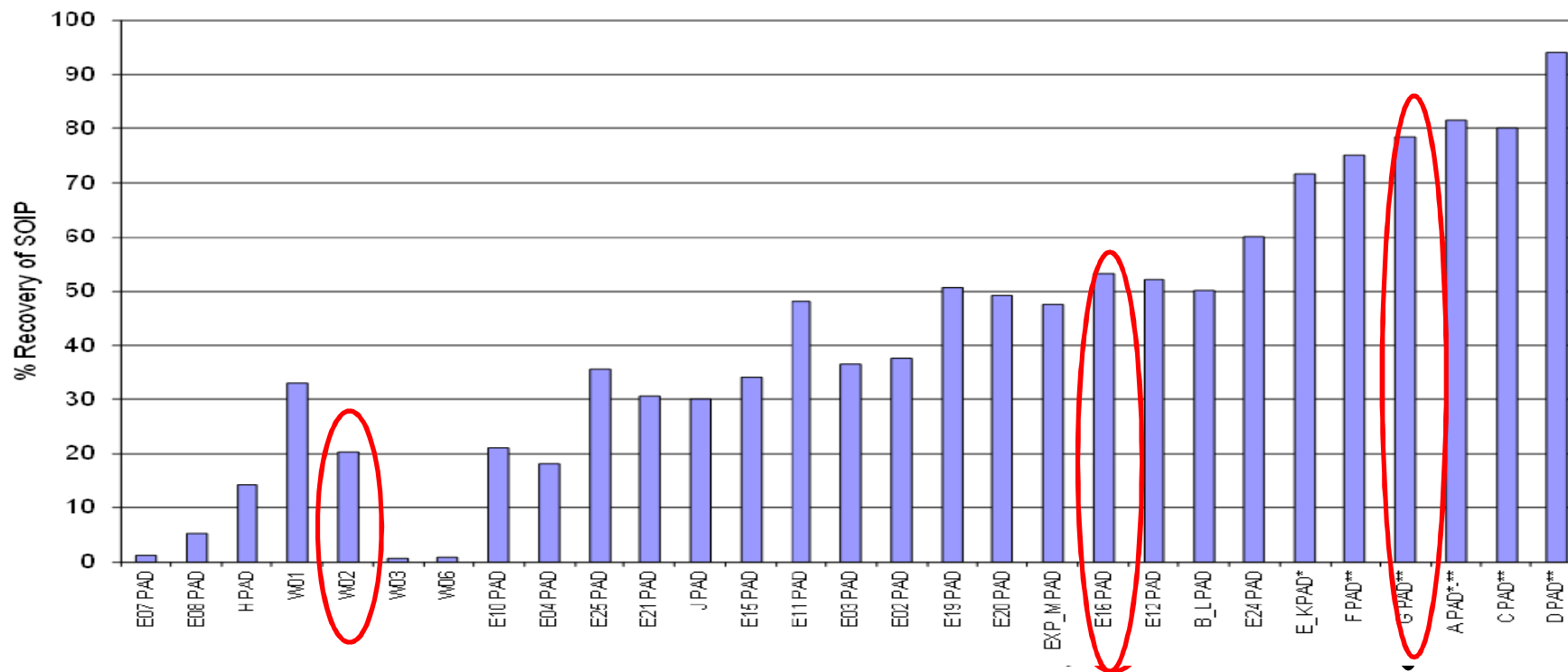
Recovery examples cumulative percent recovery SOIP

Foster Creek - W02, E16, & G Pads
Cumulative % Recovery SOIP
Normalized



Current percent recovery of SOIP: pad totals

Foster Creek - % Recovery of SOIP per Pad (Mar 31, 2015)



OBIP – low example

W02 pad

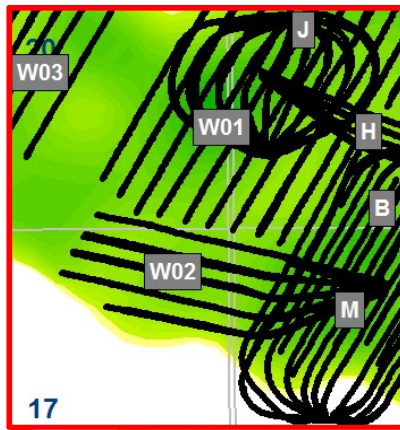
Subsection 3.1.1 – 7 c, iii)



W02 pad overview

- **W02 pad began production in September 2011 (five pairs)**
- **Generally good quality geology on the edge of the valley, some small variations in SAGD base between well pairs**
- **Pad started up using ESPs, steam stimulations were successful on every well**
- **Initial operating pressures ~3 Mpa until pad started communicating with rest of central pad**
- **Remedial work on P02, P03, and P05 in 2013 - Q1 2014**
- **Currently at ~20% recovery of SOIP**
- **CSOR is currently 3.29, expected to drop as pad is in early life**

W02 Pad SAGD Pay

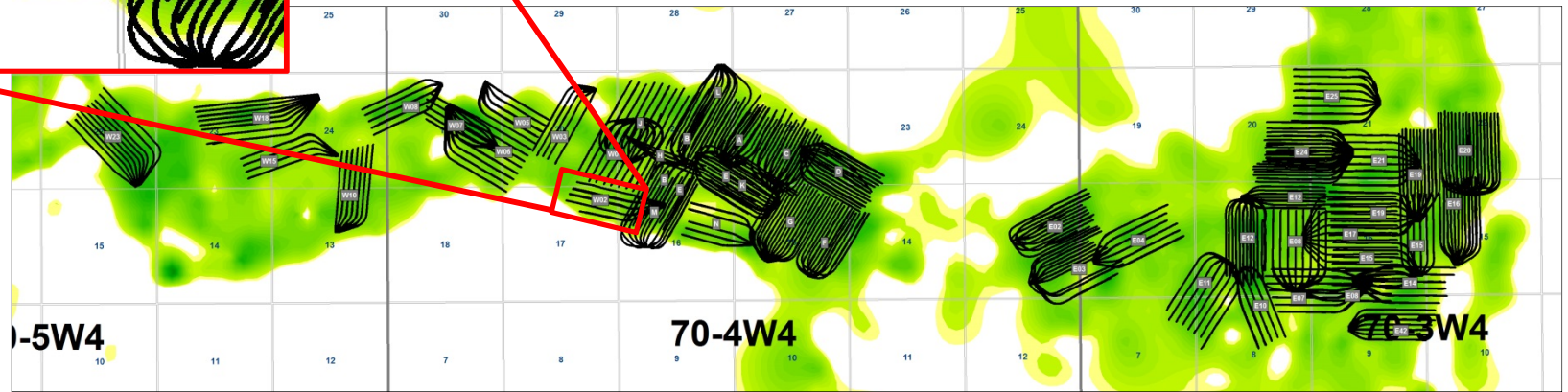


Production Date: September 2011

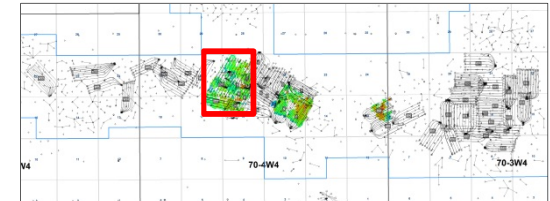
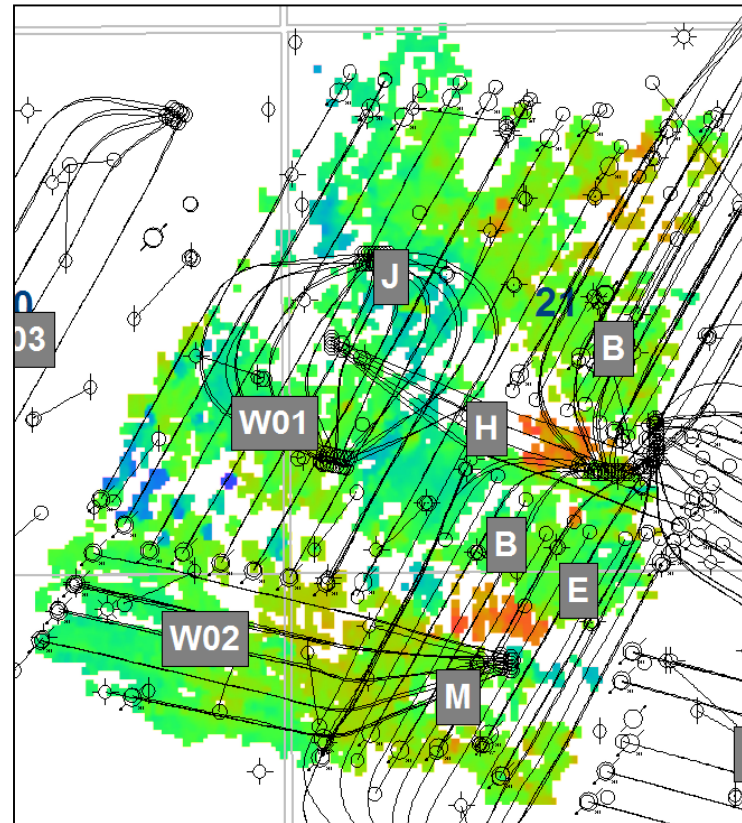
Standoff: 0 – 3 m

pairs: 5 drilled

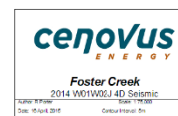
Pay trend: moderate to thin, with clast zones



2014 W01W02J 4D Seismic



Interpreted top of
steam elevation



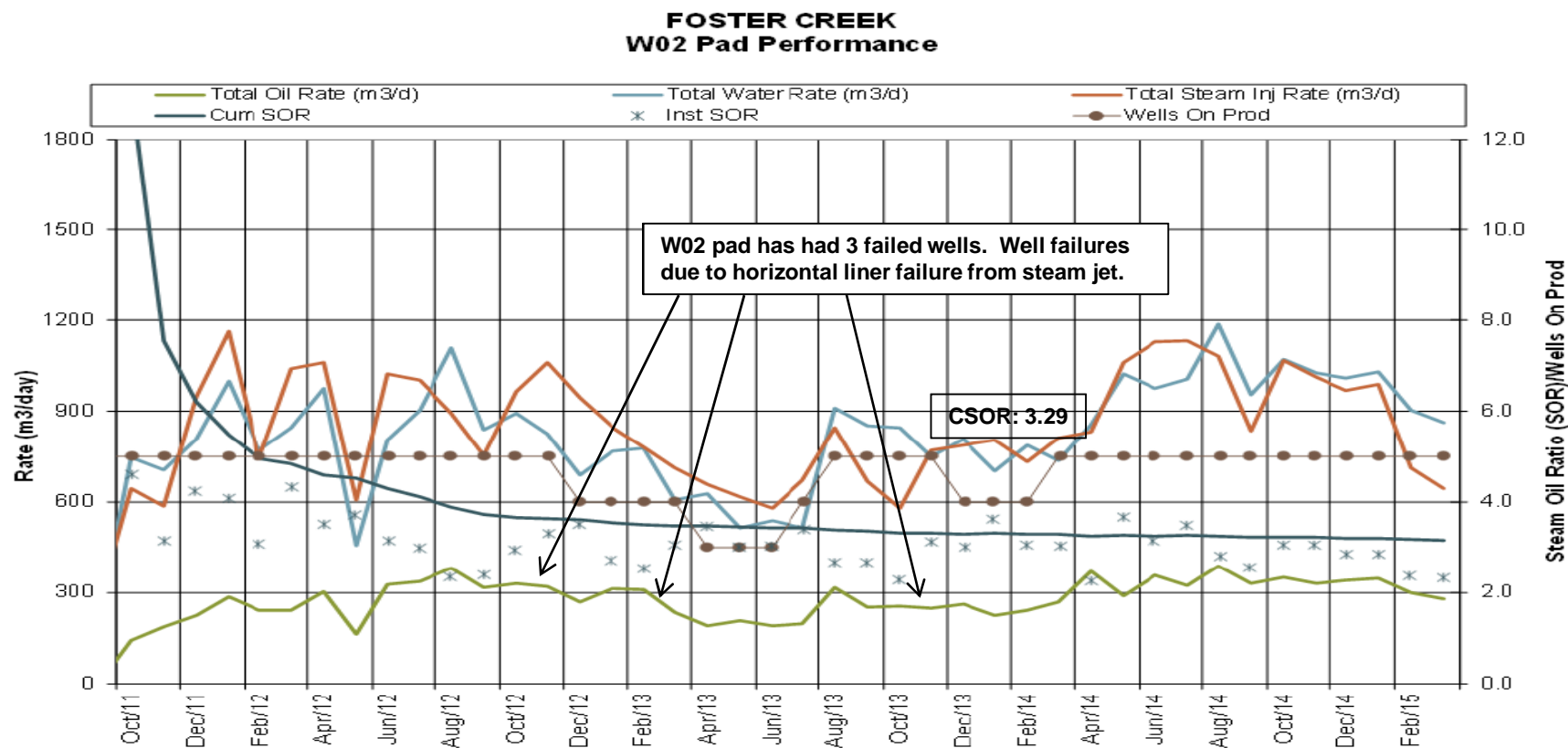
W02 pad - extent of chamber development

PAD	PAIR	SOIP Mm3	POIP Mm3	Cum Oil Mm3	% Recovery SOIP	% Recovery POIP
W02 PAD	W02-01	443	355	64	14	18
W02 PAD	W02-02	348	301	50	15	17
W02 PAD	W02-03	450	395	106	23	27
W02 PAD	W02-04	389	360	77	20	21
W02 PAD	W02-05	124	92	62	50	67
Total	W02 PAD	1,753	1,503	358	20	24

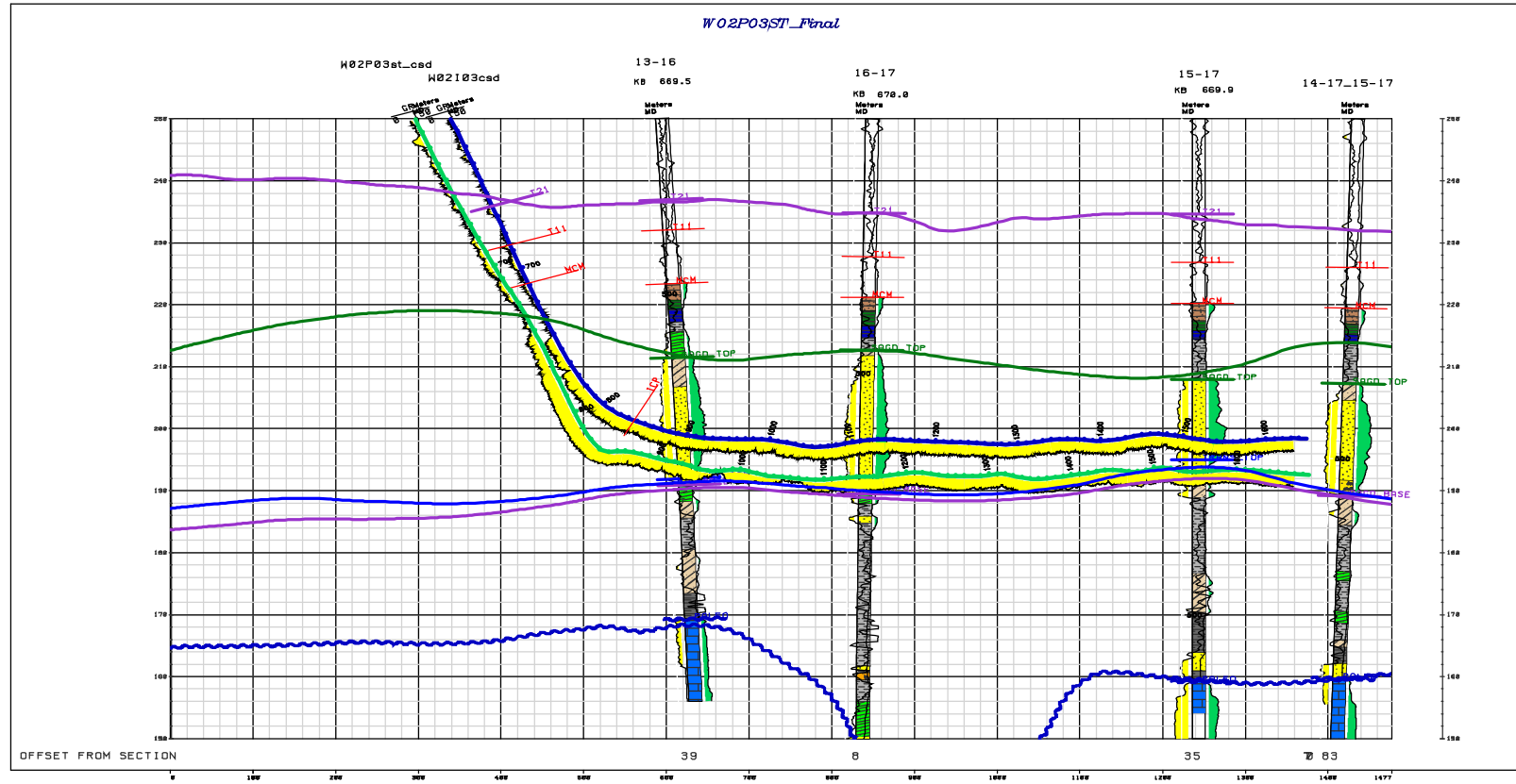
Expected ultimate recovery (70% of SOIP) = 1,226 Mm3

To March 31, 2015

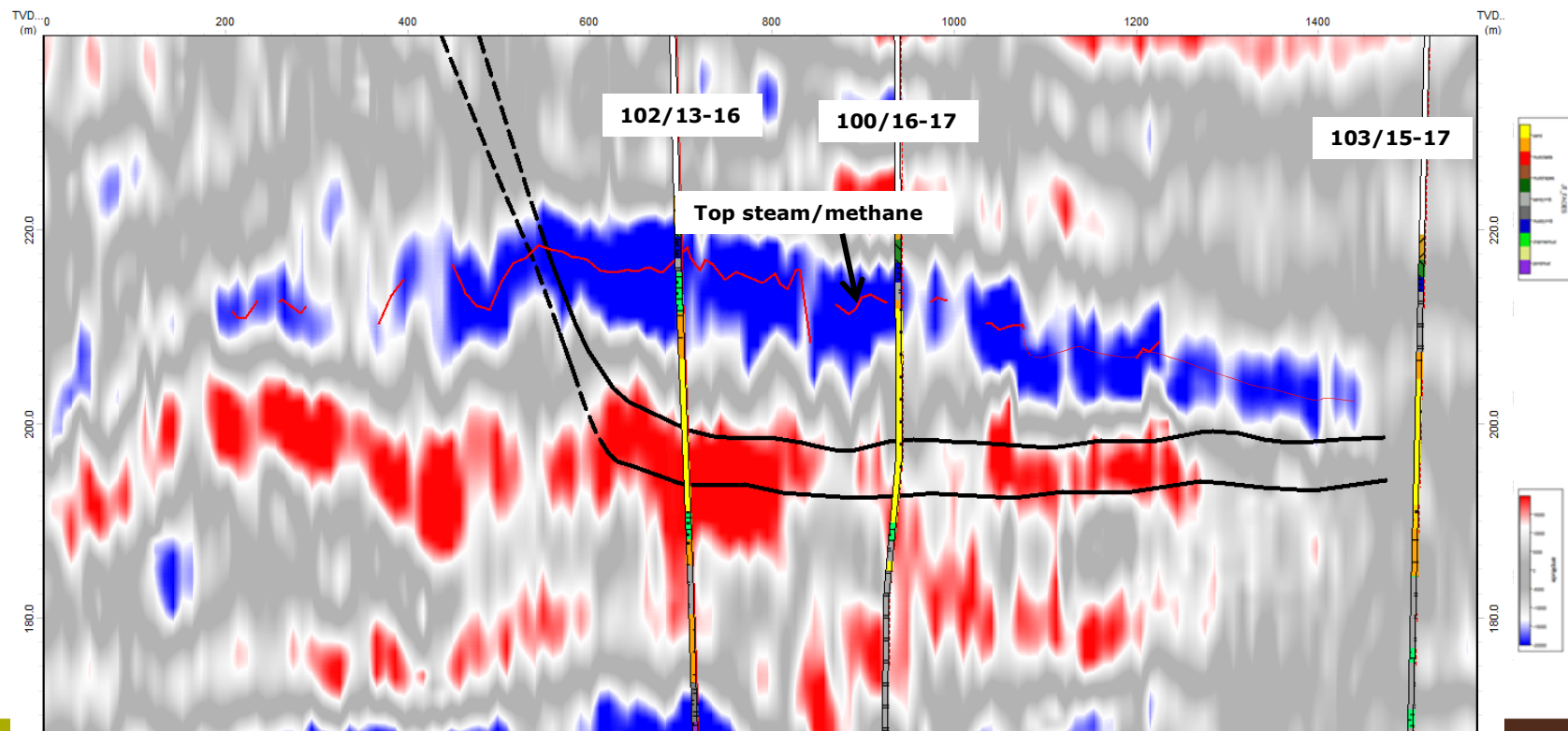
W02 pad performance



W02-03 Geological Profile

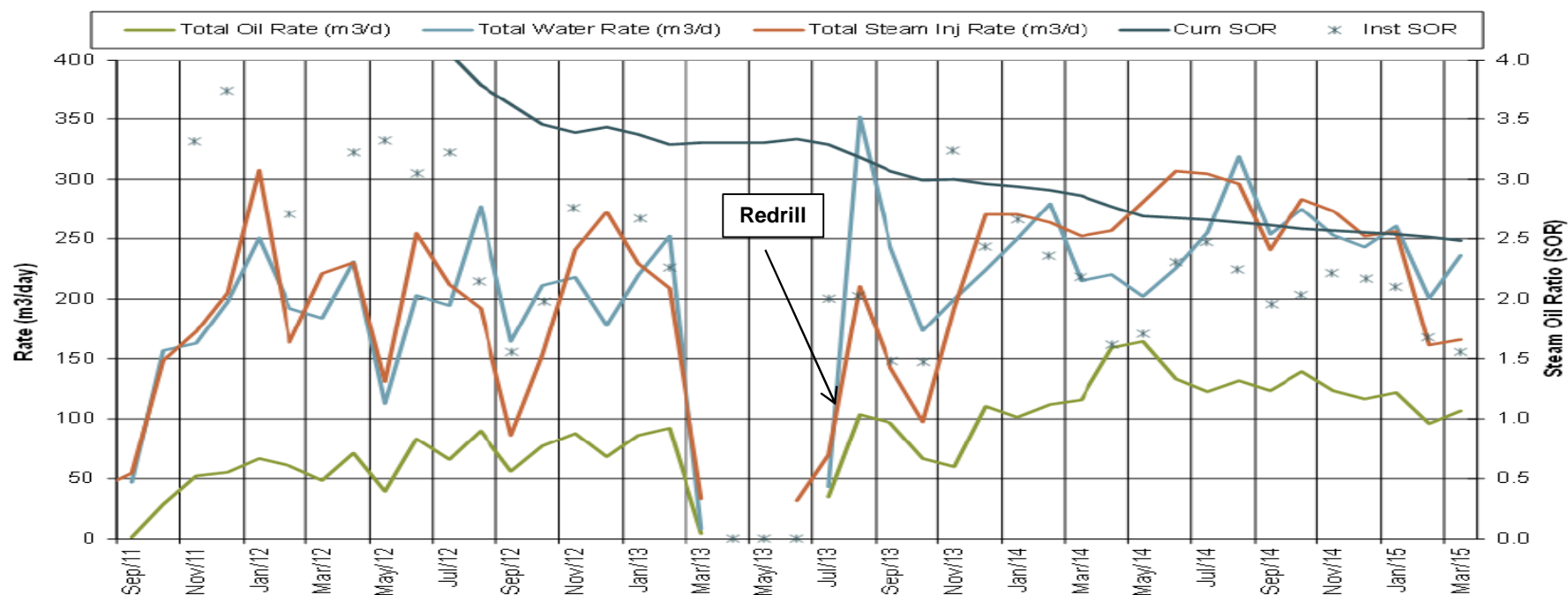


Time-lapse seismic: W02 Pair 3



W02-03 performance plot

W02-03 Well Pair Performance

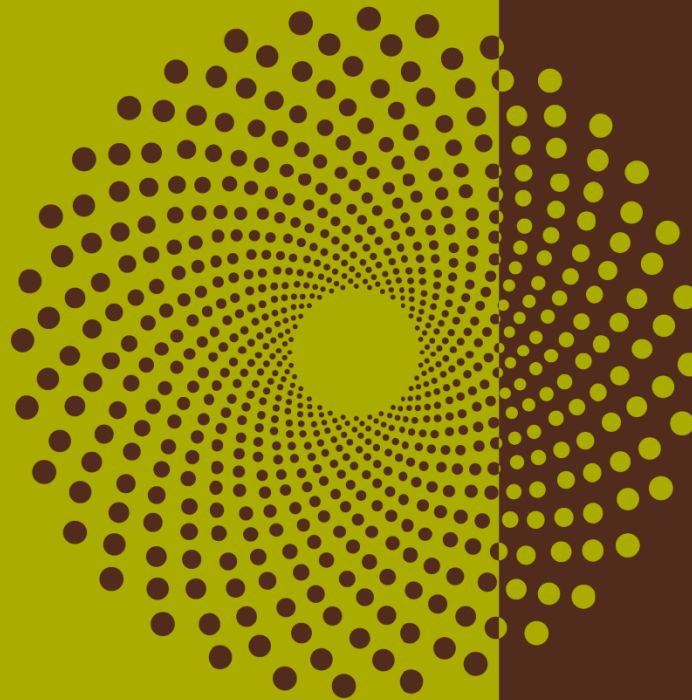


W02 pad conclusions

- **Pad recovery expected to be ~70% of SOIP**
- **Pad is merged with central pod**
- **Optimization of pad underway after remedial work**
- **Currently at 20% recovery of SOIP**

OBIP – medium example E16 pad

Subsection 3.1.1 – 7 c, iii)

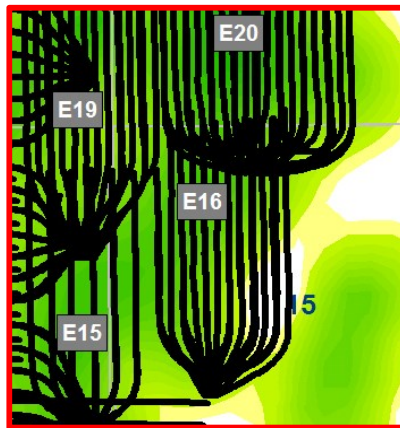


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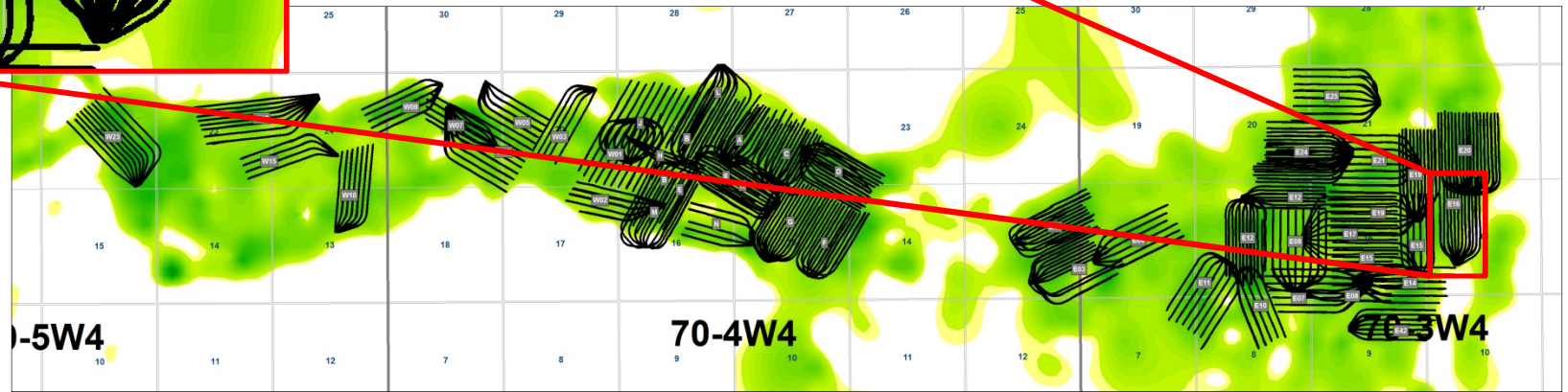
E16 pad overview

- **E16 pad began production in August 2008 (six pairs)**
- **Steam stimulation start-up method was successful for all pairs**
- **Geology consists of thick to moderately thick channel sands that are fairly consistent throughout, pay trend and thickness slopes down dip to the east**
- **Expected ultimate recovery of this pad is 72% of SOIP**
- **Overall performance is very good to date, with a CSOR of 2.33**
- **Wells utilizing our patented Wedge Well™ technology were drilled in Q4 of 2013**

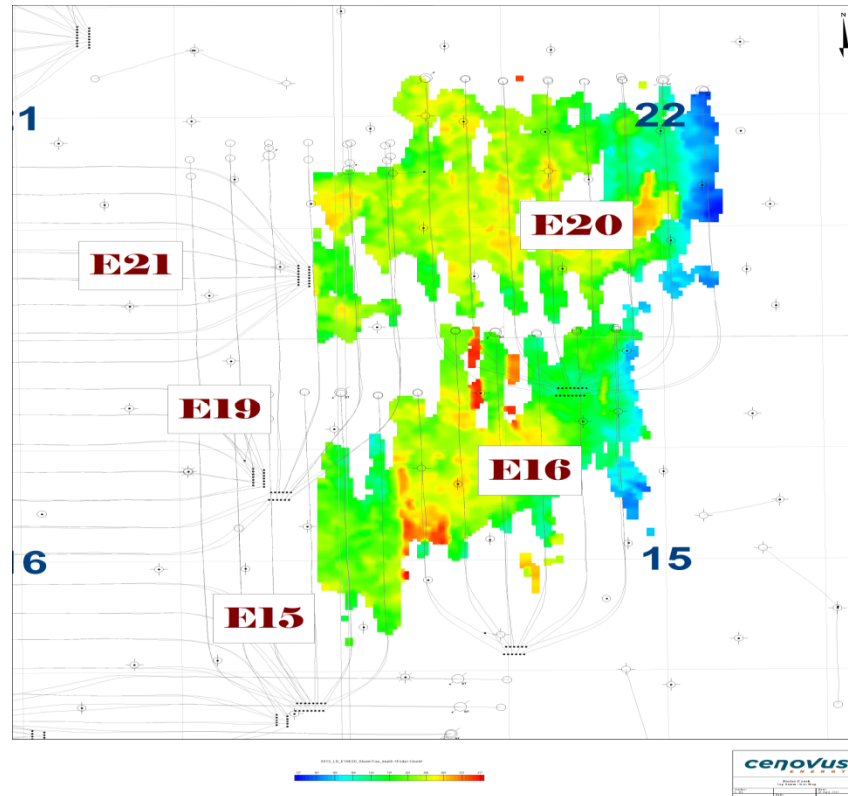
E16 Pad SAGD Pay



Production Date: October 2008
Standoff: 0 – 5 m
pairs: 6 drilled
Pay trend: thick to variable



E16 and E20 4D seismic (2012)



E16 pad - extent of chamber development

PAD	PAIR	SOIP Mm3	POIP Mm3	Cum Oil Mm3	% Recovery SOIP	% Recovery POIP
E16 PAD	E16-01	515	490	357	69	73
E16 WEDGE	E16W01					
E16 PAD	E16-02	689	659	427	62	65
E16 WEDGE	E16W02					
E16 PAD	E16-03	696	575	347	50	60
E16 WEDGE	E16W03					
E16 PAD	E16-04	586	527	256	44	49
E16 PAD	E16-05					
E16 PAD	E16-05	508	442	194	38	44
E16 WEDGE	E16W05					
E16 PAD	E16-06	492	426	194	39	46
E16 WEDGE	E16W06					
Total	E16 PAD	3,486	3,119	1,775	51	57

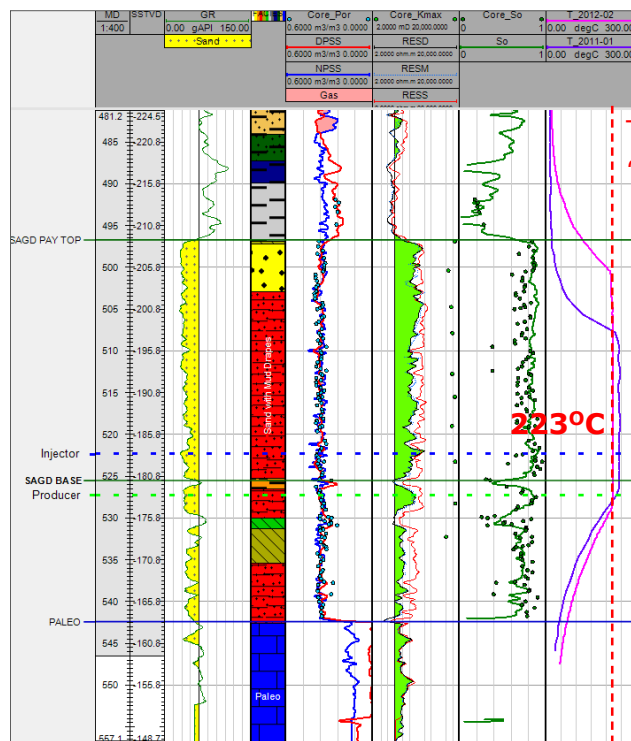
Expected ultimate recovery (72% of SOIP) = 2,512 Mm3

To March 31, 2015

E16 Pad Temperatures

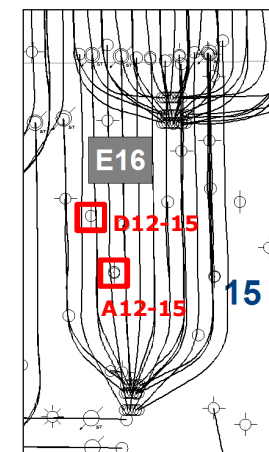
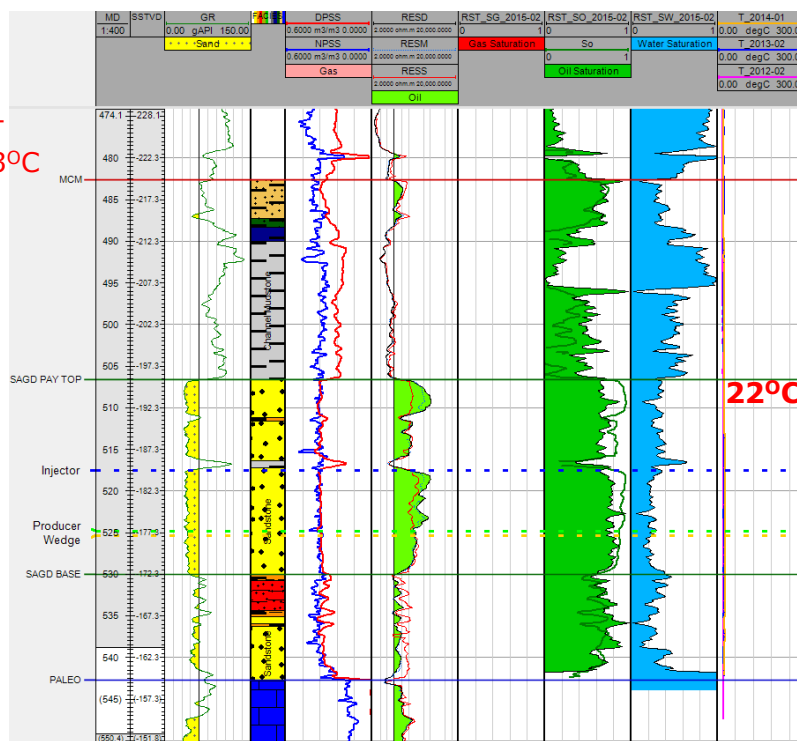
12m away from E16-02 well pair

D12-15

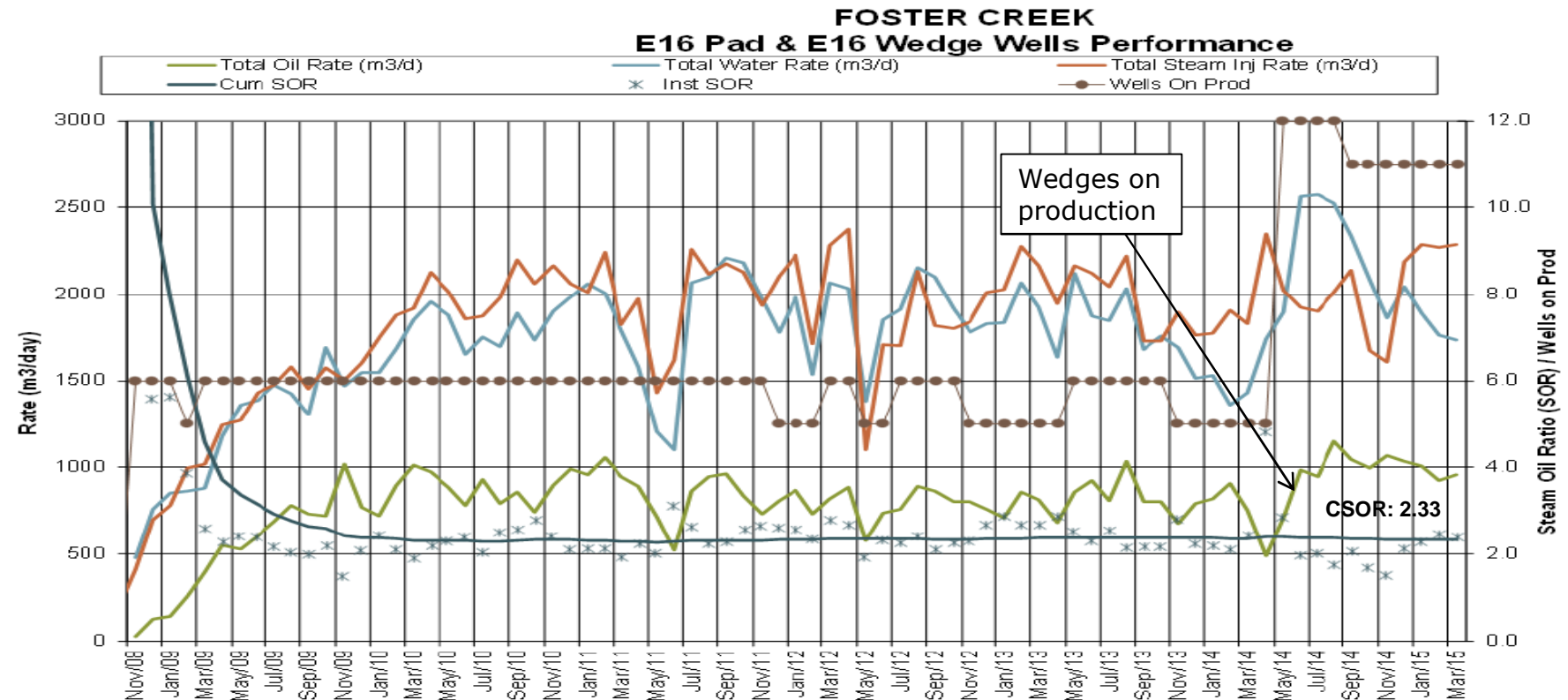


37m away from E16-03 well pair

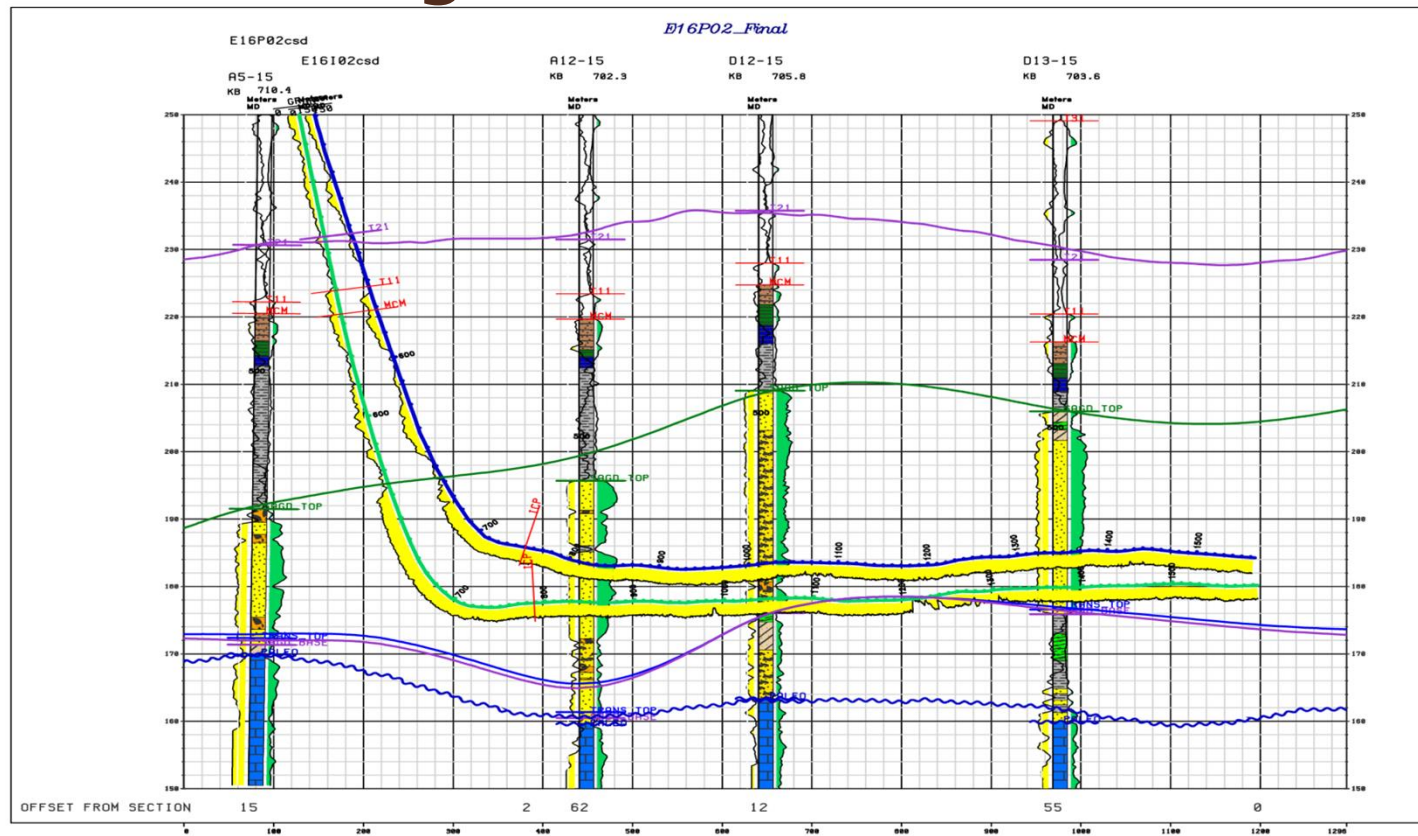
A12-15



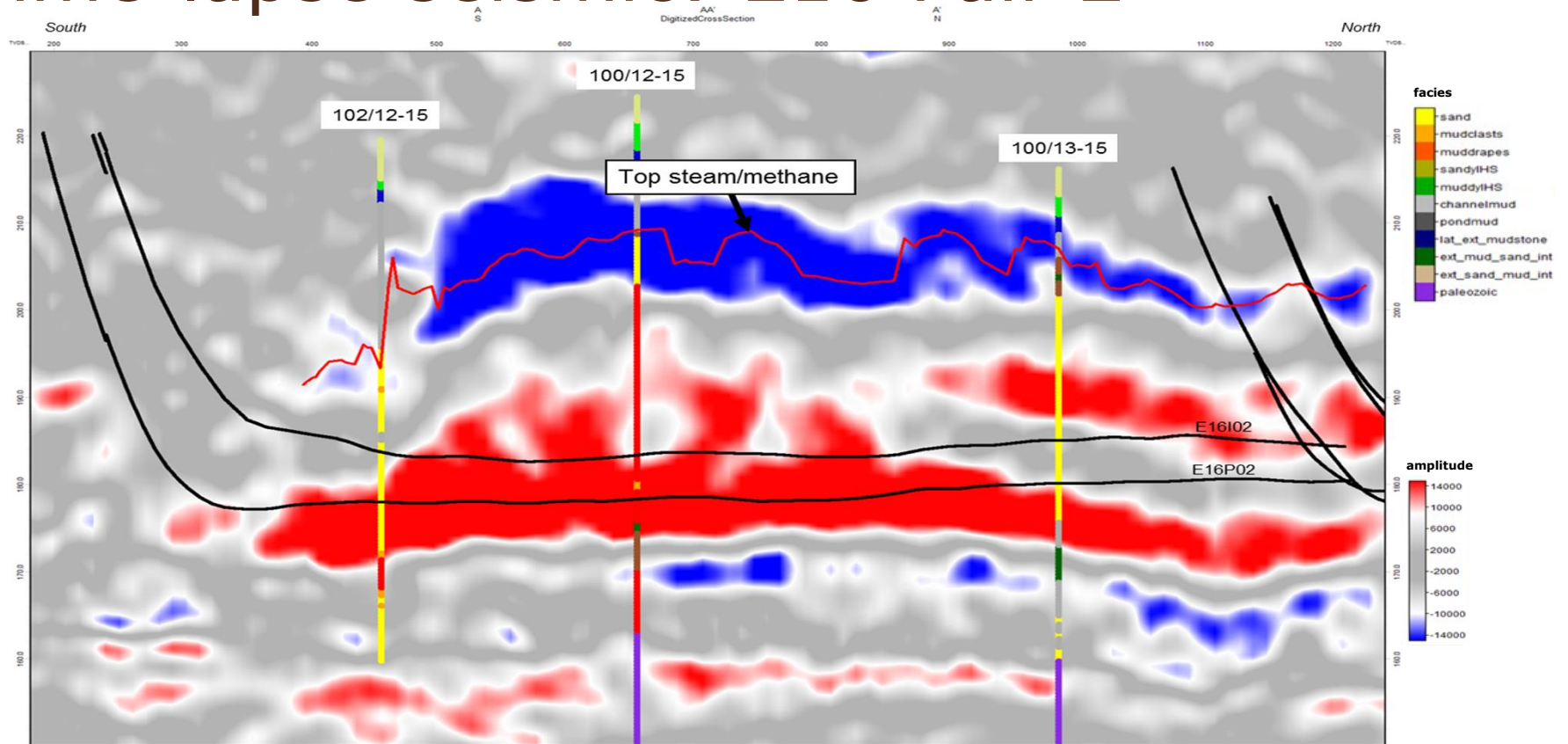
E16 pad performance



E16-02 Geological Profile

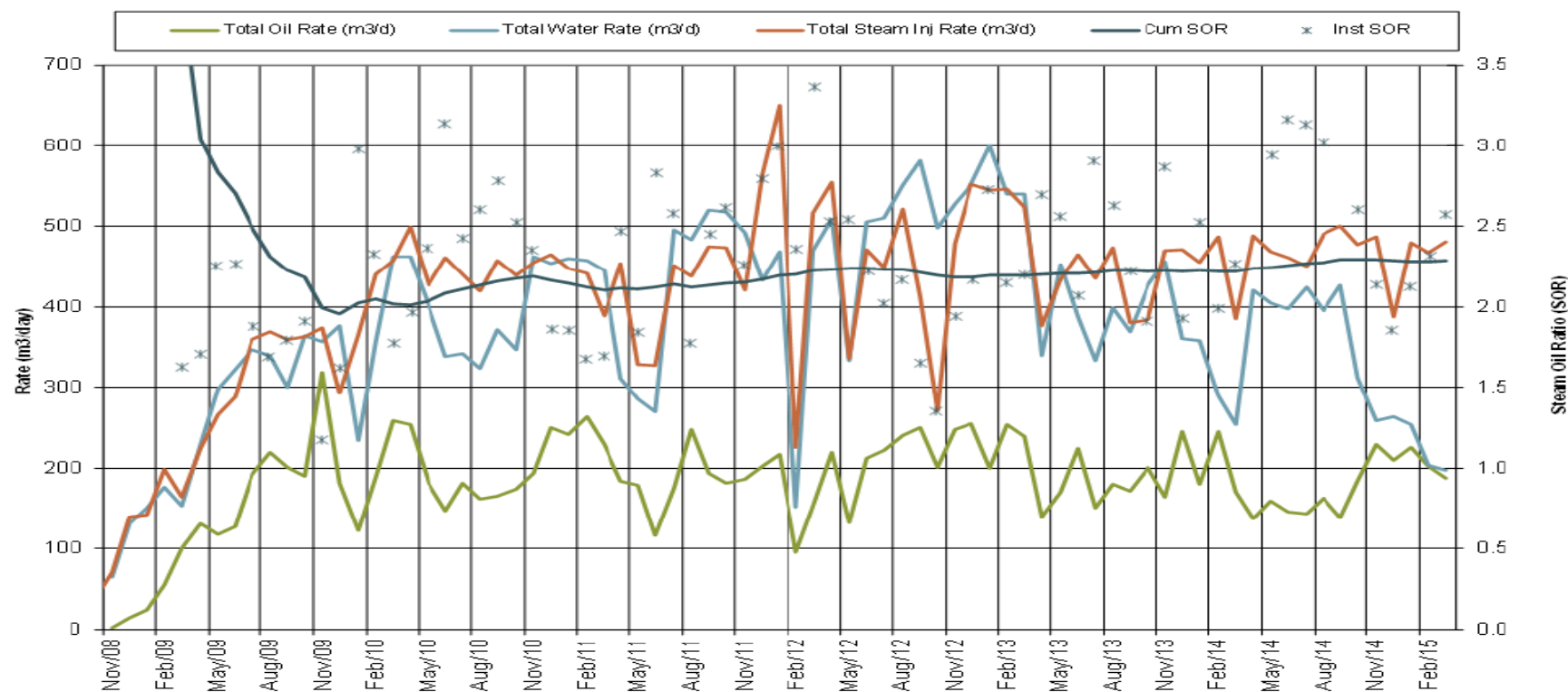


Time-lapse seismic: E16 Pair 2



E16-02 well pair performance

E16-02 Well Pair Performance



E16 pad conclusions

- Ultimate recovery is based on 72% of SOIP
- Differences between POIP and SOIP are primarily due to standoff from SAGD base
- Ramp up took approximately 20 months to hit peak rates
- 4D seismic was shot in 2012, showing good chamber growth along pairs 1 – 4; remedial work was performed on pairs 5/6 which were redrilled to improve conformance and chamber growth
- Wells utilizing our patented Wedge Well™ technology on production June 2014
- Will continue to use observation wells to help determine changes to steam chamber growth in the future

OBIP – high example

G pad

Subsection 3.1.1. – 7c, iii



G pad overview

- **G pad began production in October 2005 (six pairs)**
- **Thick and high quality geology with slight variation in the depth of the SAGD base and a relatively lower SAGD top at the heel of all the wells**
- **All wedges were started in Q4 of 2009 and Q1 of 2010**
- **Steam decline in mid 2010 to operate pad at central pod pressure, pad production performance as expected**
- **Currently total recovery is 76% of SOIP**

G pad - extent of chamber development

PAD	PAIR	SOIP Mm3	POIP Mm3	Cum Oil Mm3	% Recovery SOIP	% Recovery POIP
G PAD	GW01	0	0	55		
G PAD	G1	580	422	327	68	93
G PAD	GW02	0	0	74		
G PAD	G2	644	413	306	62	97
G PAD	GW03	0	0	116		
G PAD	G3	687	471	369	70	102
G PAD	GW04	0	0	109		
G PAD	G4	647	470	308	68	94
G PAD	GW05	0	0	156		
G PAD	G5	396	261	267	102	154
G PAD	GW06	0	0	113		
G PAD	G6	312	237	224	100	132
G PAD	GW07	0	0	65		
Total	G PAD	3,265	2,274	2,490	76	110

- only ½ of the cum production from GW01 is shown, the other ½ is allocated to F Pad

To March 31, 2015

G Pad SAGD Pay

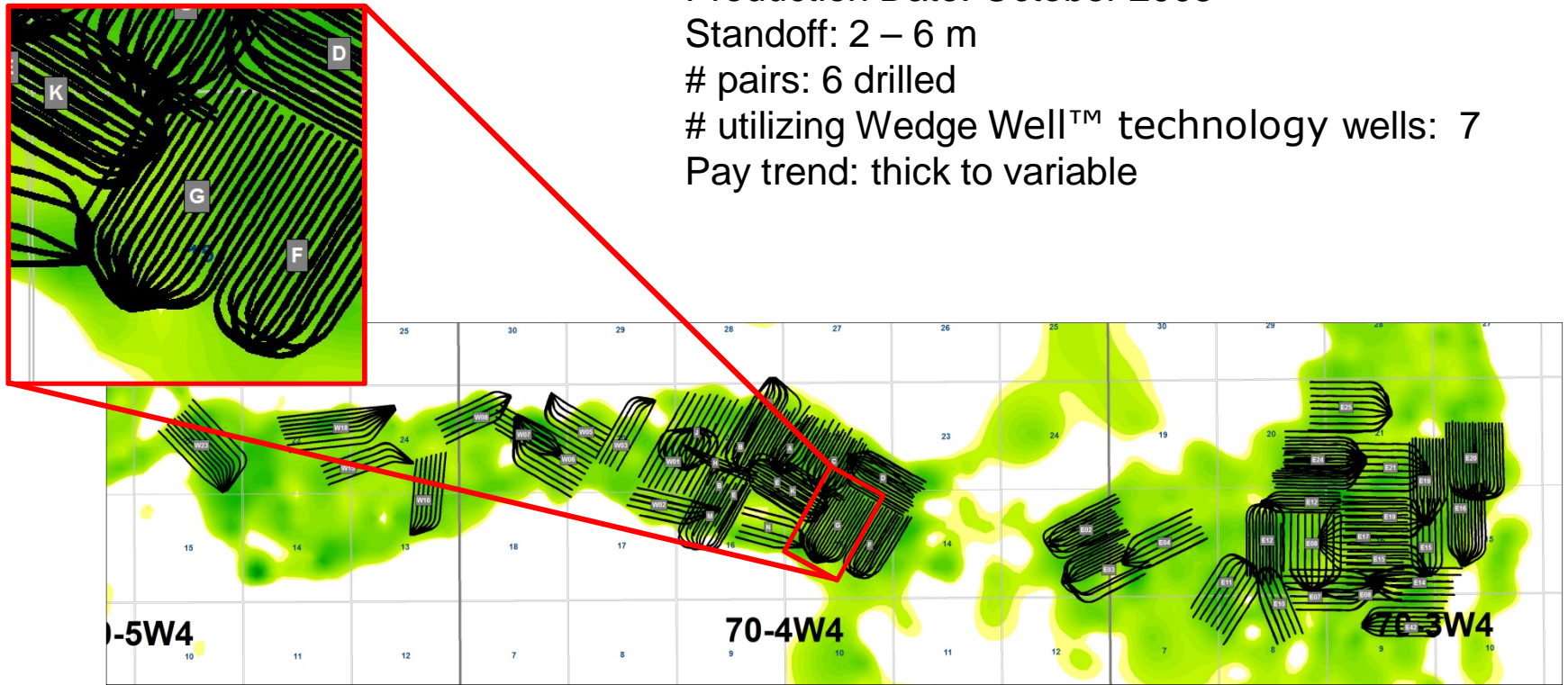
Production Date: October 2005

Standoff: 2 – 6 m

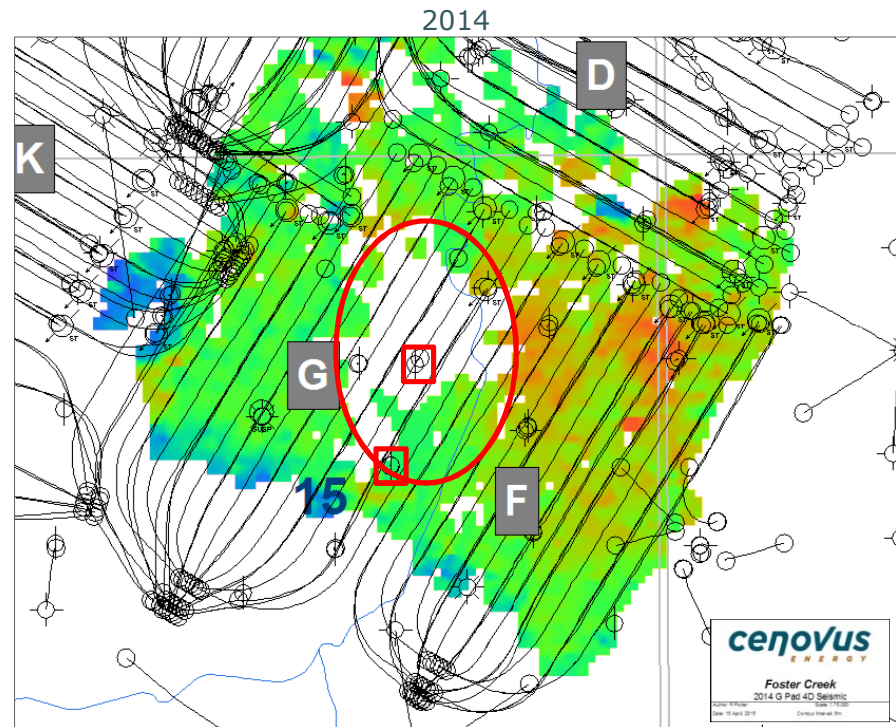
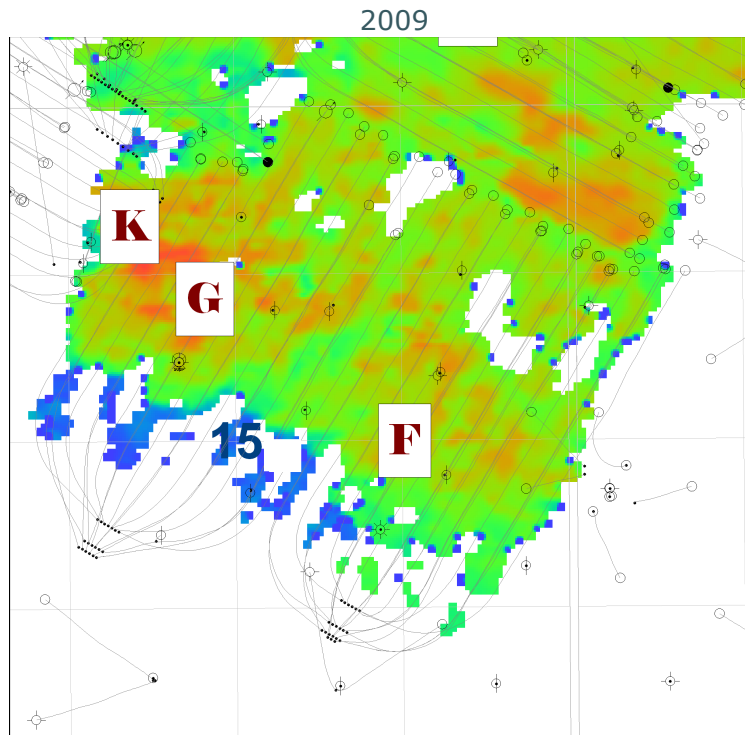
pairs: 6 drilled

utilizing Wedge Well™ technology wells: 7

Pay trend: thick to variable



G Pad 4D Seismic (2009 vs 2014)

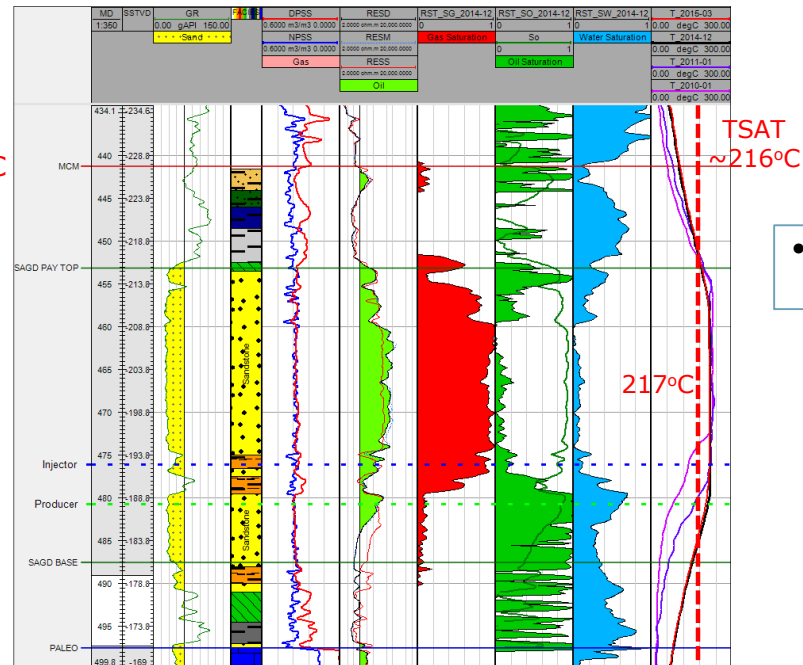
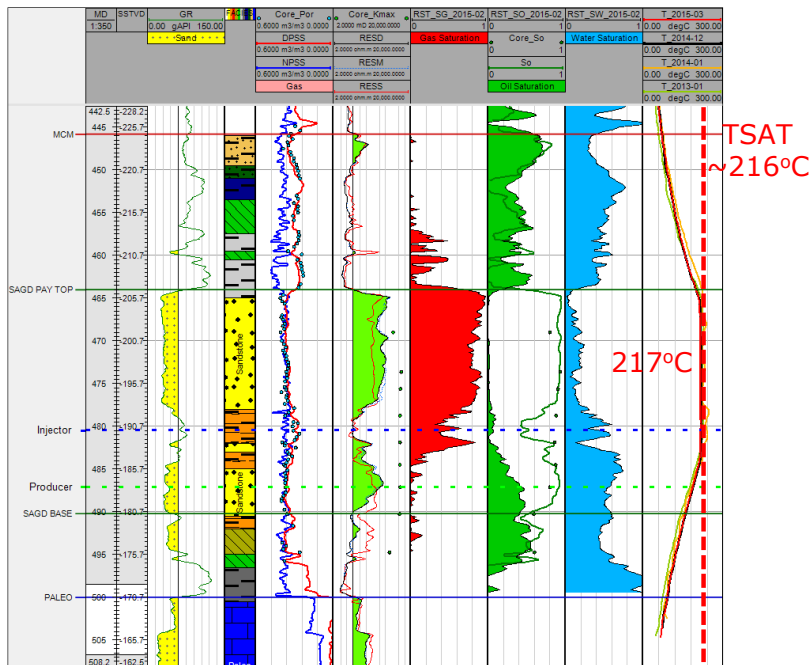
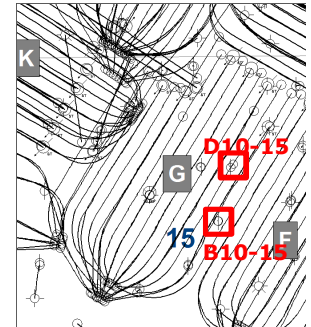


Poor quality seismic data, acquisition related,
existing steam chamber still present

G Pad Temperatures

17m away from G-01 well pair
B10-15

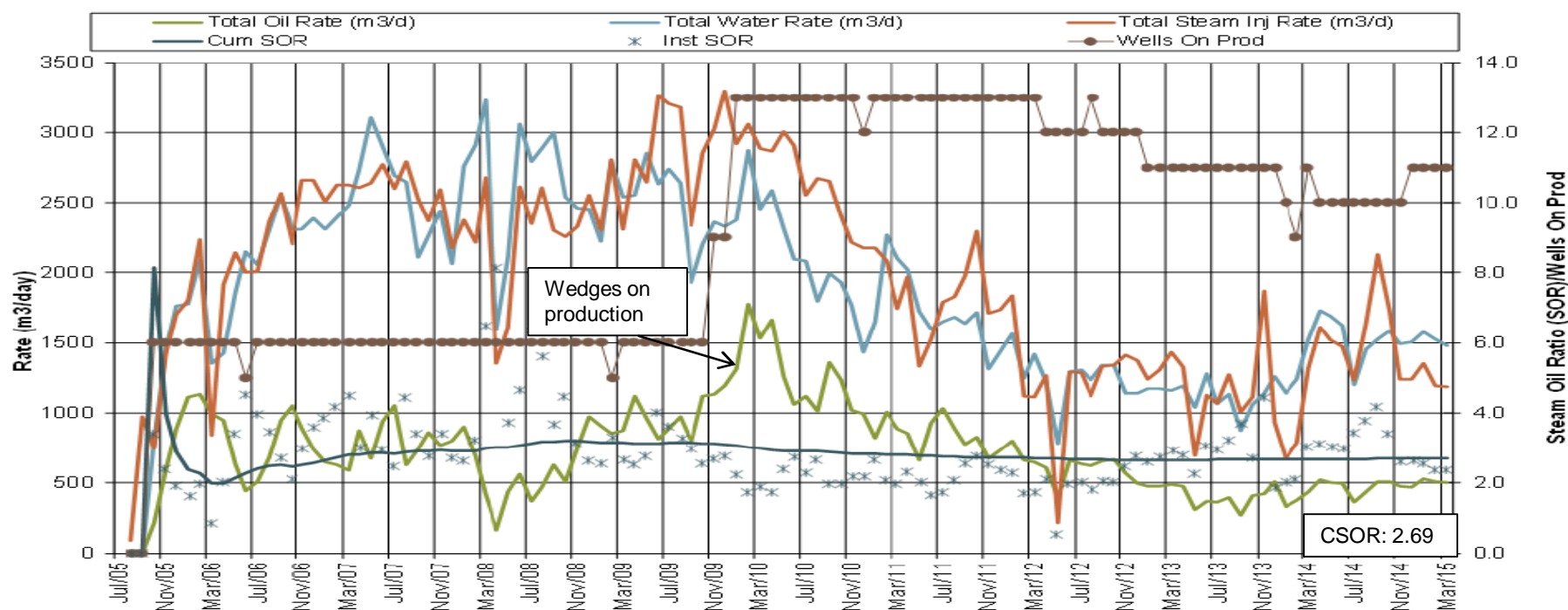
46m away from G-01/02 well pair
D10-15



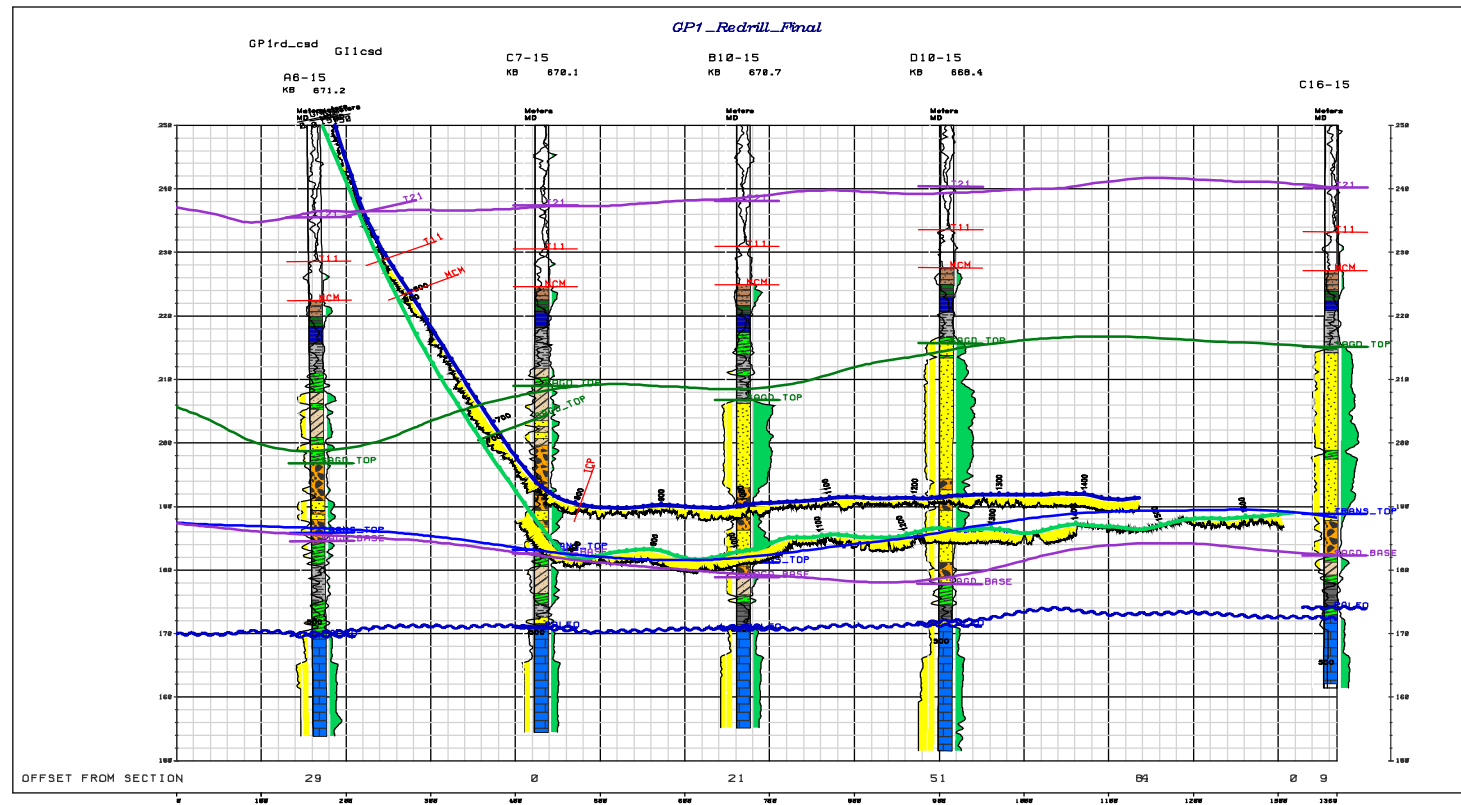
- New baseline RSTs

G pad performance

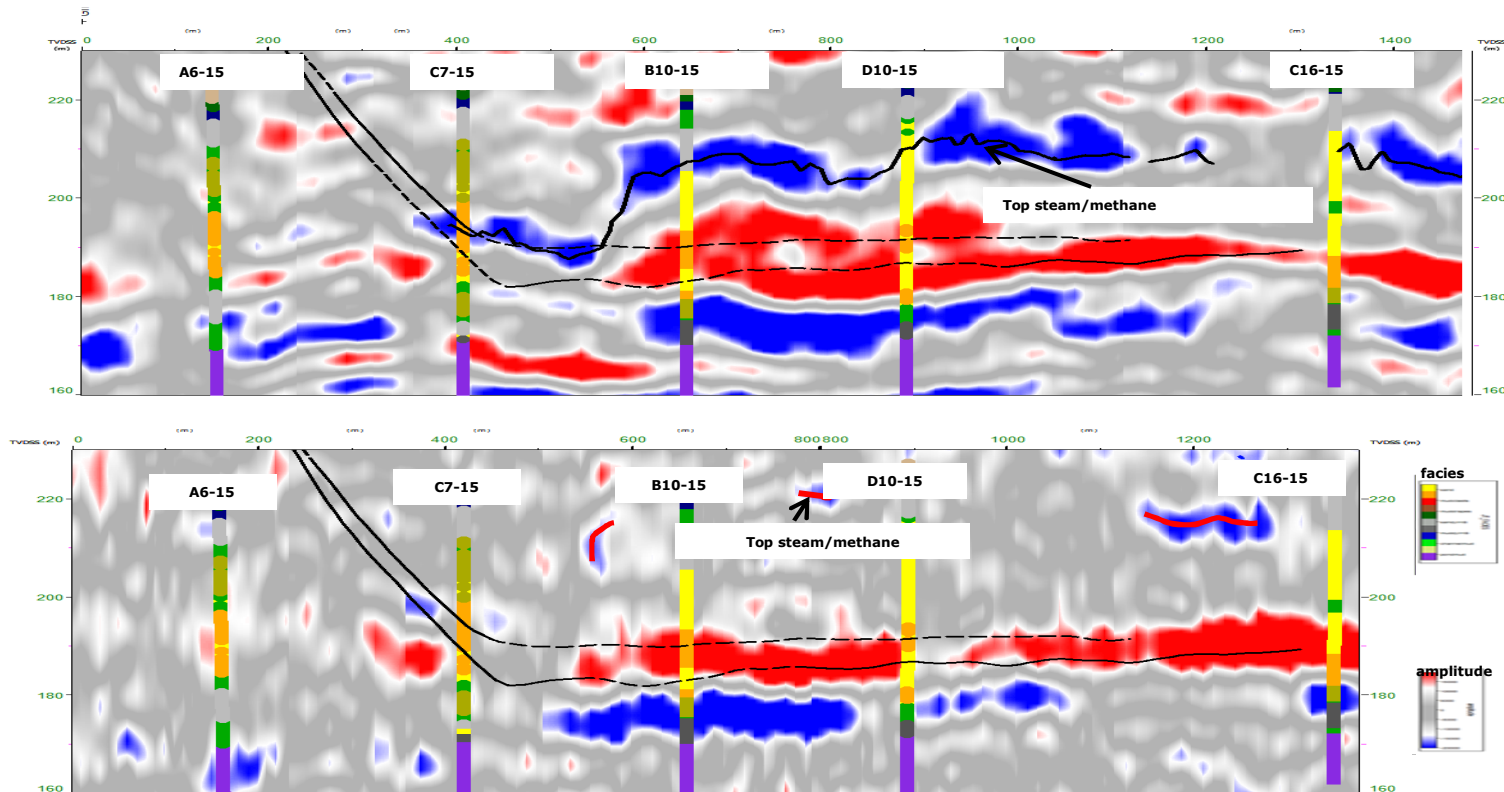
**FOSTER CREEK
G PAD & G Wedge Wells™ Performance**



G-01 Geological Profile



Time-lapse seismic: G-01 (2009 VS 2014)



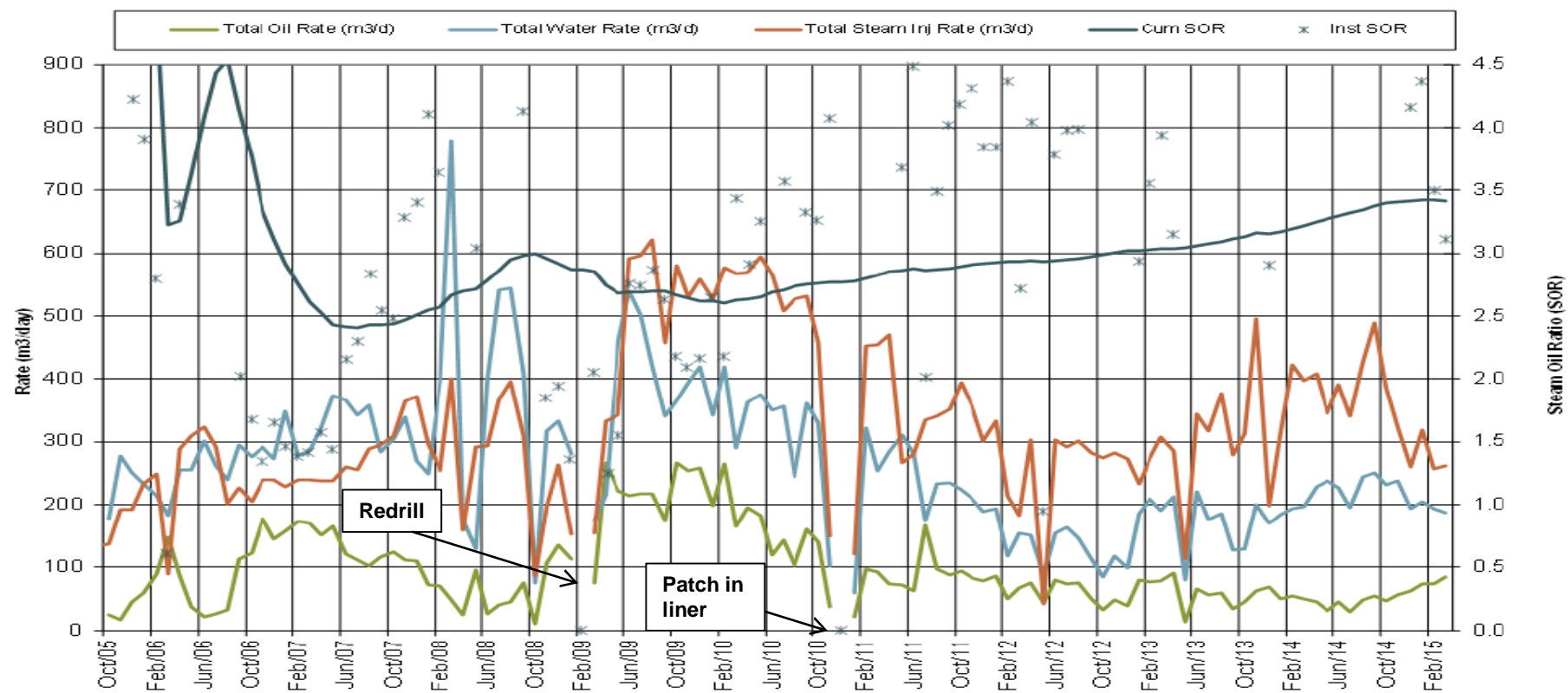
2009

2014

2014 seismic quality was affected by the surface constraint. It is hard to interpret steam top.

G-01 well pair performance

G-01 Well Pair Performance

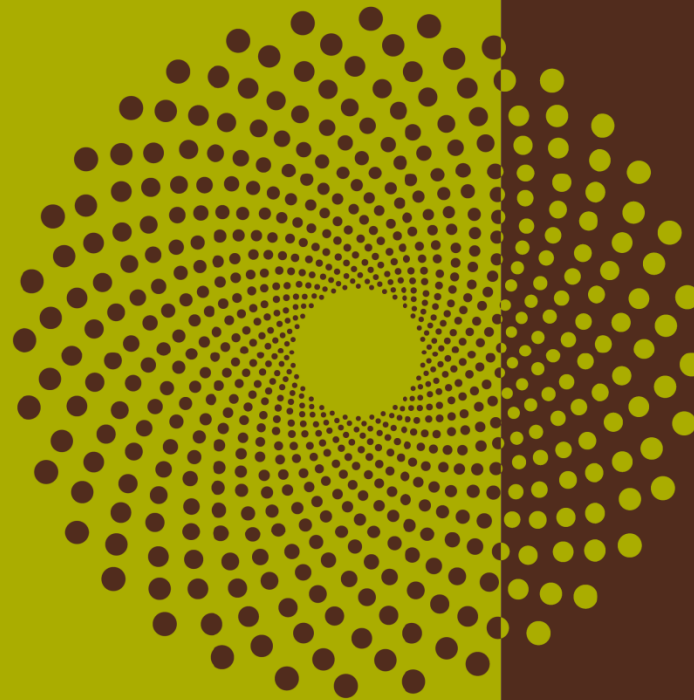


G pad conclusions

- **Higher than anticipated recovery a result of:**
 - wells drilled utilizing our patented Wedge Well™ technology have been successful
 - lower than anticipated residual oil saturations (15% vs. less than 10%)
- **G pad expansion, drilled new wells in 2014 at 80 m spacing to the west of G pad**

Pad abandonments

Subsection 3.1.1 – 7c, iv)

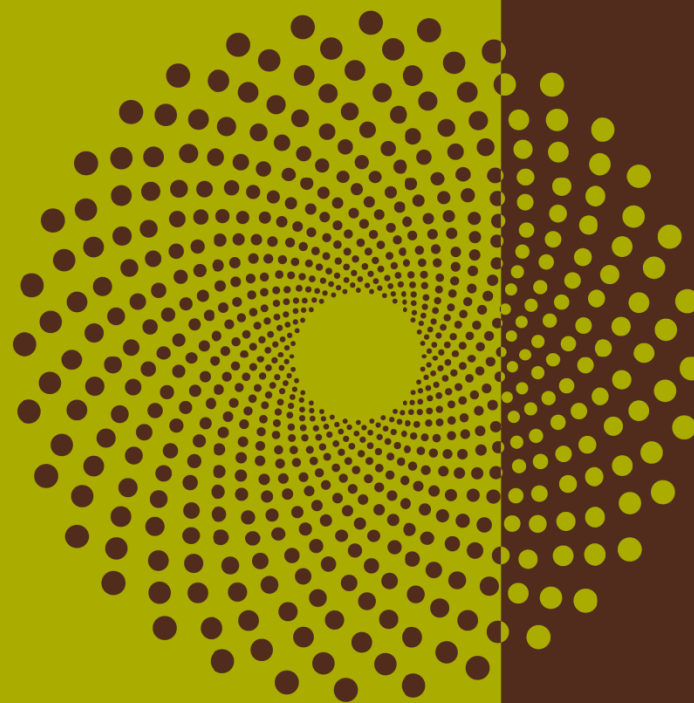


Pad abandonments

No pad abandonments are currently planned at Foster Creek in the next 5 years

Steam quality

Subsection 3.1.1 – 7d)



Steam quality

- Steam quality will be impacted by pipeline size and distance
- Currently at Foster Creek the steam qualities under normal operation conditions are as follows:
 - central ~ 95%
 - east ~ 94%
 - west - Designed to be ~ 95% as development continues
- Steam is delivered to pads at approximately 7000 – 9000 kPa
- Steam quality is not expected to impact well performance at this time

Injected fluids

Subsection 3.1.1 – 7e)



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Injected fluids

Non-condensable gas

- methane injection started for A Pad in Q1 2012, C Pad in Q4 2011, D Pad in Q3 2010, F Pad in Q2 2014, and G Pad in Q2 2014

Acid treatments

- wells occasionally treated with HCl to minimize skin

Solvent

- have used solvent in start-up work-overs and have approval to use this as a potential start-up process

CO₂

- injected in E03I05 and E03I06
- pilot concluded in Q4 2013

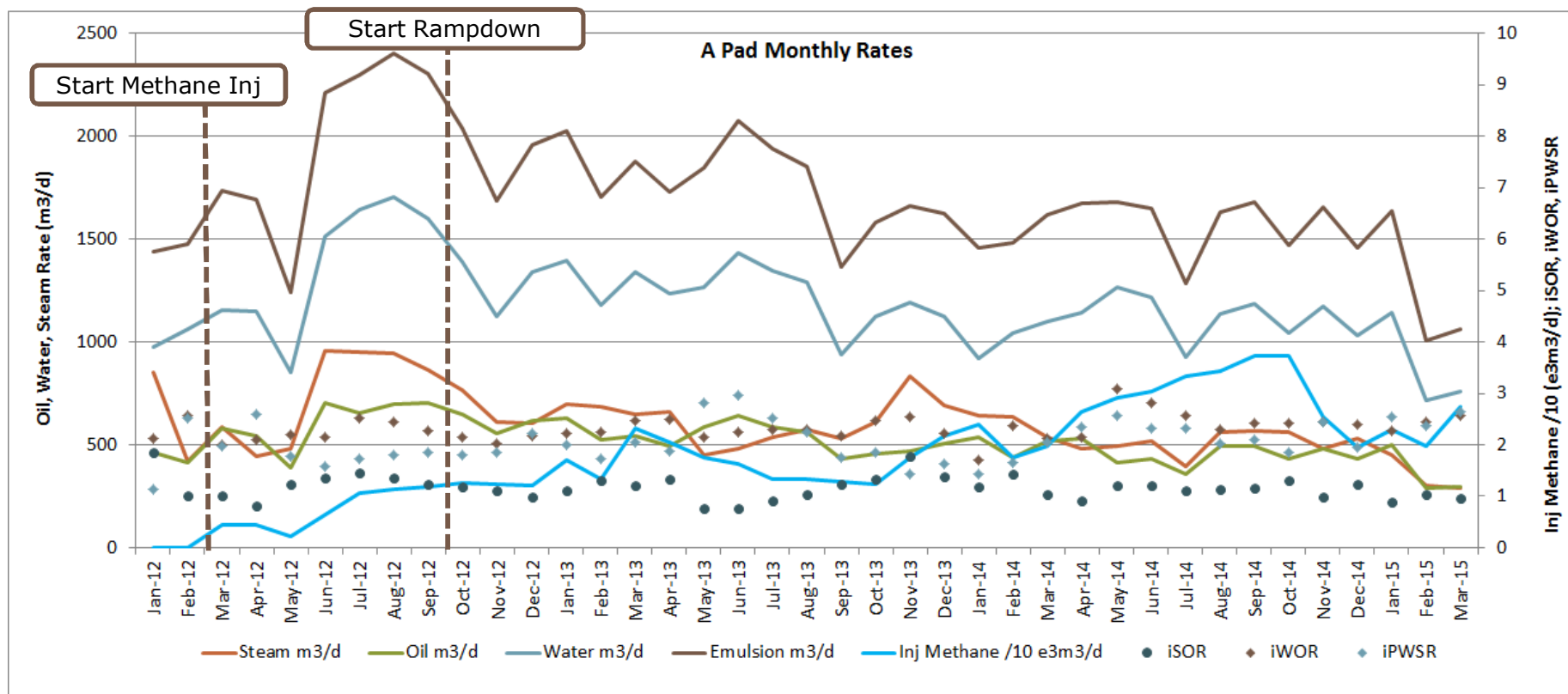
2014 key learnings

Subsection 3.1.1 – 7f)



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A pad blowdown

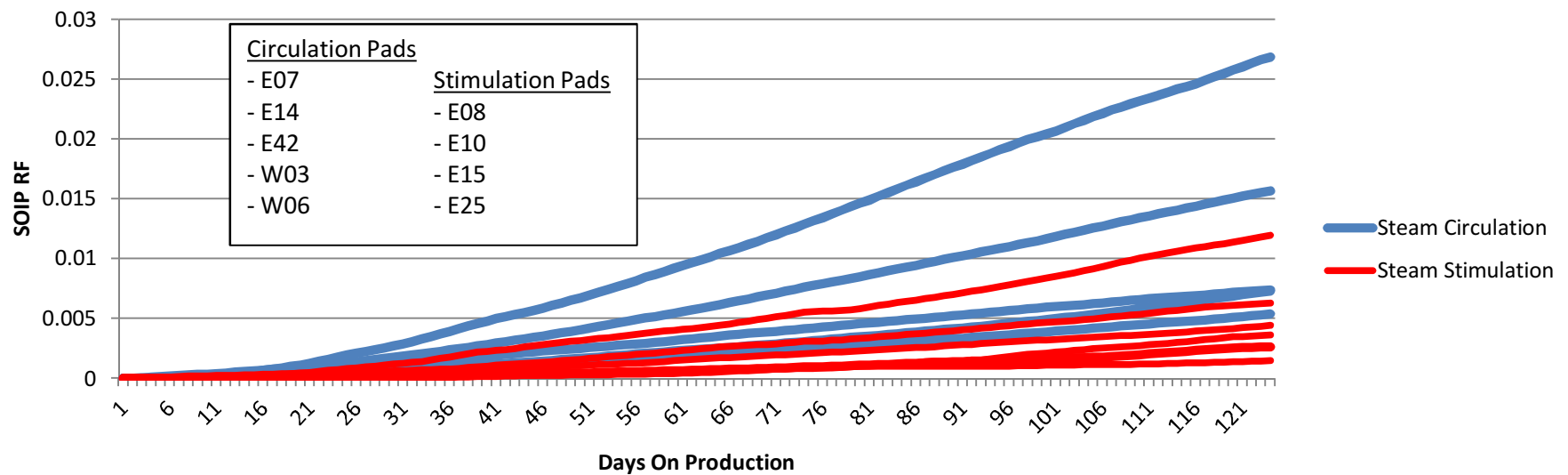


A Pad blowdown

- **Methane injection started in Mar 2012**
- **Rampdown of steam started Sep 2012**
- **Currently in last phase of rampdown**
- **Full blowdown expected Q2 2015**
- **Continue to balance pressure with methane injection**
- **Production declines have been better than initially forecast during rampdown**

Circulation Startup

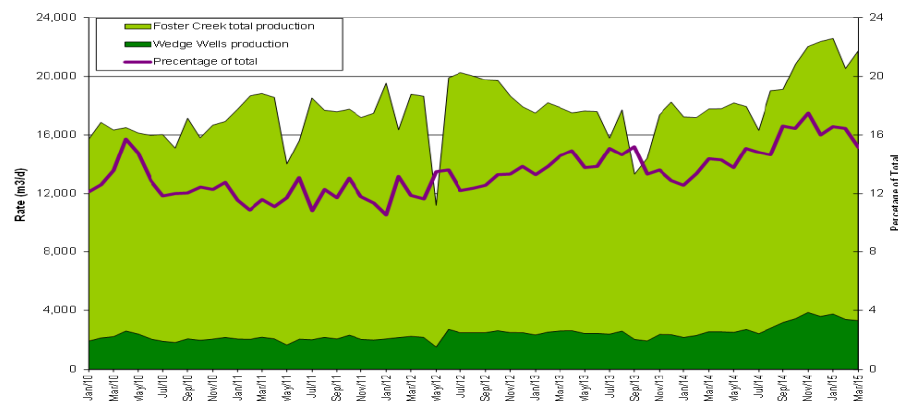
RF vs Time Comparison - Steam Circulation vs Steam Stimulation



Circulation is go forward startup strategy due to improved conformance and production rampup as compared to a bullhead start

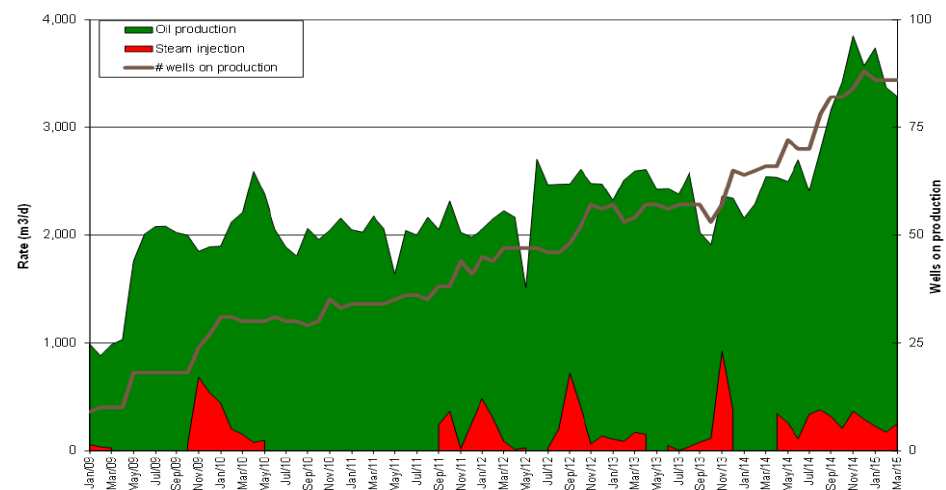
Wedge Well™ technology update

Foster Creek Wedge Well™ technology Production



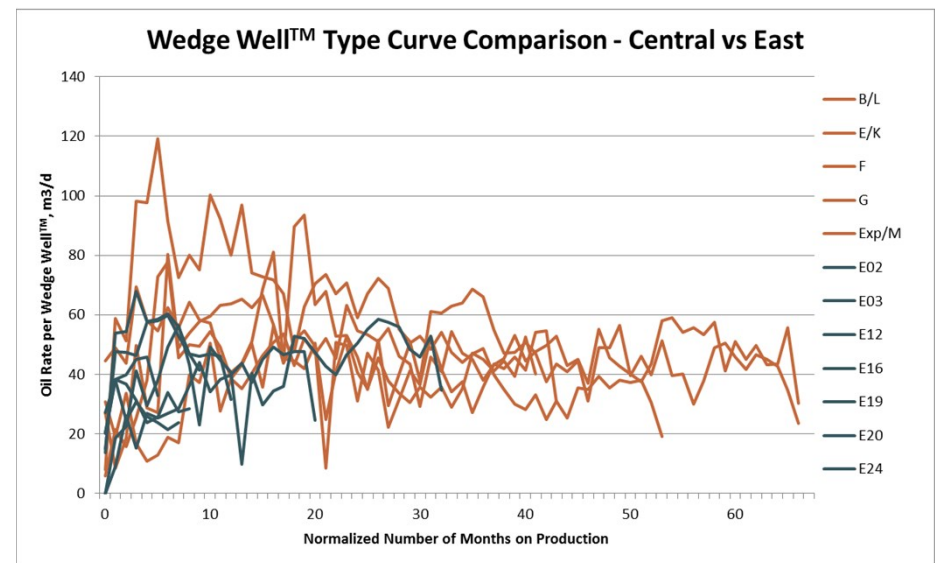
Wells drilled with Wedge Well™ technology	On Production Date	# Wells
A Pad	July 2005	7
B / L Pad	September 2011	5
C Pad	May 2009	8
D Pad	January 2008	6
E / K Pad	November 2010	5
Exp / M Pad	November 2011	5
F Pad	November 2009	6
G Pad	November 2009	7
E24 Pad	October 2012	10
E12 Pad	October 2013	9
E16 Pad	May 2014	6
E20 Pad	August 2014	8
E02 Pad	September 2014	6
E03 Pad	September 2014	5
E19 Pad	December 2014	6

Foster Creek Wedge Well™ technology Production



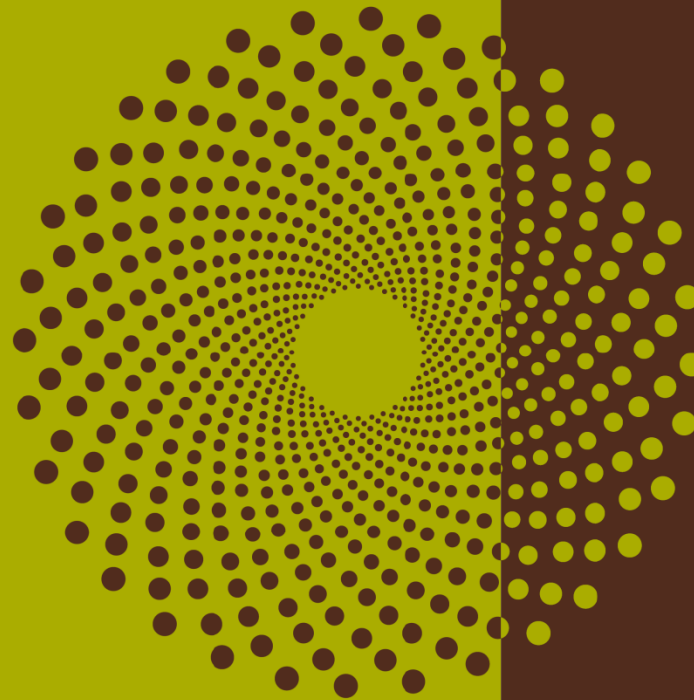
East vs Central Wedge Well™ performance

- Majority of East Wedge Well™ pads came online in 2014
- Type curves fall within the range of the 5 most of the recent Central pads



Pad performance plots

Subsection 3.1.1 – 7h)

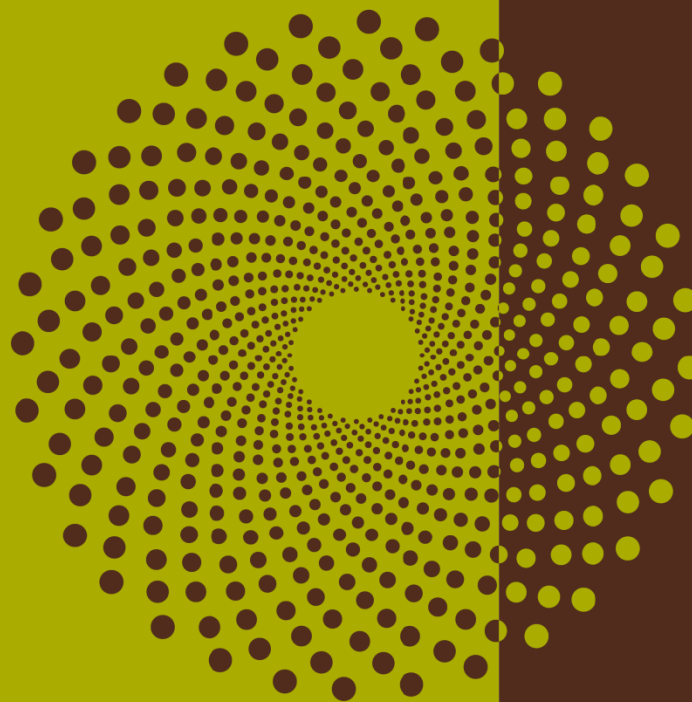


Subsection 3.1.1 – 7 h) – pad performance plots

Requirements under Subsection 3.1.1
7 h) are located in the Appendix

Future plans 2015 initiatives

Subsection 3.1.1 - 8



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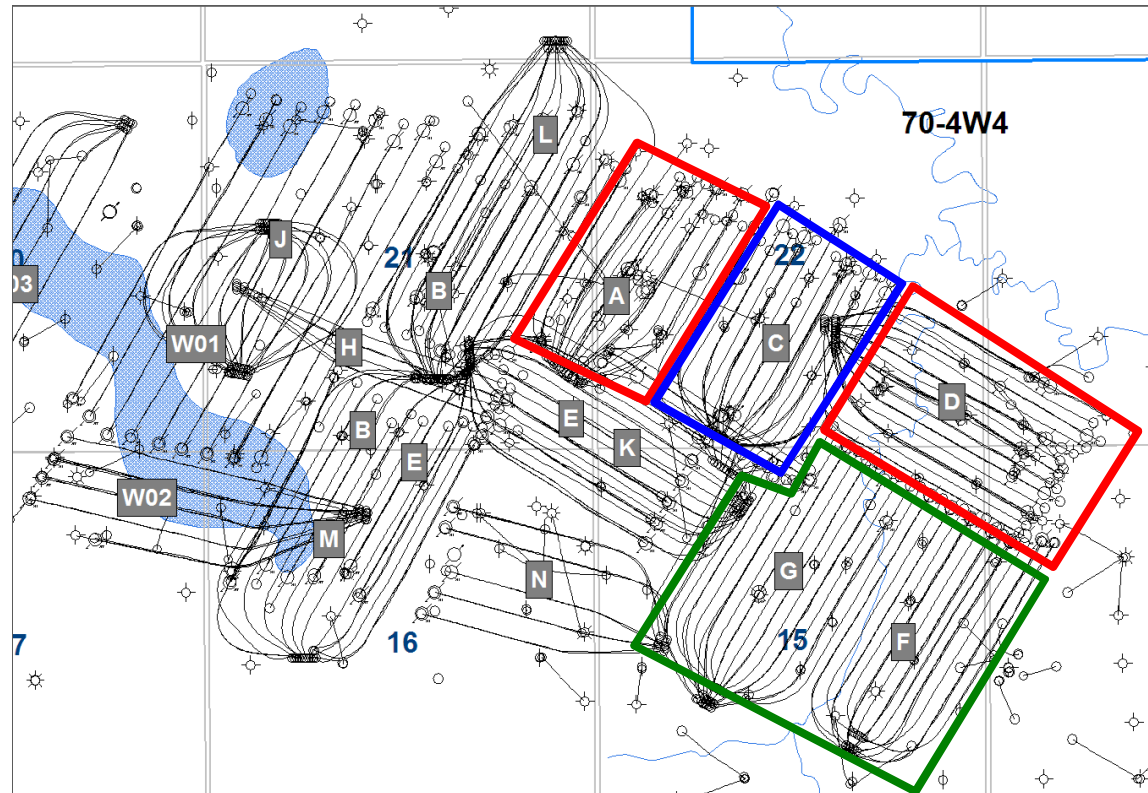
Steam Rampdown

**C Pad on
blowdown Q1,
2013**

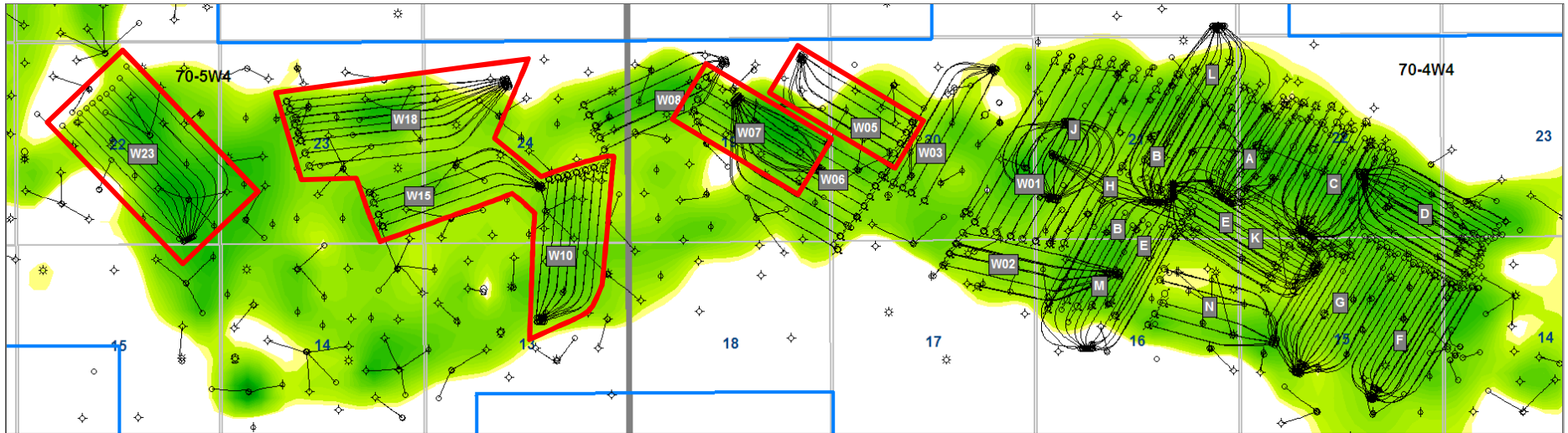
**D pad on
blowdown Feb,
2015**

**A pad on last
phase of
rampdown**

**F & G pads
started
coinjection May
2014**



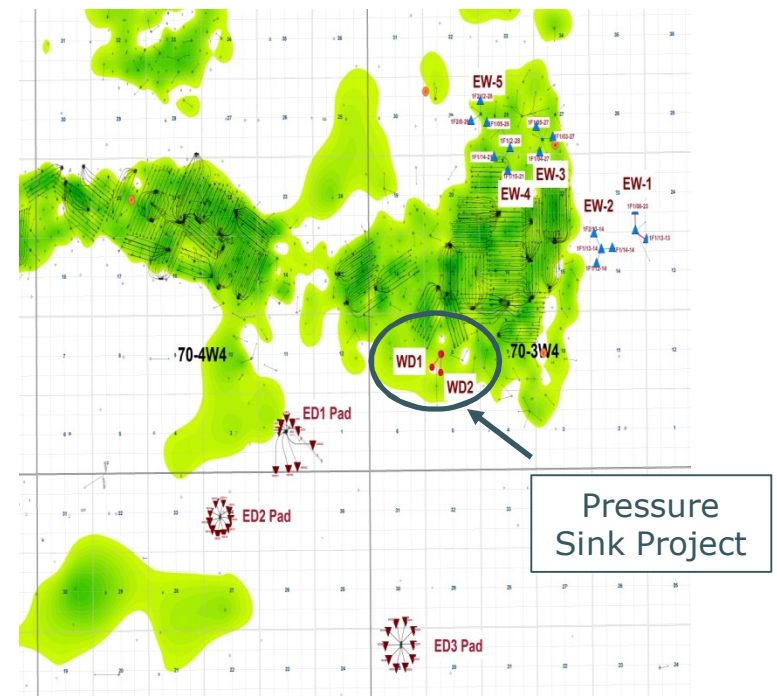
Steam Circulation



Plan to start up all new well pairs with steam circulation as geology permits. The upcoming pads are in the West development area and include W05, W07, W10, W15, W18 and W23.

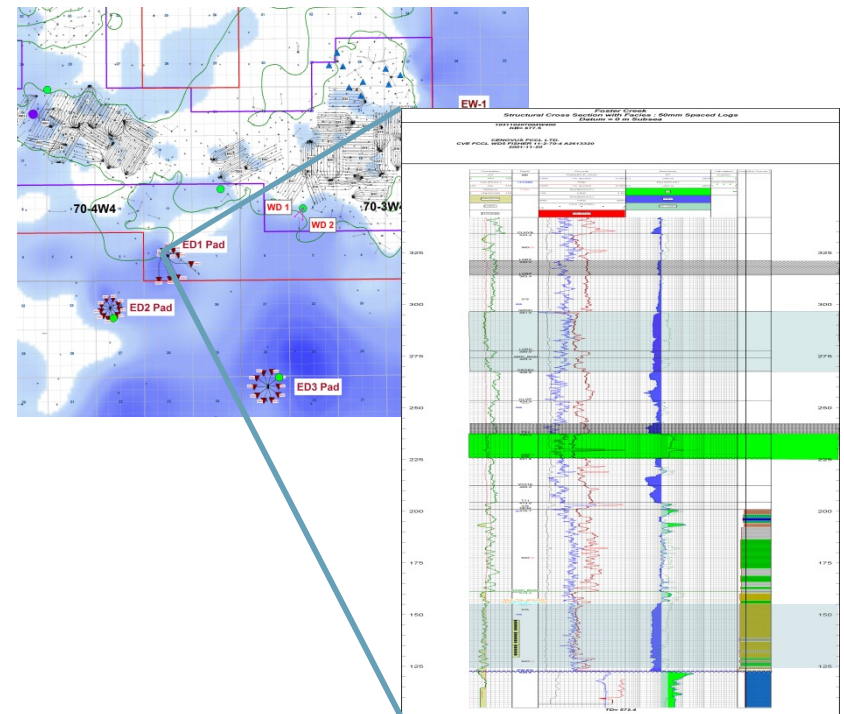
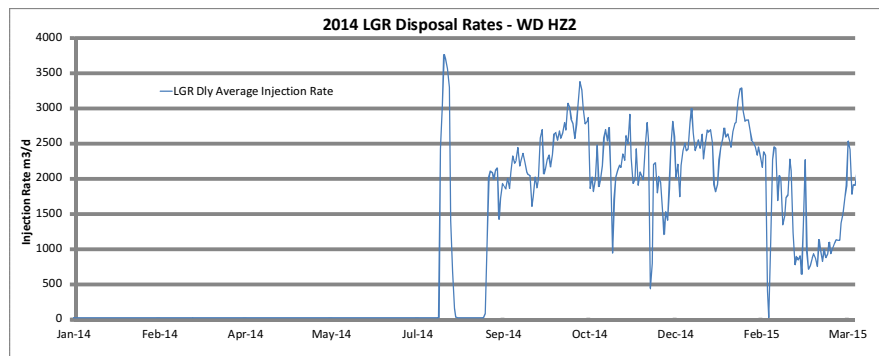
Pressure Sink Project Update

- **Producer & injector wells drilled & completed in 2014**
- **Received D51 approval on March 4, 2015**
- **Engineering completed Q1 2015**
- **Anticipated construction from Q2 – Q3**
- **Scheduled to commission by end of Q4**



Lower Grand Rapids Disposal

- **LGR disposal at ED1**
 - Received AER approval to recomplete an existing McM disposal well into a LGR disposal well
 - Reconfigured WDHZ2 for LGR disposal
 - Brought online on August 2, 2014



2015 initiatives

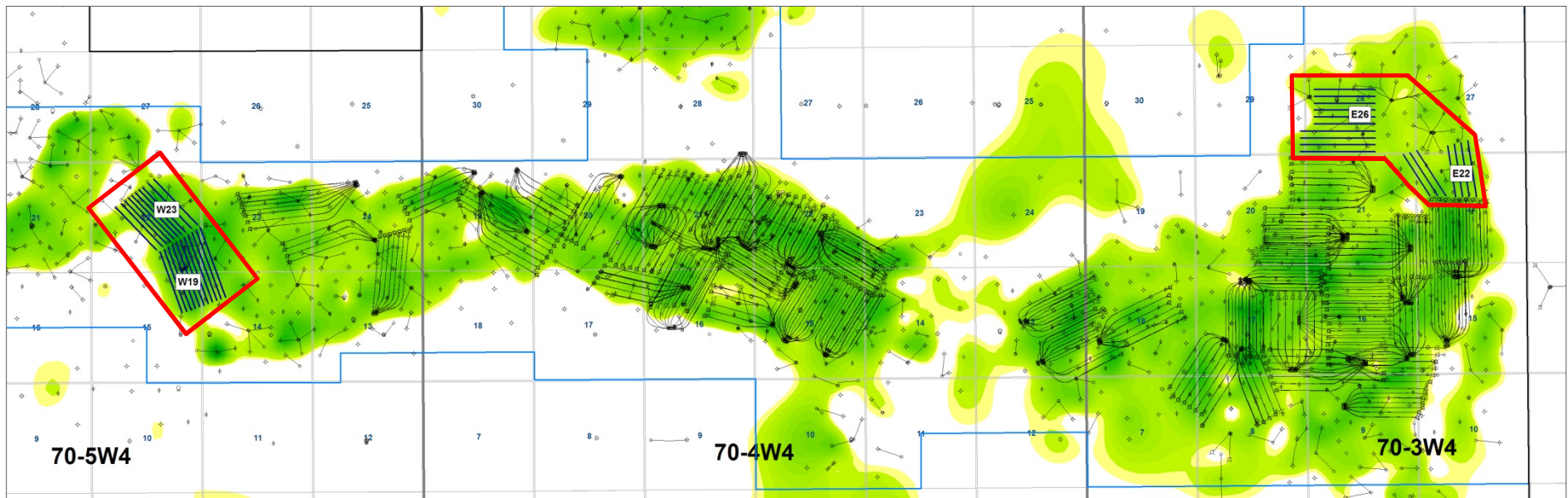
- **Alternate liner trials continue on various pads**
- **Liner and tubing deployed FCDs**
- **Lower Grand Rapids disposal evaluation**
- **Co-injection**
 - surfactant
 - solvent
- **Insulated tubing**
 - Evaluating vendors and technology

Flow Control Devices

- **Currently testing 8 flow control devices**
 - 4 liner deployed ICDs
 - 3 tubing deployed ICDs
 - 1 liner deployed OCDs
- **Improvements in temperature conformance have been observed at most installations to date**
- **Evaluation still ongoing**

Well Name	Well Type	Date Run	Deployment
W05P05	Producer	11/29/2013	Liner Deployed
W08P01	Producer	12/5/2013	Liner Deployed
GP5-1	Producer	1/14/2014	Liner Deployed
E15P11-1	Producer	7/22/2014	Liner Deployed
E16P06	Producer	11/29/2014	Tubing Deployed
FP2-1	Producer	3/19/2015	Tubing Deployed
DF1 Fisher	Producer	1/9/2014	Tubing Deployed
E15I10	Injector	5/1/2014	Liner Deployed

2015-2016 Drilling Plans



East Pads:

- E22, E26

West Pads:

- W19, W23



2015-2016 Drilling

2015 steam strategy plans

- **Cenovus allocates steam to maintain targeted steam chamber operating pressures from pad to pad**
- **As steam rampdown progresses, steam demand for the project will be reduced, allowing the startup of new pads**
- **In 2014 Cenovus increased steam generating capacity through the addition of Phase F**
- **Some steam from the existing A-E facility was used to initiate steam simulation immediately prior to receiving incremental steam from Phase F. A-E pads have been maintained at longer term pressure targets**
- **New steam has been allocated to Phase F pads and existing well pads**

Future projects

- Current capacity is 150,000 bbls/d (23,836 m3/d)

Future phase update

- Cenovus plans to continue advancing phase G in 2015 and targets first oil in the first half of 2016
- Due to significant decrease in crude oil prices, construction work on phases H and J have been deferred

Osprey Pilot

Subsurface



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Osprey Pilot (Clearwater Formation)

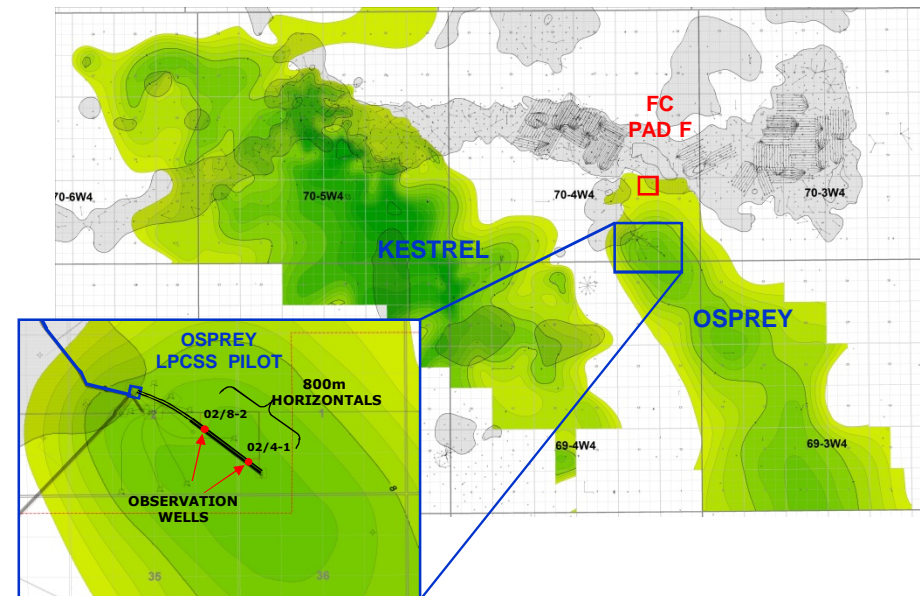
Location: 11-02-70-4W4M

Facilities:

- 2 horizontal wells
- Rod pumps
- 2 BFW tanks & 2 boiler blowdown tanks
- 1 OTSG & steam separator
- Commissioned December 2013
- First steam injection April 30th, 2014
- 4 km south of FC F pad

Operations:

- Low pressure CSS pilot
- Emulsion ties into F Pad
- Fuel gas from F Pad
- Water source for steam from blowdown disposal line
- Osprey disposal ties into the Foster Creek disposal line



Overview (As of Dec 31, 2014)

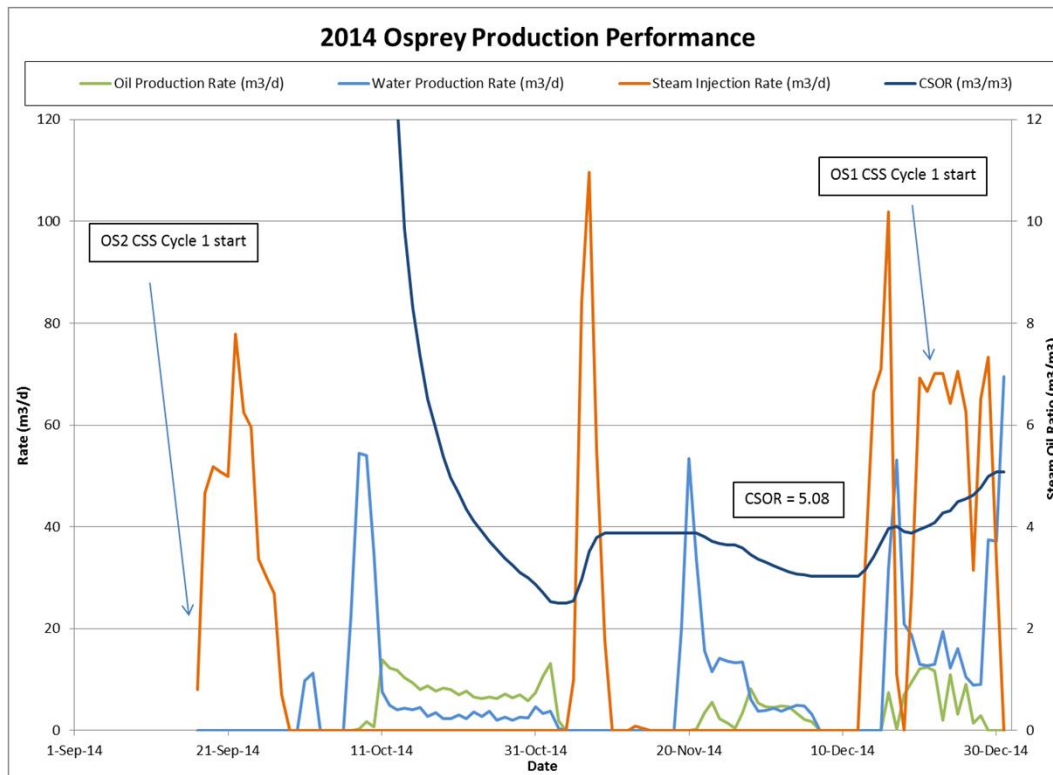
OS1

- **Circulation from August 21 – November 9**
- **Completed 1 cycle**
- **Cum Injection: 535 m³ Cum Produced Bitumen: 621 m³**

OS2

- **Circulation from April 30 – July 8**
- **Completed 4 cycles**
- **Cum Injection: 1165 m³ Cum Produced Bitumen: 1166 m³**

Osprey 2014 Performance Summary



OS2 1st steam cycle:
Sept 17, 2014

OS1 1st steam cycle:
Dec 19, 2014

Learnings

Produced bitumen quality is better than the core analysis:

Less viscous: 40,000 cP vs 20,000 cP

Lighter: 10.9 API vs 10.2 API

Post circulation production results were better than expected

Summary of Reservoir Properties

Depth	450 m
Thickness	10-12 m
Average Porosity	~33%
Average Gas Saturation	~10%
Average Water Saturation	~30%
Average Bitumen Saturation	~60%

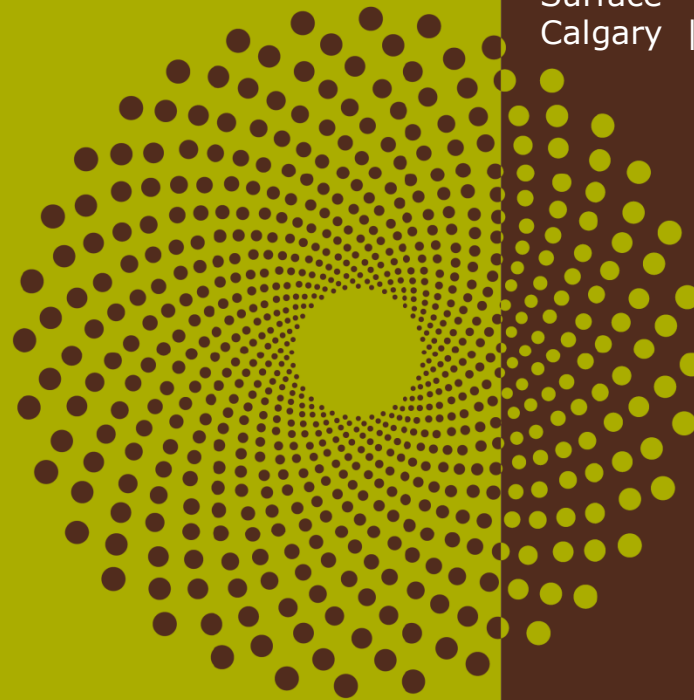
Future Plans

- Currently evaluating Osprey learnings to guide future plans
- No finalized plans at this time

Thank you

Cenovus Foster Creek in-situ oil sands scheme (8623) update for 2014

Surface
Calgary | June 24, 2015



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Advisory

This presentation contains information in compliance with:

AER Directive 054 - Performance Presentations, Auditing, and Surveillance of In Situ Oil Sands Schemes

Section 3.1.2 Surface Operations, Compliance, and Issues Not Related to Resource Evaluation and Recovery

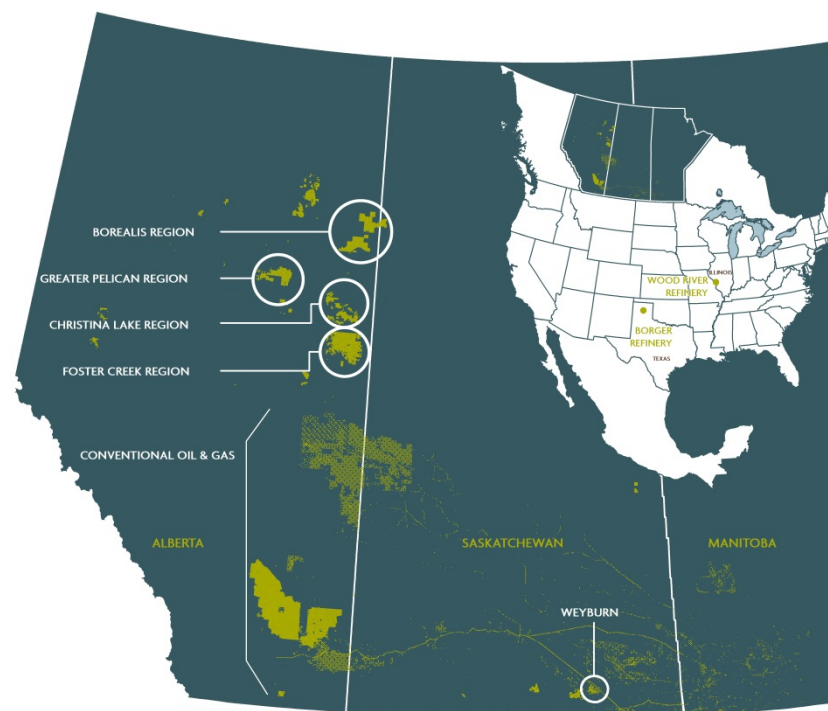
This document contains forward-looking information prepared and submitted pursuant to Alberta regulatory requirements and is not intended to be relied upon for the purpose of making investment decisions, including without limitation, to purchase, hold or sell any securities of Cenovus Energy Inc. The resources estimates contained herein are not reported in accordance with National Instrument 51-101 and are provided solely for the purpose of complying with Alberta regulatory requirements.

Additional information regarding Cenovus Energy Inc. is available at cenovus.com.

Strong integrated portfolio

TSX, NYSE | CVE

Enterprise value	C\$25 billion
Shares outstanding	829 MM
2015F production	
Oil & NGLs	204 Mbbls/d
Natural gas	438 MMcf/d
2014 proved & probable reserves	3.9 BBOE
Bitumen	
Economic contingent resources*	9.3 Bbbls
Discovered bitumen initially in place*	93 Bbbls
Lease rights**	1.5 MM net acres
P&NG rights	5.6 MM net acres
Refining capacity	230 Mbbls/d net



Values are approximate. Forecast production based on midpoints of January 28, 2015 guidance. Cenovus land at December 31, 2014. *See advisory. **Includes an additional 0.5 million net acres of exclusive lease rights to lease on our behalf and our assignee's behalf.

Current project status

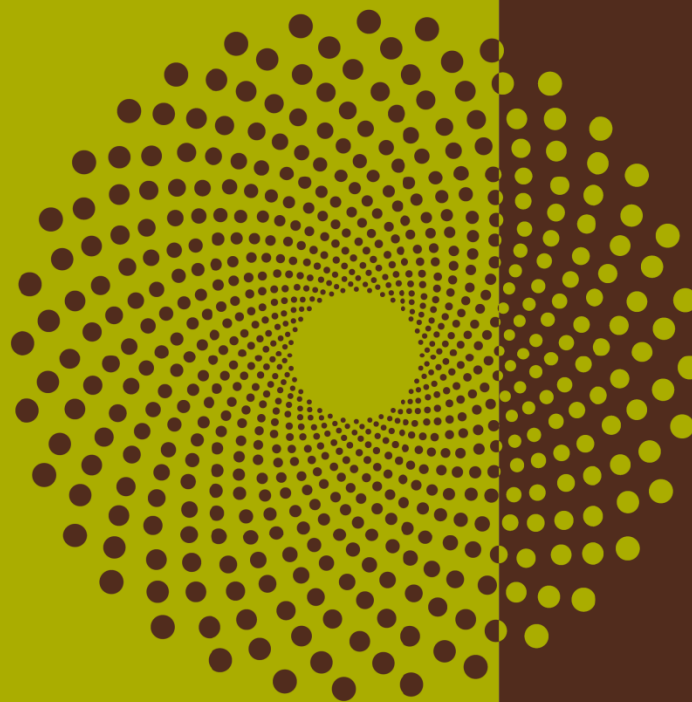


Aerial shot of Foster Creek facility, and steam and emulsion lines

- Phase A - 20k bbls/d on October 2001 (3,180 m³/d)
- 80 MW Cogen on Q1 2003
- Phase B - 30k bbls/d (4,770 m³/d)
- Phase C - 60k bbls/d complete 2006 (9,534 m³/d)
- Phases D & E - 120k bbls/d complete 2009 (19,078 m³/d)
- Water treating debottleneck and cooling loop complete 2010
- Q1 2014 oil production 109,412 bbls/d (17,395 m³/d)
- Record oil production day 130,580 bbl (20,761 m³)
- Approved for Phases A – H, potential capacity 240k bbls/d (38,271 m³/d)

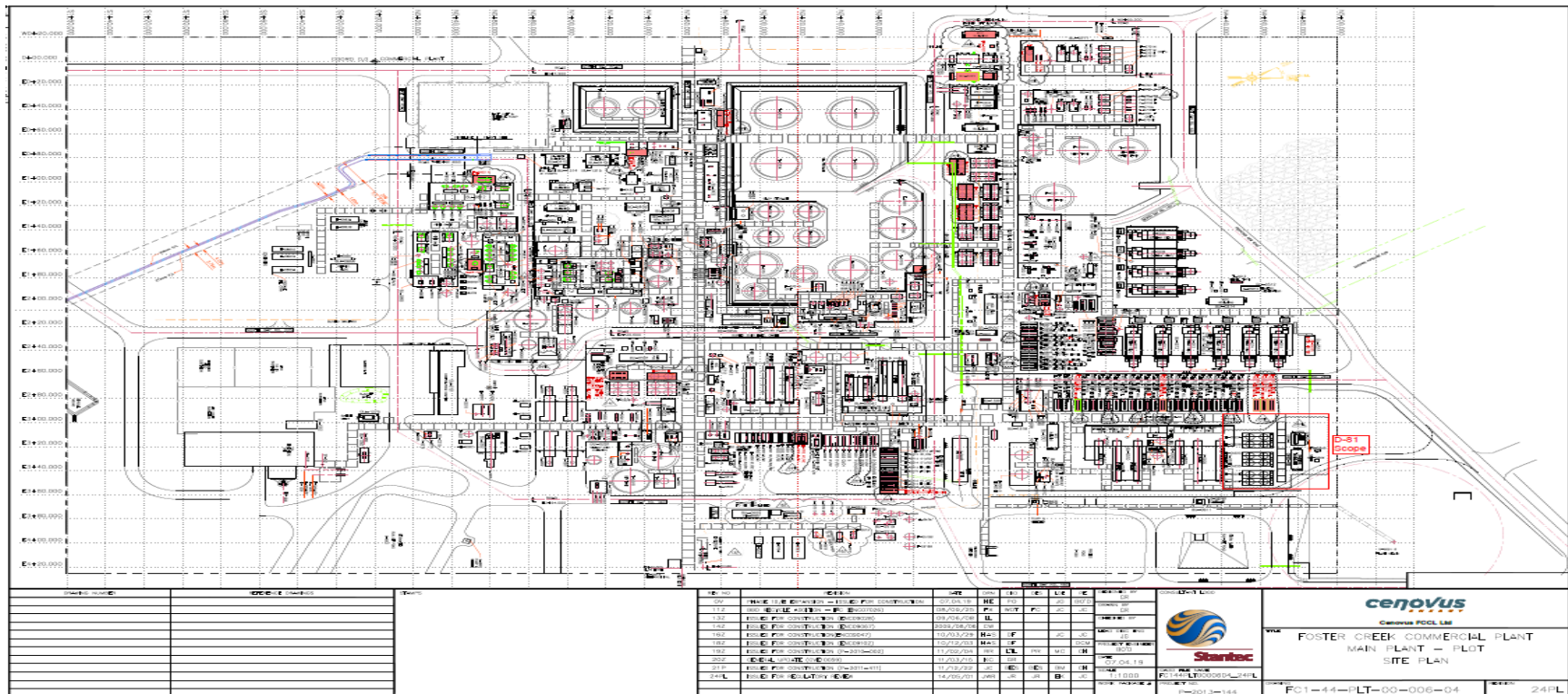
Note that production volumes refer to total cumulative production capacity

Facilities

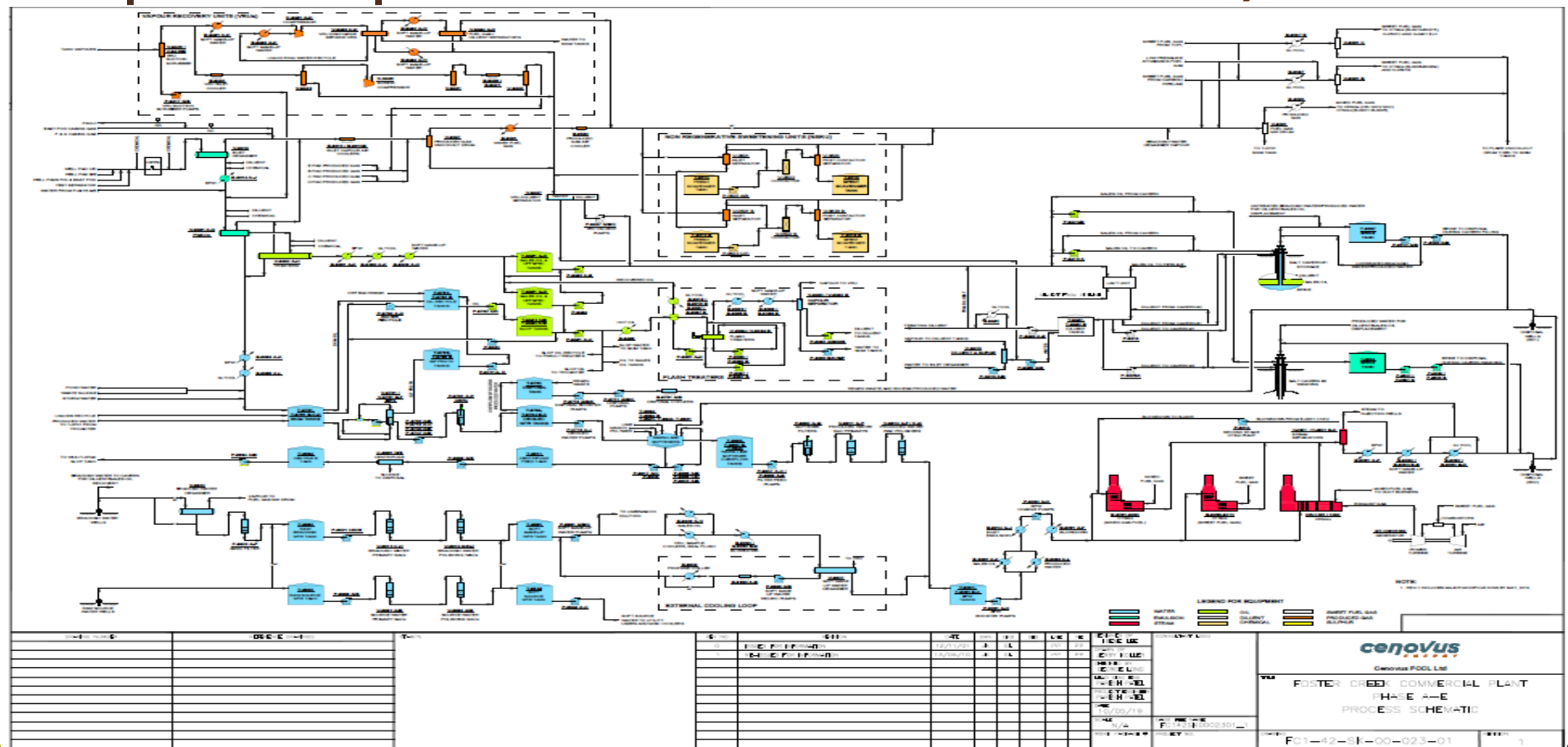


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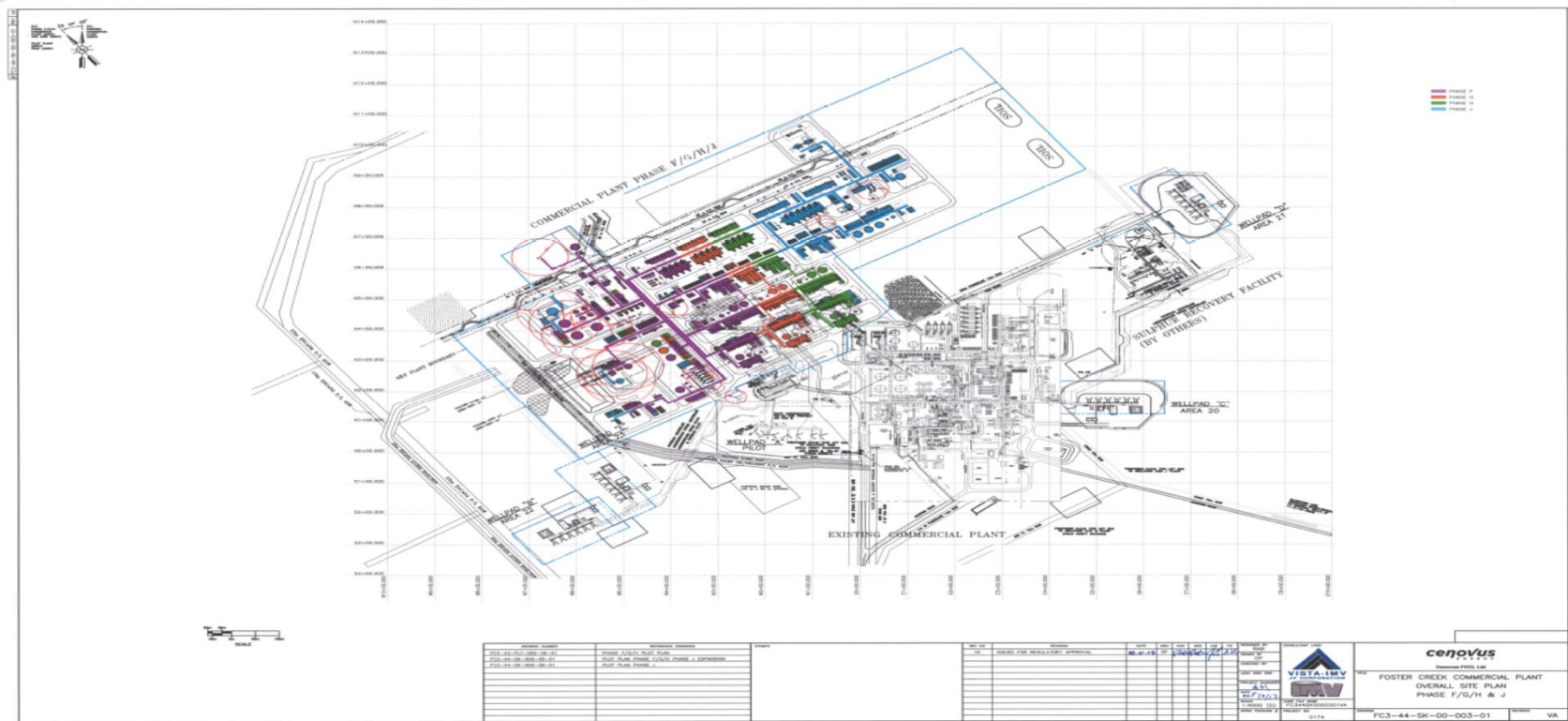
Foster Creek A/E plot plan



Simplified process schematic for A/E



Foster Creek FGH plot plan



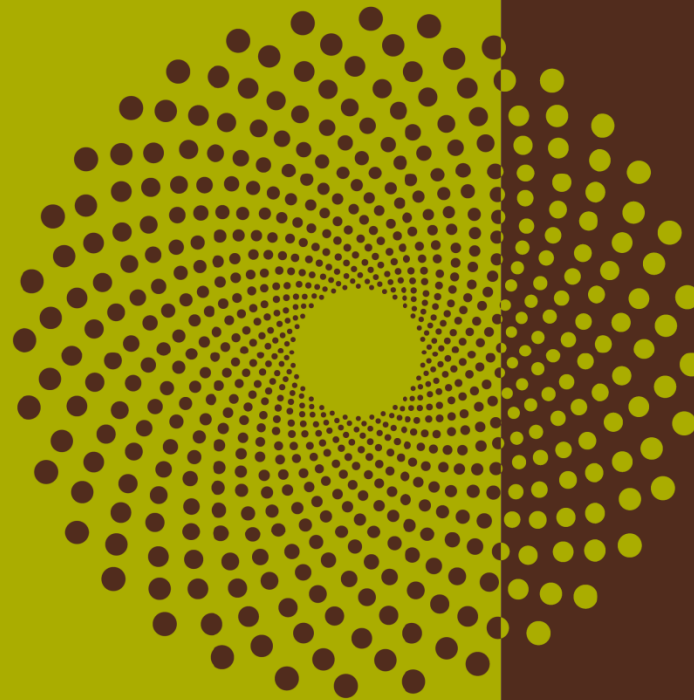
Phases F, G & H

- Engineering & Procurement completed
 - Phase F&G 99%, Phase H 95%
- Construction
 - Phase F 98% complete
 - Area 8 completion May 22/15
 - Insulation & Tracing completion Aug 2015
 - Construction complete Aug 2015
 - Phase G 49% complete
 - Major equipment 100%
 - Field piping @ 49%,
 - Field E&I @0.6%
 - Phase H 16% complete (Construction presently on hold)
 - Piling @100%, cutting and capping @ 87%, concrete @ 61%

Phase F commissioning

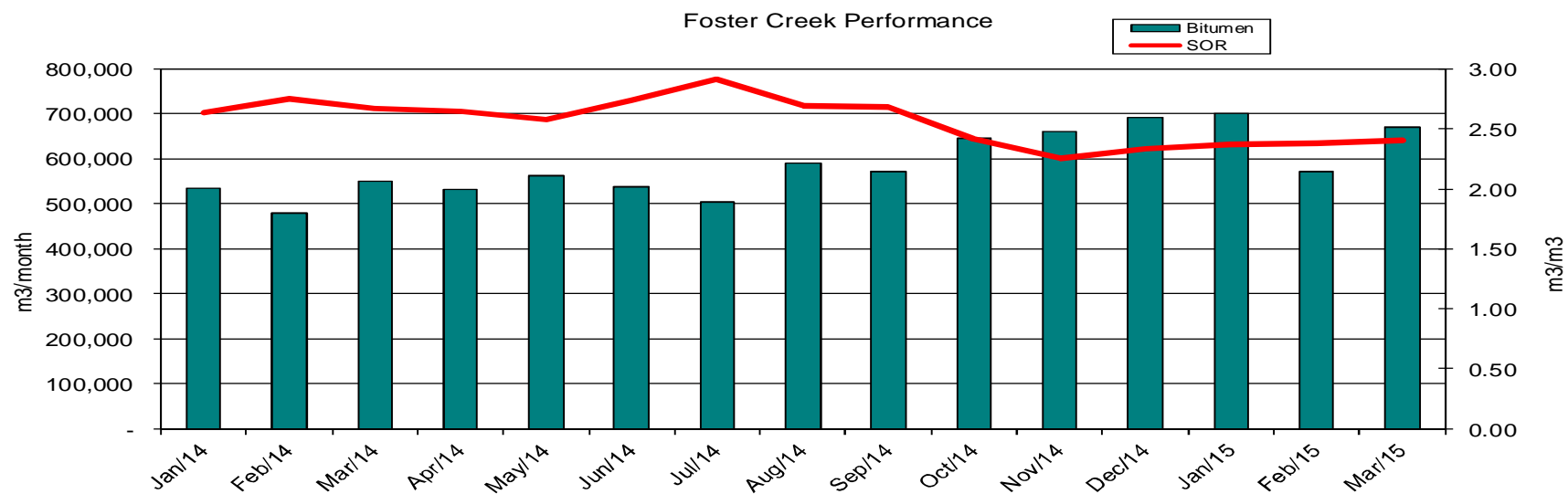
- Complete:
 - Area 02 (Steam generation)
 - Area 03 (Oil treating), with the exception of the Flash Treater
 - Area 04 (Tankage & Vapor Recovery)
 - Area 05 (utilities)
 - Area 07 (De-oiling)
- Remaining:
 - Area 08 (Water Treatment) – WLS, LSF's, ion exchange, and auxiliaries
 - Area 03 - Flash Treater Package

Facility performance

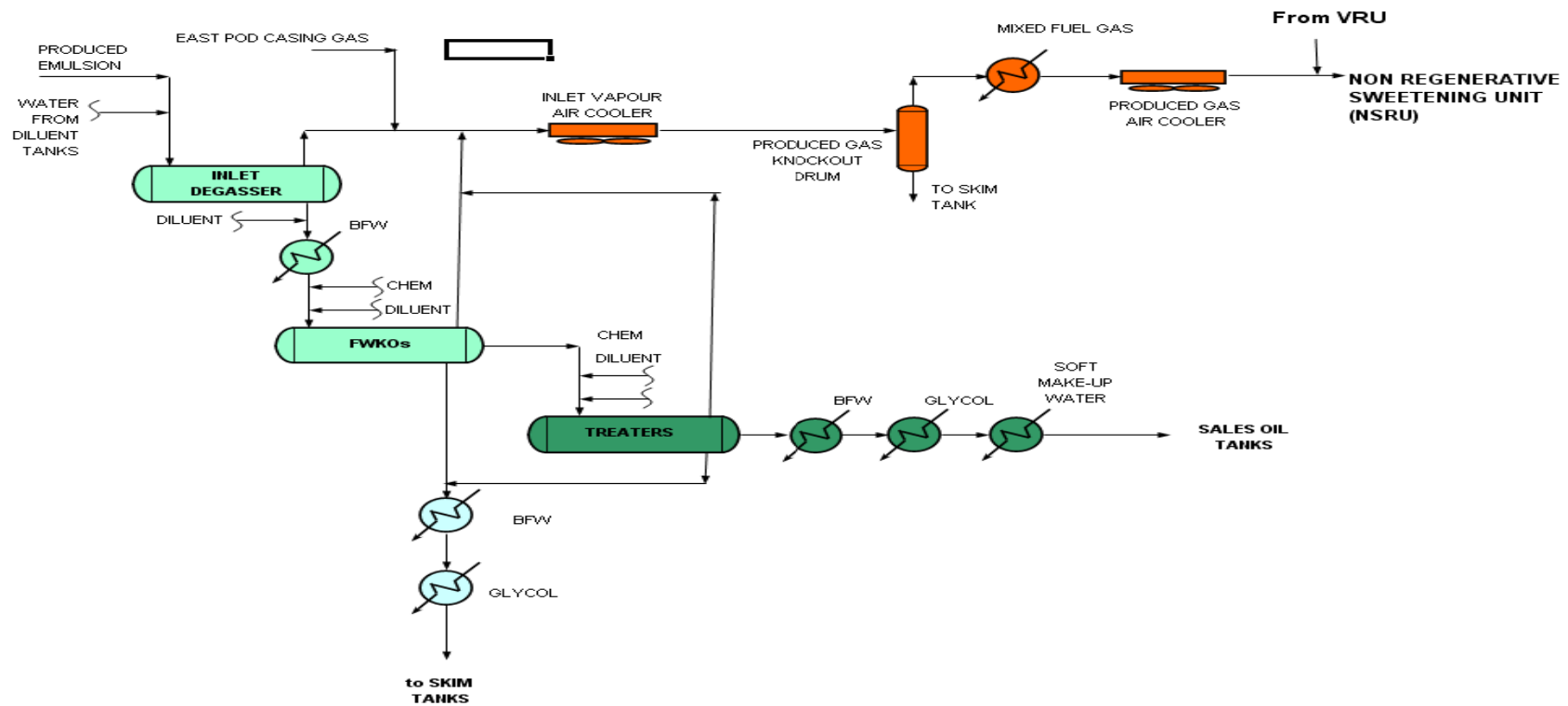


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Plant performance



Emulsion treatment



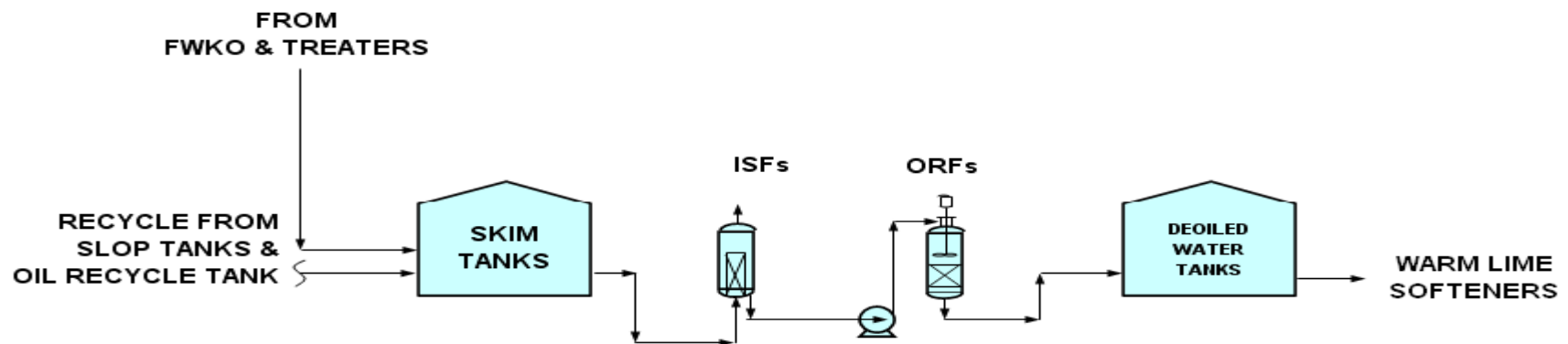
Area 03: Emulsion treatment

- Two inlet degassers (A/E & FGH)
- Five process trains (A/F), one FWKO + two Treaters per train
- Three Sulphur Removal Units (A/E & FGH) for sweetening produced and recovered gas

Area 03: Emulsion treatment

- Very stable operation
- Installing Nuclear Density profilers in the All the Phase-A-E Treaters for better monitoring and controls of the treating vessels.
- Phase-F Treaters to be done in future
- Project in progress to automate the emulsion line gas slug mitigation logic in Phase-A-E and Phase-FGH.

Area 07: Produced water de-oiling



Area 07: Produced water de-oiling

- Five de-oiling trains (A/F)
- First train
 - one skim tank, one ISF and three ORFs
 - ISF capacity (375 m³/hr)
 - Re-configured this train to series operation Skim Tank > Pump > ISF > ORF. Achieved ~500 m³/hr flow when inlet qualities are good
- Second train
 - one skim tank, one smaller ISF and three ORFs
 - ISF capacity is 250 m³/hr. Some flow bypasses ISF.
- Third - fifth trains
 - one skim tank, two ISFs and four ORFs
 - ISF capacity (375 m³/hr per unit)

Area 07: Produced water de-oiling

- Skim tanks
 - Designed for < 4 hours retention time based on nominal capacity
Actual retention time is much lower
 - Improper oil skimming (XV valve & gravity flow out of tank)
 - There is no solid removal mechanism. Only few nozzles around the perimeter of the tank.
 - No Chemical is added to skim tanks
- ISFs
 - Vertical units with about 5-6 minutes of retention time
 - Flocculent injected at inlet
 - Two units are modified with micro-bubbler pumps instead of eductors

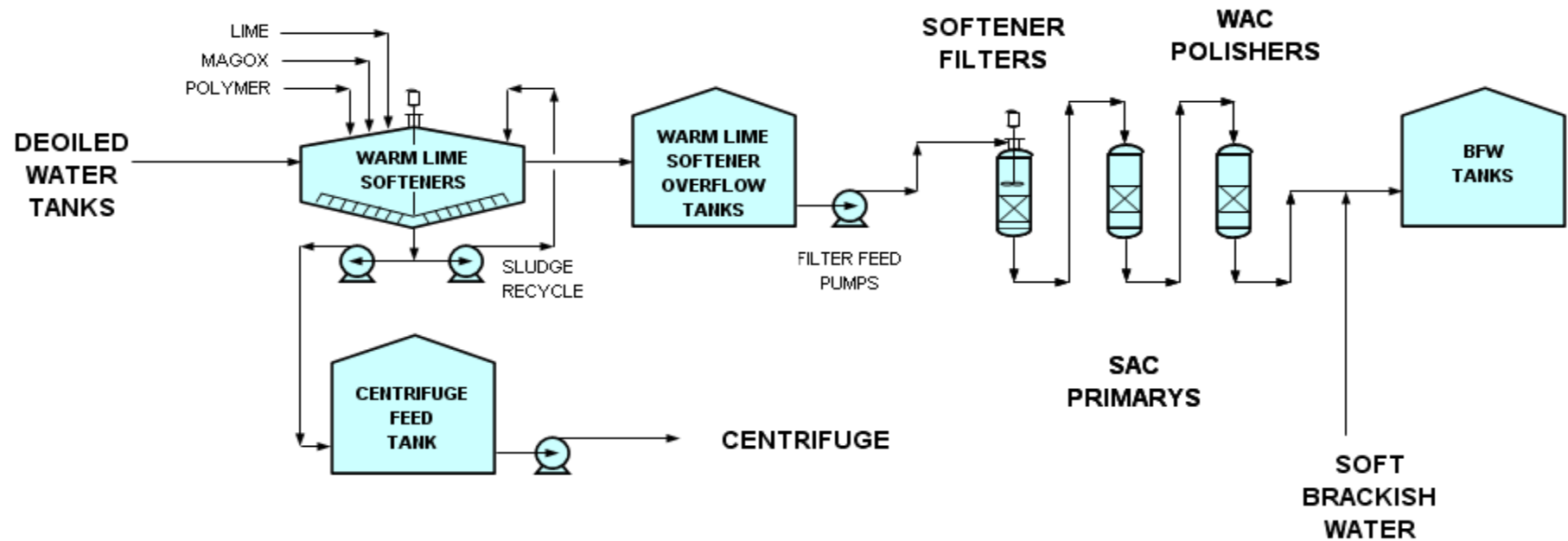
Area 07: Produced water de-oiling

- Oil removal filters (ORF) walnut shell media
- De-oiled produced water oil treatment performance (January 2014 to March 2015)
 - Skim tanks inlet average avg. ~128 ppm
 - ISFs inlet average avg. ~115 ppm
 - ORFs inlet average avg. ~21 ppm
 - ORFs outlet average avg. ~9 ppm

Area 07: Produced water de-oiling

- AE plant capacity increased from 2090 to 2353 m^3/hr by continuous optimization of the system
- Can operate at maximum capacity only when O&G from Area-3 is in normal range $< 200 \text{ ppm}$
- Total De-oiling system capacity = $2353 + 617 = 2970 \text{ m}^3/\text{hr}$

Area 08: Water treatment



Area 08: Produced water treatment

- Two Eimco units tested to 1200 m³/hr
- One Densadeg designed for 500 m³/hr
- Lime softener filters (LSF) – walnut shell media
- SAC followed by WAC ion exchange units
- 2014 Average BFW quality
 - silica <30 ppm
 - TDS <3000 ppm
 - hardness <0.05 ppm
 - iron <0.30 ppm
- Phase F water plant will be commissioned in Q3-2015

Area 08: Brackish water

- Continued brackish water piping replacement with duplex SS
- *Directive 081* project will take over a portion of this piping to convert it to glycol service
- Continue with corrosion monitoring

Directive 081 update

- Project engineering completed; major equipment ordered
- Adding new glycol capacity to remove cooling load off brackish
- Removal of dependency on brackish water for cooling
- Increased produced water treating capacity by adding one LSF and one SAC to maximize produced water use
- AER variance issued (May 2015) for modified Dir 081 limits at FC. The variance expires Dec.31, 2017

Area 2/12: Steam Generation

- Two cogen units (40 MW each)
- Five 180 MM Btu/hr OTSGs
 - Re-rated in 2014 to increase BFW rate from 83.3 to 95 m³/hr
 - Will operate at high BFW rate only during one OTSG outage
- Ten 275 MM Btu/hr OTSGs
 - Continuous Emission Monitoring Systems (CEMS) on B-0206, B-0210 and FC3-B-0201
 - Operated B-0206 & B-0208 at 87% Steam quality (April - Dec 2014)
- Four 250 MM Btu/hr Second Stage OTSGs

Area 02: Second stage OTSG – FC3

- Phase-F 2nd Stage OTSGs (6 pass, 250 MMBTU/H, TIWW)
 - Four OTSGs, FC3-B-0201/02/03/04 were commissioned in May-2014
 - Operated at 70% steam quality
 - BFW+BBD blend to maximize steam production
 - 1.9 million Sm³ BBD used to produce steam (May 2014 to end of March 2015)
- Failures:
 - Tube failures were observed in all four boilers in Q4-2014 or Q1-2015.
 - Failures were found in the economizer shock tube or low fin tubes where heat flux is highest
 - All the failures have been repaired and boilers put back to operation.

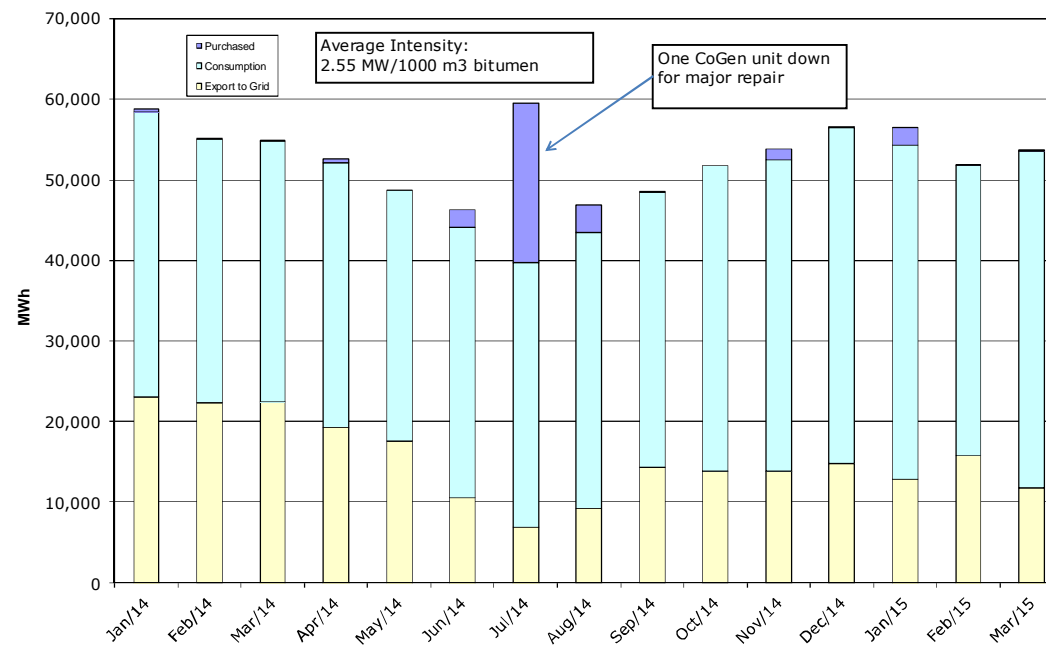
Area 02: Second stage OTSG

- Failure Mechanism:
 - The failures caused by overheating due to internal scale deposition
 - Currently studying the scaling mechanism. Possible contributors
 - Scaling was accelerated due to presence of the corrosion particles in the commissioning water
 - Multiple trips of the BFW pumps during commissioning and start up
 - Mixing of BFW and BBD could lead to precipitation of the solids
 - Too long of operation without cleaning

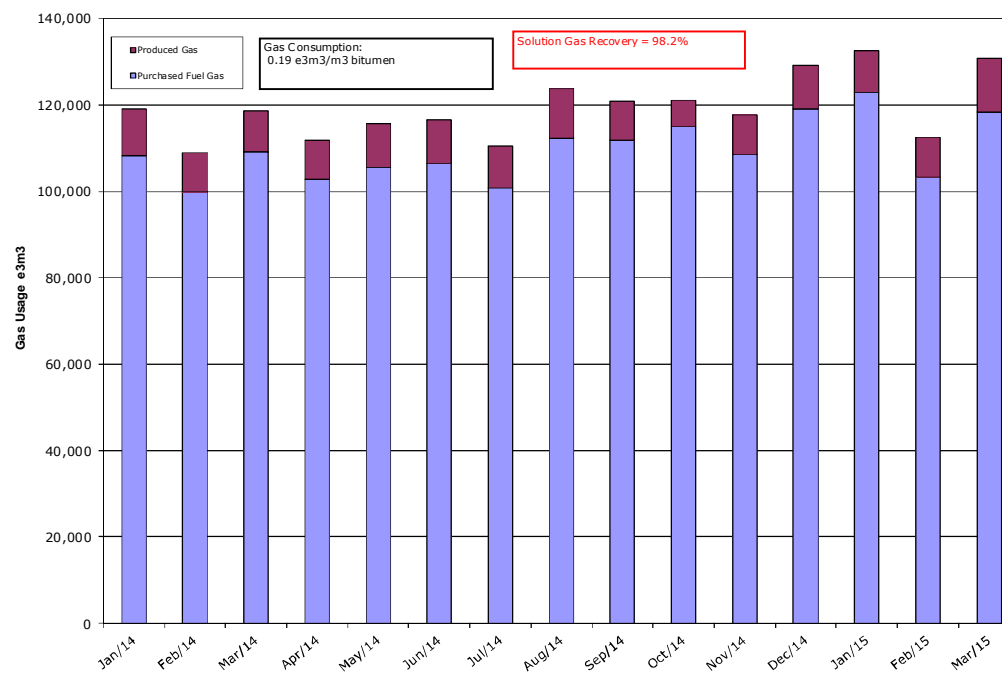
Area 02: Second stage OTSG

- Corrective Actions:
 - Reduced the firing rate to 90%
 - Utilizing BBD water only (No mixing)
 - Pigging frequency was set to three months
 - Reduce boiler trips
- A multi-discipline taskforce was formed to improve
 - Boiler operation reliability
 - Understand the scaling mechanism
 - Review and optimize the boiler chemical program
 - Install additional instrumentation to monitor the dP and tube wall temperature of the economizers
 - OTSGs have been operating with BBD only since early March
 - OTSGs will be pigged after ~ 90 days of operation

Power generation



Gas usage

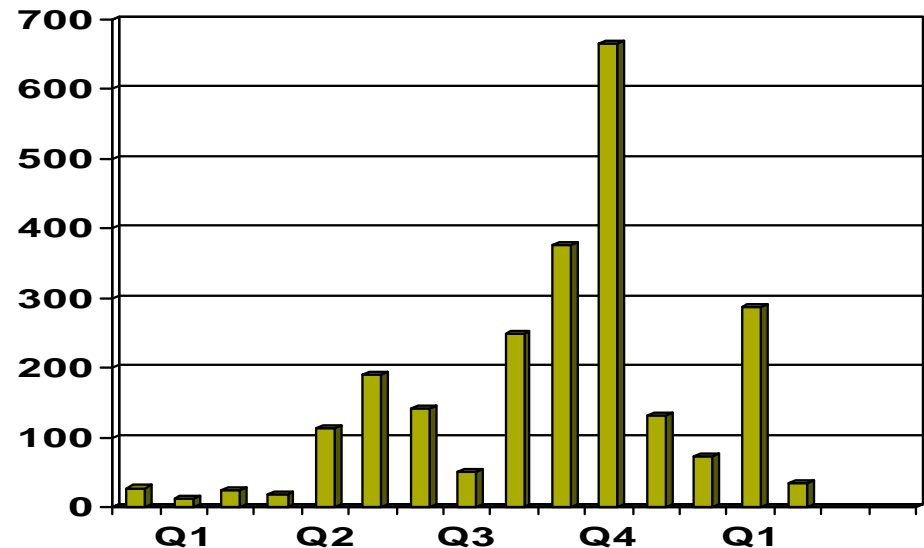


Flared gas volume ($\text{e}^3\text{m}^3/\text{month}$)

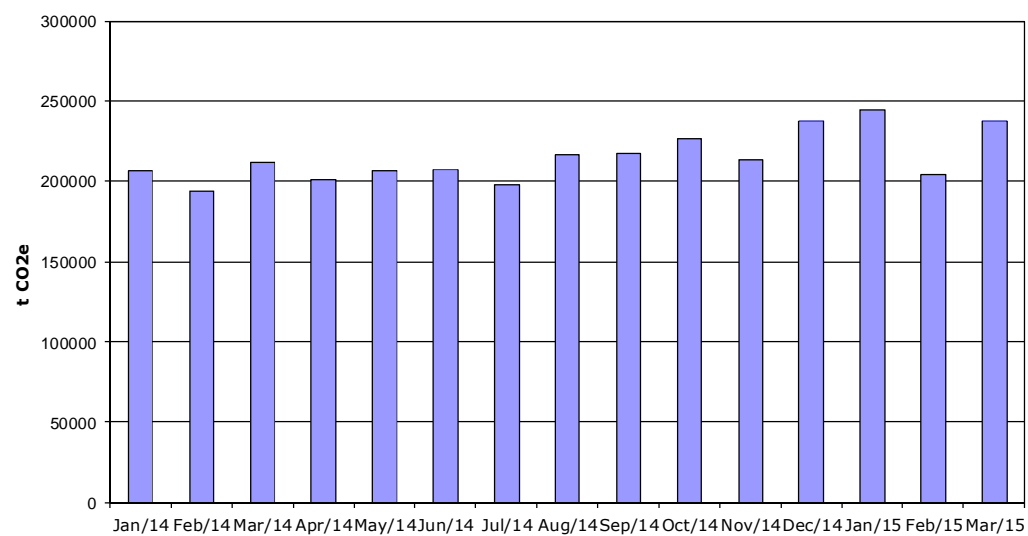
- 2014 total flared gas $2002.9 \text{ e}^3\text{m}^3$, ($2 \text{ e}^3\text{m}^3/\text{d}$), $0.29 \text{ m}^3/\text{m}^3$ oil, compared to $716.1 \text{ e}^3\text{m}^3$ in 2013

- 2014 Q3-Q4 high flaring due to various activities and issues related to new Phase-F start up

- Phase-F NRSU outage
- Phase-F PG cooler leakage
- Phase-F Boiler trips
- Pad-C shutdown outage



Greenhouse gas emissions



Emissions

- 2014 GHG emissions including CoGen 2.537 MM tonnes CO₂e (2.193 MM tonnes in 2013)
 - total annual emissions (tonnes CO₂e) less Deemed GHG Emissions from Electricity Generation 2.287 MM tonnes or reported emissions intensity 0.3330 tonnes CO₂e/m³ bitumen
- Fugitive emissions 197.1 tonnes (291.7 t in 2013)
 - fugitive emissions include unintentional equipment leaks such as loose flanges, PSVs not sealing properly, equipment wear, etc. Does not include equipment vents that are intentionally designed to vent.
 - using Target Emissions Services to monitor FEMs with LDAR camera to detect leaks which are then repaired

Area 04: Vapor Recovery Unit (VRU)

- One screw compressor + eight liquid ring compressors
- Construction in progress for
 - Addition of a new screw compressor K-0422
 - VRU header twinning to resolve hydraulics limitations
 - Expected to be commissioned in Q2/Q3-2015

Area 04: Slop handling

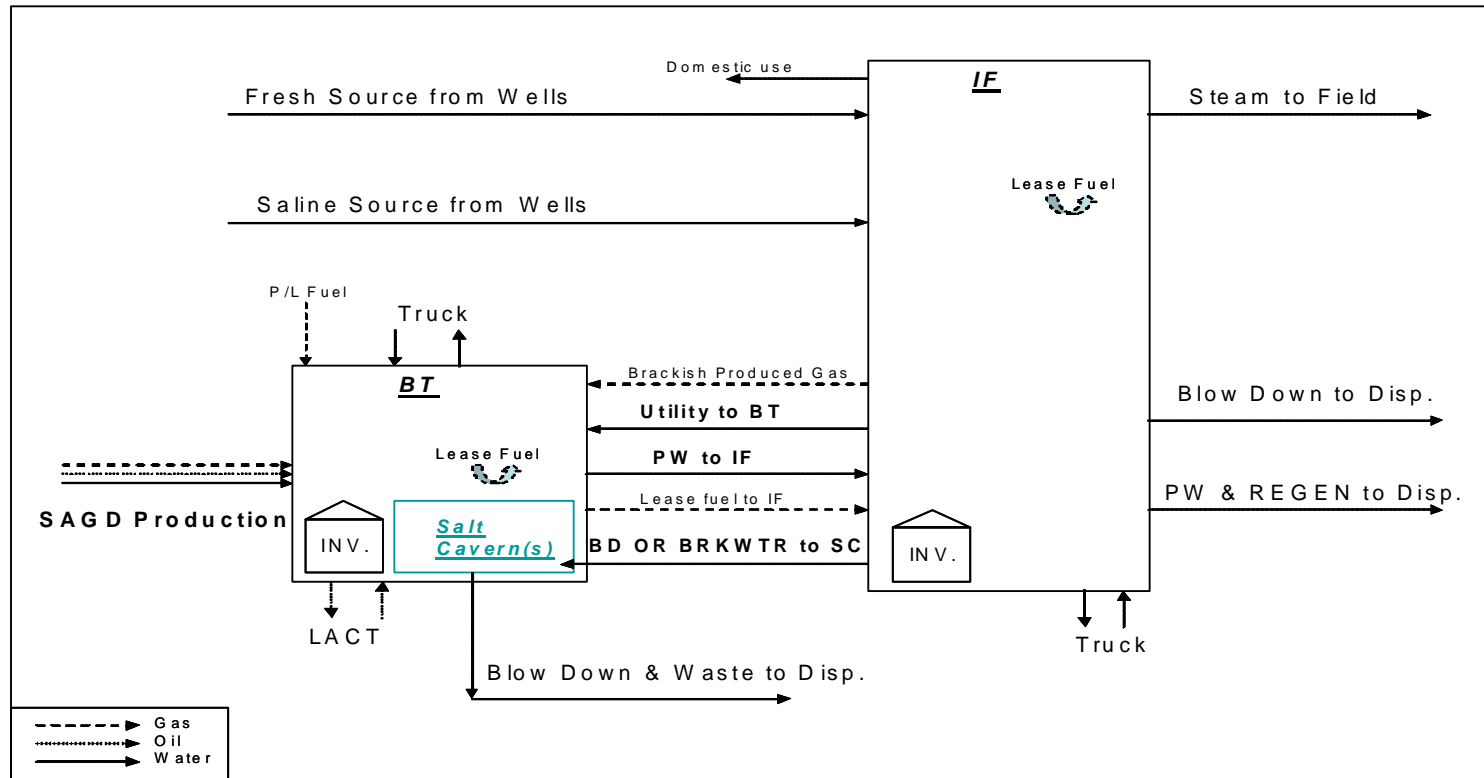
- Eight slop tanks each about 870 m³
- Tricanter to treat slop fluid and reduce waste
 - Processing 200 to 350 m³/d of slop fluid
 - Water and oil on spec and returned to facility
 - Investigating what other fluids could be treated with this system
- AE plant Flash Treater not being used
- Phase-F one Flash Treater to be commissioned

Measurement and reporting



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Simplified MARP schematic



MARP approvals

- FGH MARP was approved in April 2011
- A-H update submitted March 2015
- Salt caverns are separated from the rest of the plant for production reporting

Methods for estimating injection and production volumes

- Production well metering/estimates:
- Wellhead meters are quadrant edge orifice plate meters for the first 34 pads, manual BS&W samples
- W08 first new well pad with test separator design, all new pads will incorporate test separators
- W08 uses Phase Dynamics for water cut, still working with vendor to calibrate (using manual BS&W samples in the interim)
- Other initiatives
 - Two MPFMs being piloted in the east (AGARs not very consistently reliable)
 - Plan to test NMR (nuclear magnetic resonance) technology for BS&W and a new proportional sampler (bench test)
 - AGAR MPFM installed on W06 pad well pairs WP7 and WP8 which may come on this fall

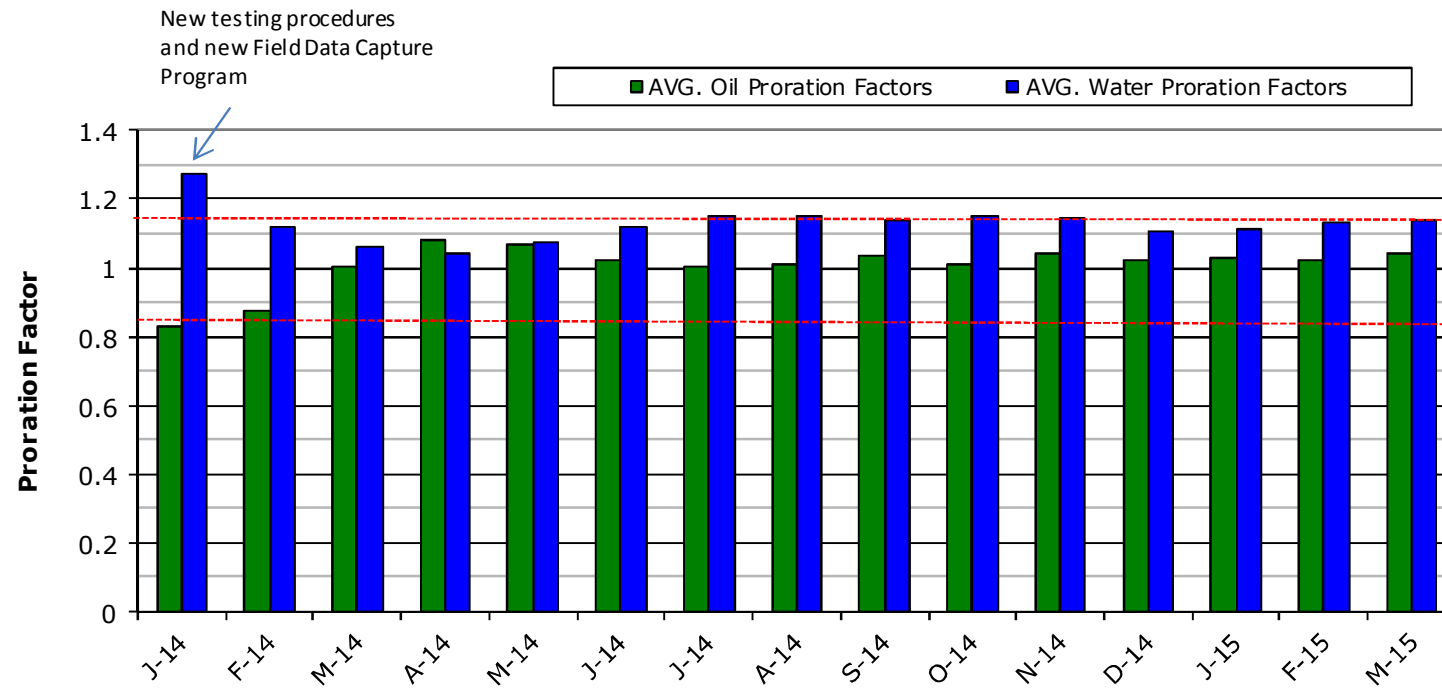
Methods for estimating injection and production volumes

- Production is prorated to plant volumes:
 - Oil: sales – diluent +/- inventories + blending shrinkage
 - Water: water entering battery and transferred to the IF (sum of the ORFS +/- inventories + transfers)
- Steam injection meters:
 - Injection well head meters are nozzle-style and V-cone
 - Steam is measured at each injector
 - Steam leaving the plant is calculated using the sum of the boiler feedwater meters minus the blowdown water meters. The plant steam is then prorated to each well.

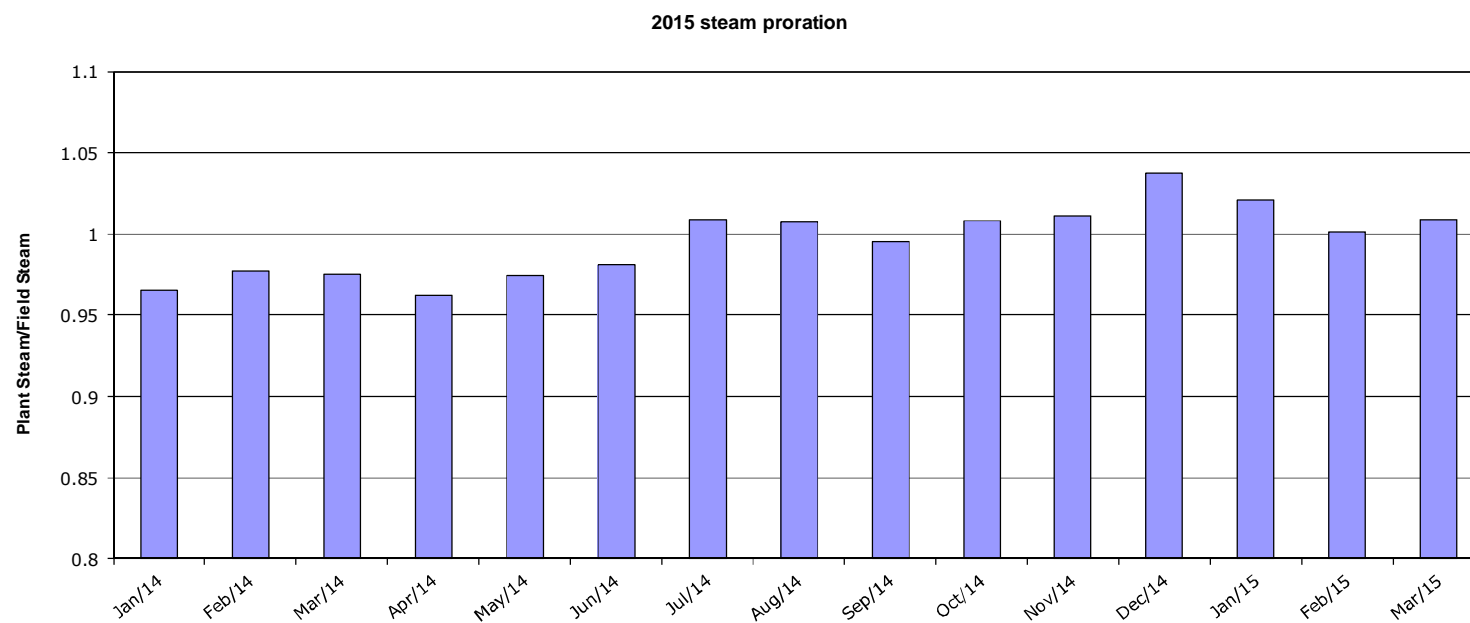
Proration factors

- Oil and water estimates are obtained from the wellhead meters and manual samples
- Oil and water production is calculated from meters at the plant
- Proration factors are found by dividing the actual production by the estimated
- Gas allocated to each well is determined by GOR for the battery

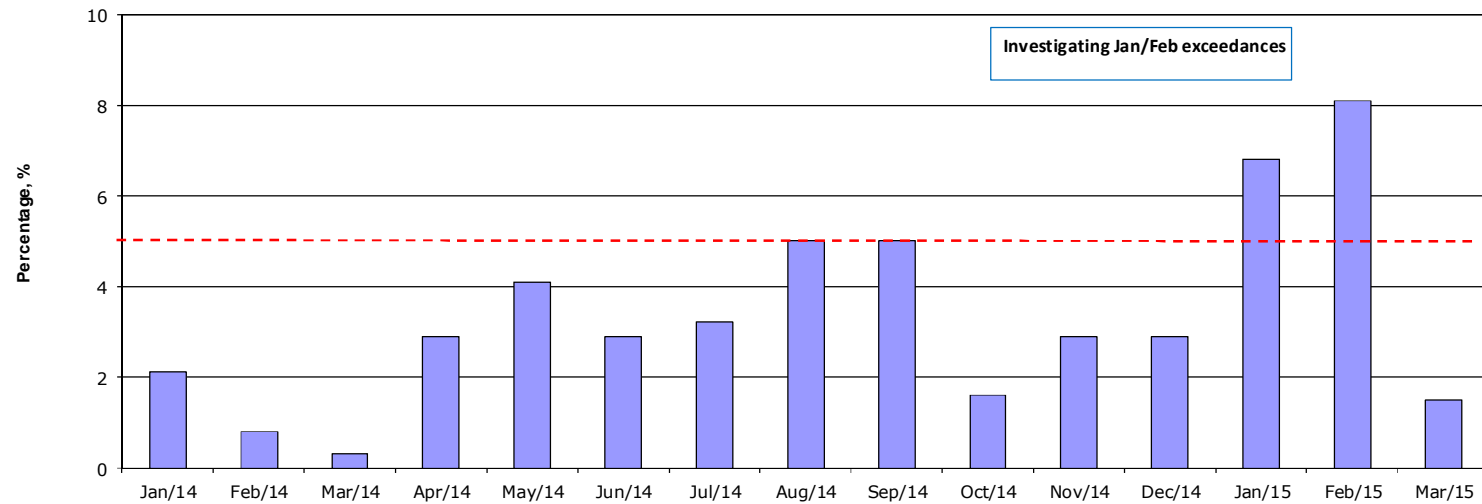
Oil and water proration factors



Steam proration factors



Injection facility water imbalance



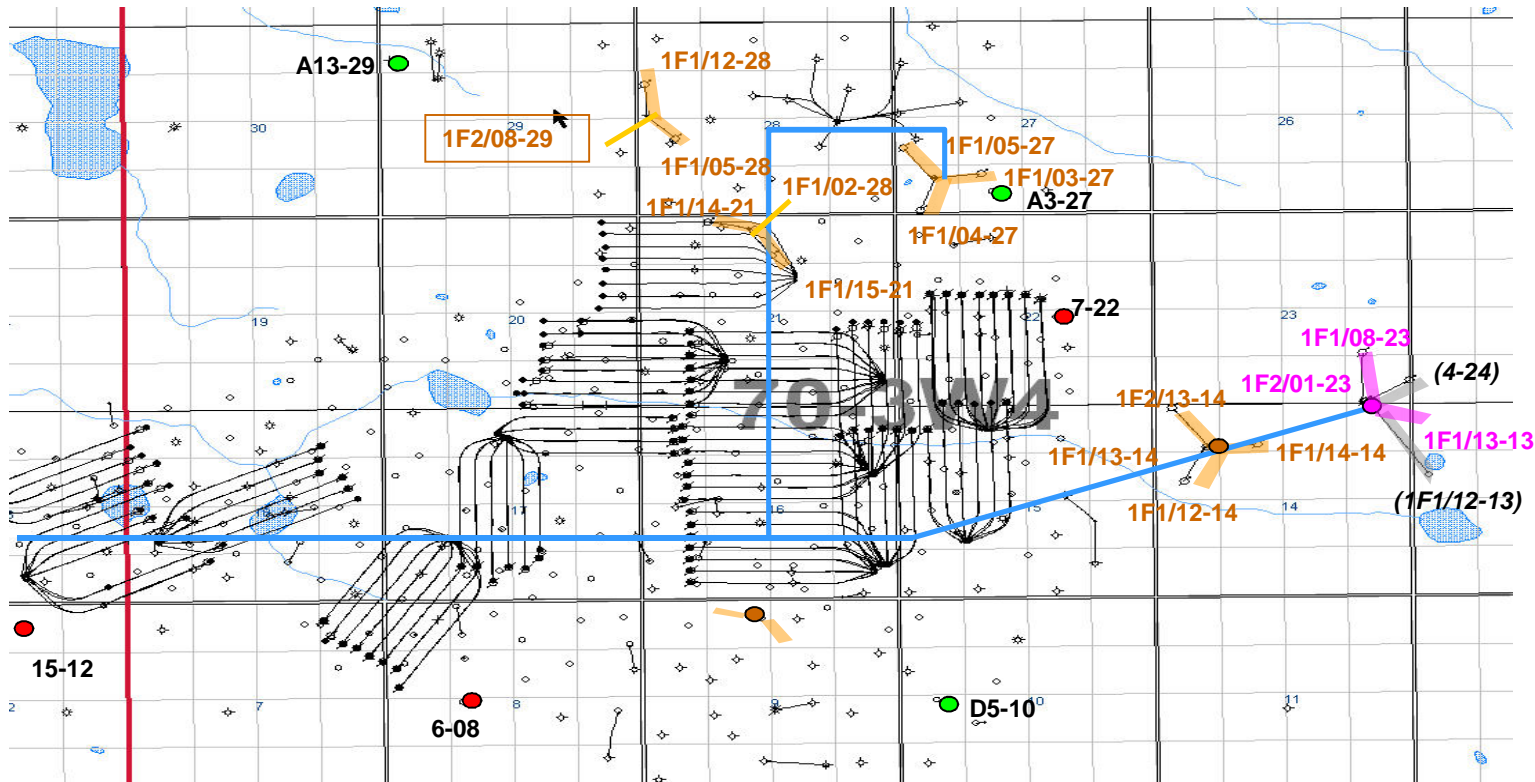
Optimization of test durations

- Wellhead flow meters are used to measure the flow rate of existing wells at Foster Creek
- This variance from standard testing duration was granted by exemption letter because the wells all have individual flow meters so flow is continuously measured
- Quadrant edge orifice meters have been proven to compare well to coriolis meters
- New test separators have coriolis meters and watercut analyzer on liquid leg (first units are Phase Dynamics – currently working with vendor on calibrations)

Description of water production, injection and uses



Current brackish source network



Legend

- Drilled Deviated Water Source Well
- Drilled Vertical Water Source Well
- Grand Rapids Source Well
- McMurray Source Well
- Grand Rapids Piezometer
- McMurray Piezometer

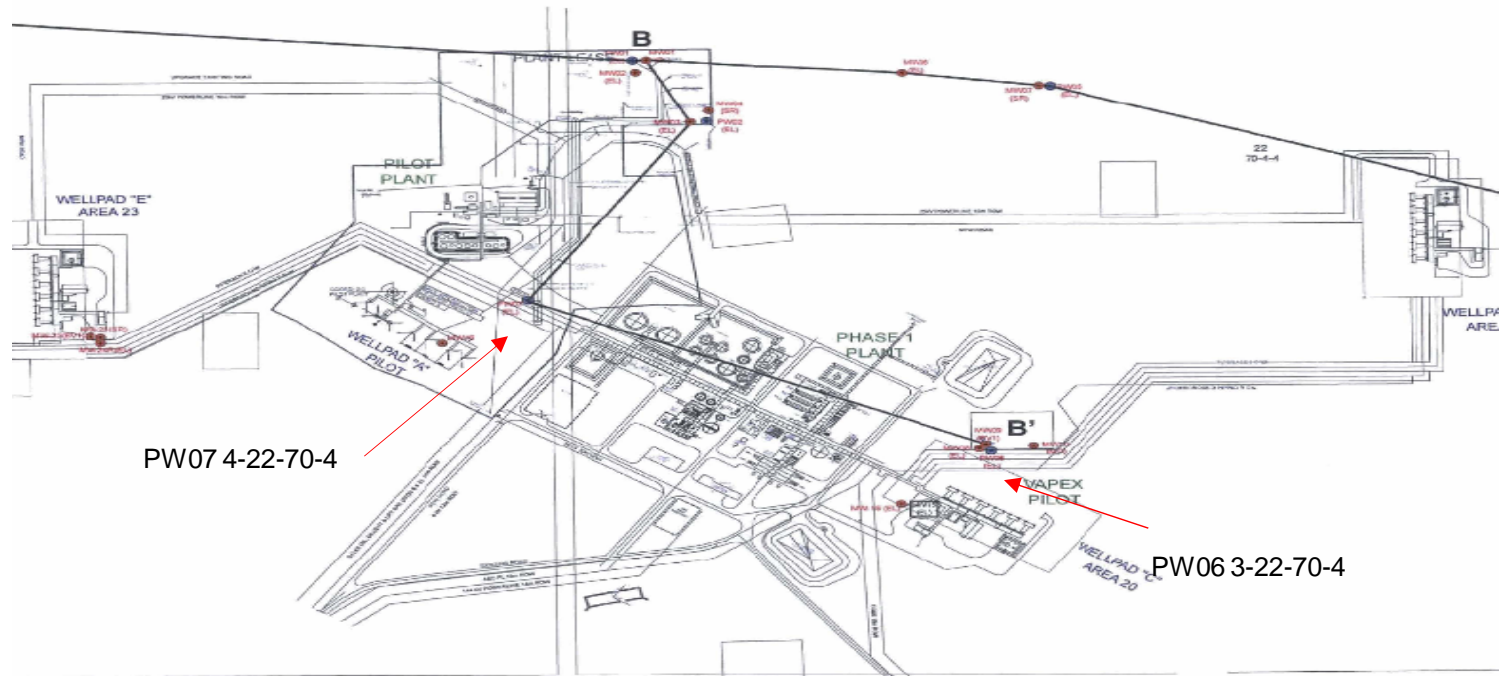
LGR Wells:

1F2/08-29-070-03W4
 1F2/12-28-070-03W4
 1F1/02-28-070-03W4
 1F1/05-28-070-03W4
 1F1/05-27-070-03W4
 1F1/04-27-070-03W4
 1F2/03-27-070-03W4
 1F1/15-21-070-03W4
 1F1/14-21-070-03W4
 1F1/14-14-070-03W4
 1F1/13-14-070-03W4
 1F2/13-14-070-03W4
 1F1/12-14-070-03W4
 1F1/15-09-070-03W4
 1F1/14-09-070-03W4

McM Wells:

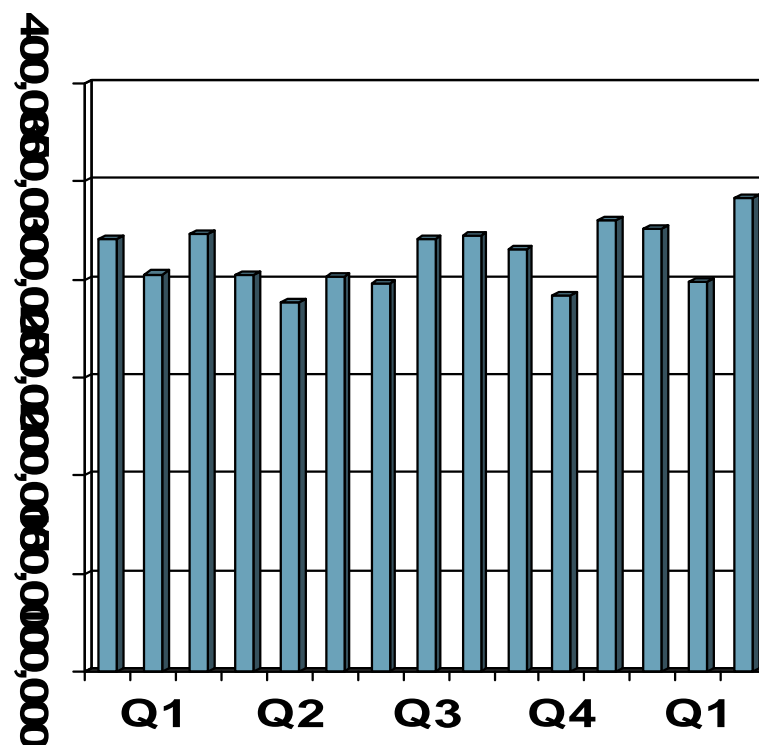
1F1/08-23-070-03W4
 1F2/01-23-070-03W4
 1F1/13-13-070-03W4

Fresh source wells



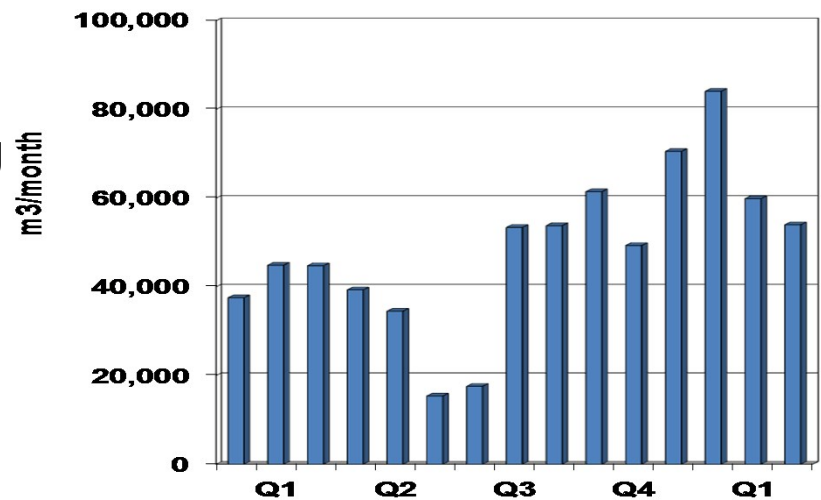
2014 monthly saline water use (m³)

- Saline water use during 2014 was 3,716,543.8 m³ (0.54 m³/m³ oil)
- Saline water use during Q1 2015 was 966,085.2 m³ (0.50 m³/m³ oil)
- 2014 Saline Source/Use:
- 75% Grand Rapids (SAGD)
- 25% McMurray (SAGD)
- Saline water used for cooling and makeup

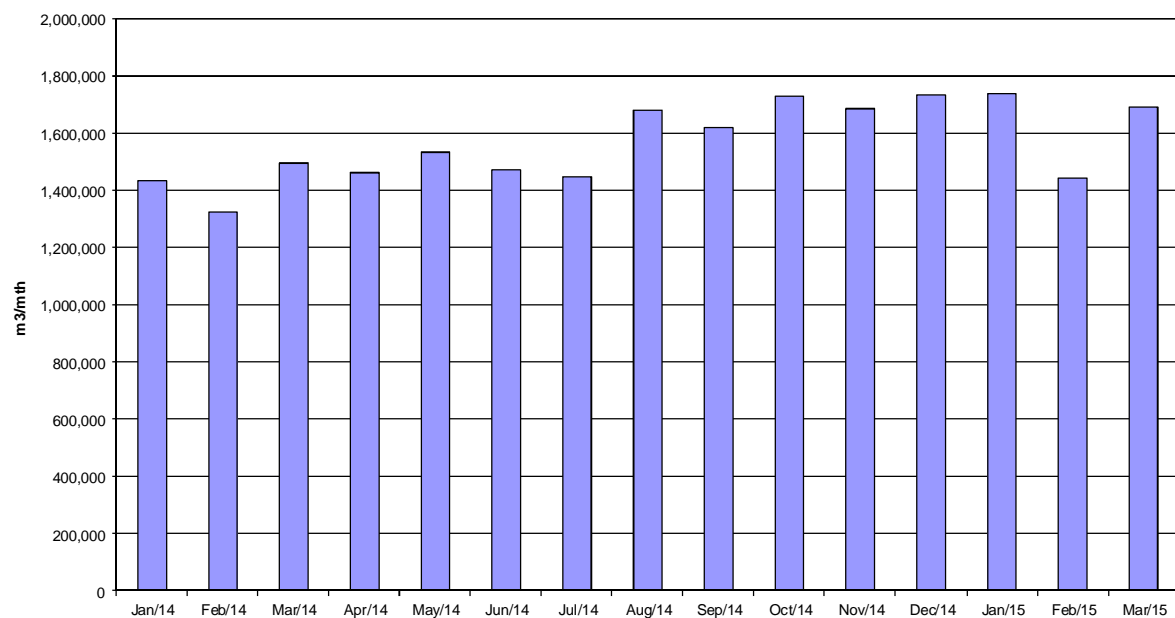


2014 monthly fresh water use (m³)

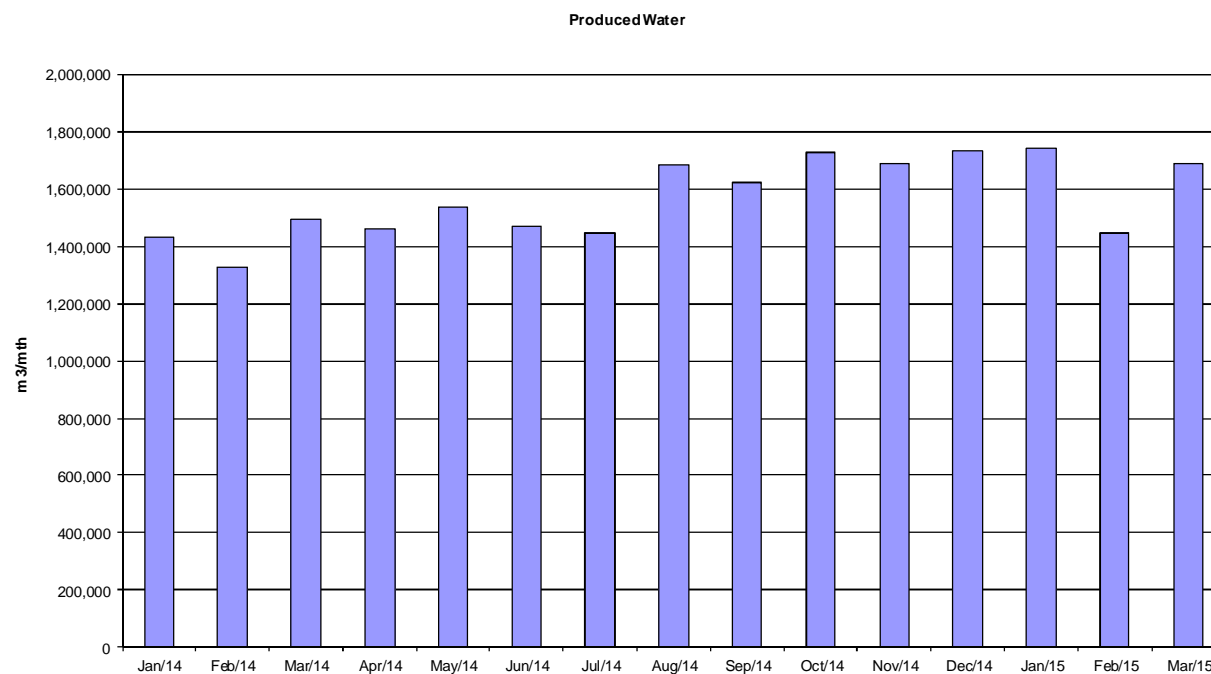
- Fresh water used during 2014 was 522,391.9 m³ (.076 m³/m³ bitumen)
- Fresh water used during Q1 2015 was 197,949.1 m³ (0.102 m³/m³ oil)
- Phase F start up increased fresh water use for BFW make up purposes.
- Fresh Water use is expected to drop significantly after the commissioning Phase F water treatment plant, currently scheduled for July 2015.



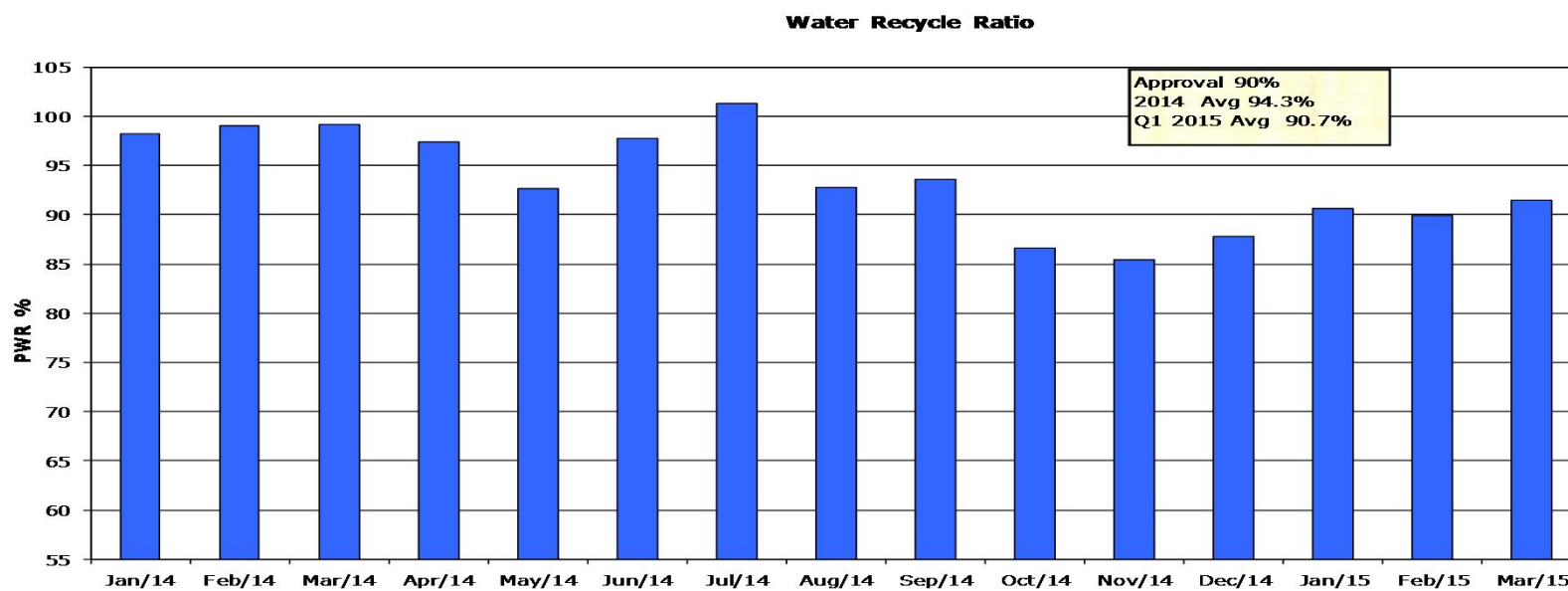
Produced water



Steam generation



Water recycle



Water quality parameters

Mg/L	McMurray	Grand Rapids	Produced	Boiler feed water	Boiler blowdown
TDS	9400	5800	2000	3200	19000
SiO ₂	8.6	8.5	124	15.4	70
Cl	5200	3600	861	1330	4500
Na	3500	2100	700	1010	4800
K	12	7.6	21	18	365
Ca	35	20	13	<1	1
Alkalinity (as CaCO ₃)	1200	300	355	350	1800
pH	8.15	8.25	7.58	9.43	11.95
Fe	2.6	0.6	0.5	<0.02	3

Foster Creek McMurray water disposal

- Class 1B (28 wells) approval 11351F, Class II (1 well) Approval 11059C
- Ten new wells on ED3 pad started disposal operations in July 2014
- Water disposal includes water from operations (produced, regens, blowdown) and brines from cavern washing and displacements
- Regens are performed using softened water (brackish + produced, no fresh water) and combined with produced water for disposal
- Well workovers include coil cleanouts and acid stimulations
- Volumes are measured on each individual well by turbine or magnetic meters and pressure is measured at common headers located at the disposal pads

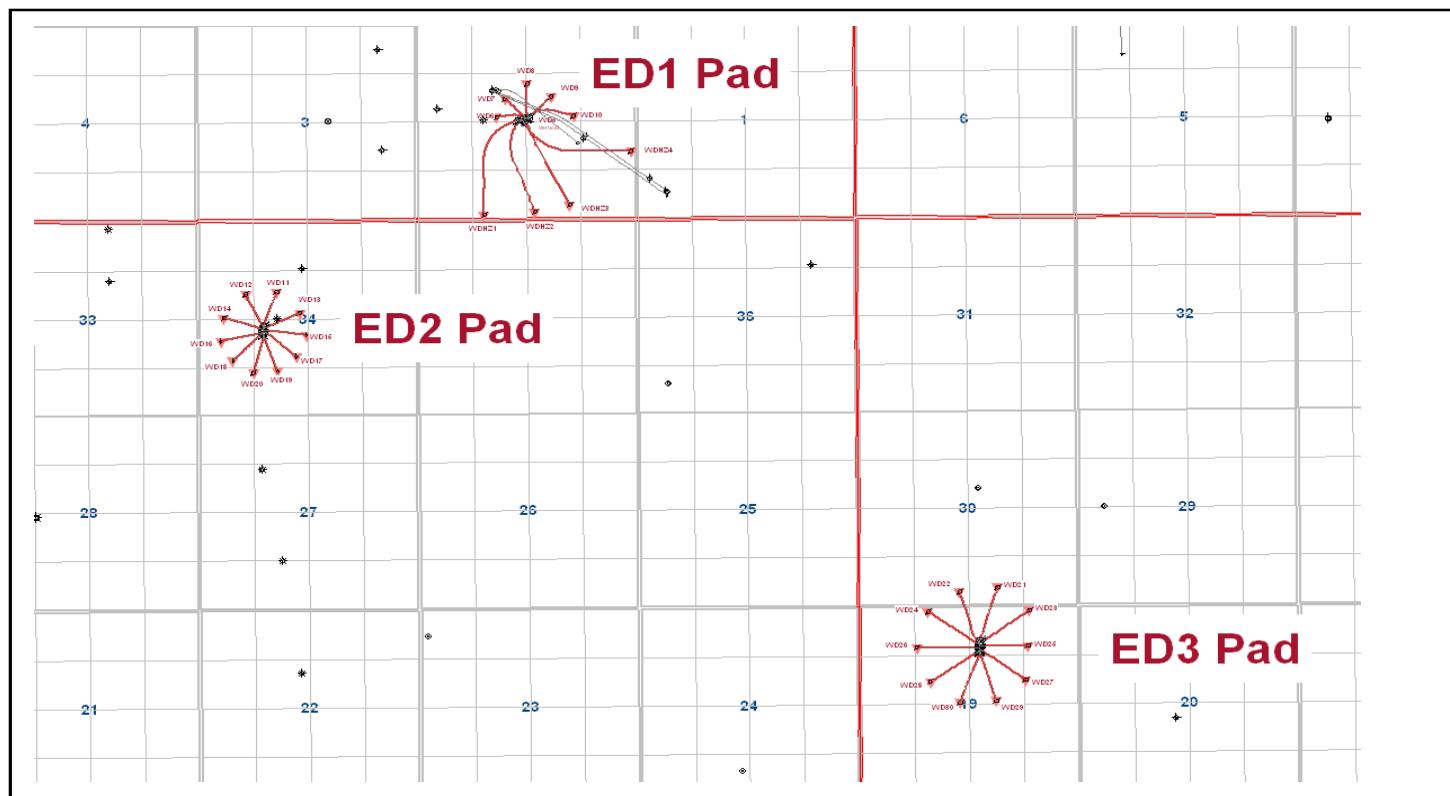
Foster Creek McMurray water disposal wells

UWI	Approval No.	Classification
102/02-02-070-04W4	11351F	Class IB
100/03-02-070-04W4	11351F	Class IB
100/08-02-070-04W4	11351F	Class IB
103/10-02-070-04W4	11351F	Class IB
104/11-02-070-04W4	11351F	Class IB
105/11-02-070-04W4	11351F	Class IB
104/10-02-070-04W4	11351F	Class IB
100/02-02-070-04W4 (LGR)	11351F	Class IB
102/10-02-070-04W4	11059C	Class II
102/11-34-069-04W4	11351F	Class IB
100/12-34-069-04W4	11351F	Class IB
102/12-34-069-04W4	11351F	Class1B
103/11-34-069-04W4	11351F	Class IB
100/06-34-069-04W4	11315F	Class 1B

Foster Creek McMurray water disposal wells

UWI	Approval No.	Classification
100/05-34-069-04W4	11351F	Class IB
102/06-34-069-04W4	11351F	Class IB
102/05-34-069-04W4	11351F	Class IB
100/03-34-069-04W4	11351F	Class IB
100/04-34-069-04W4	11351F	Class IB
100/02-30-069-03W4	11351F	Class IB
100/03-30-069-03W4	11351F	Class IB
102/16-19-069-03W4	11351F	Class IB
100/14-19-069-03W4	11351F	Class IB
100/16-19-069-03W4	11351F	Class IB
102/14-19-069-03W4	11351F	Class IB
100/09-19-069-03W4	11351F	Class1B
100/11-19-069-03W4	11351F	Class IB
100/10-19-069-03W4	11315F	Class 1B
102/11-19-069-03W4	11315F	Class 1B

Current disposal well locations



Legend

Disposal Wells:

ED1 Pad:

WDHZ 1 – 100/03-02-070-04W4
WDHZ 2 – 100/02-02-070-04W4
WDHZ 3 – 102/02-02-070-04W4
WDHZ 4 – 100/08-02-070-04W4
WD6 – 104/11-02-070-03W4
WD7 – 105/11-02-070-03W4
WD8 – 104/10-02-070-03W4
WD9 – 102/10-02-070-03W4
WD10 – 103/10-02-070-03W4

ED2 Pad:

WD11 – 102/11-34-069-04W4
WD12 – 100/12-34-069-04W4
WD13 – 103/11-34-069-04W4
WD14 – 102/12-34-069-04W4
WD15 – 100/06-34-069-04W4
WD16 – 100/05-34-069-04W4
WD17 – 102/06-34-069-04W4
WD18 – 102/05-34-069-04W4
WD19 – 100/03-34-069-04W4
WD20 – 100/04-34-069-04W4

ED3 Pad:

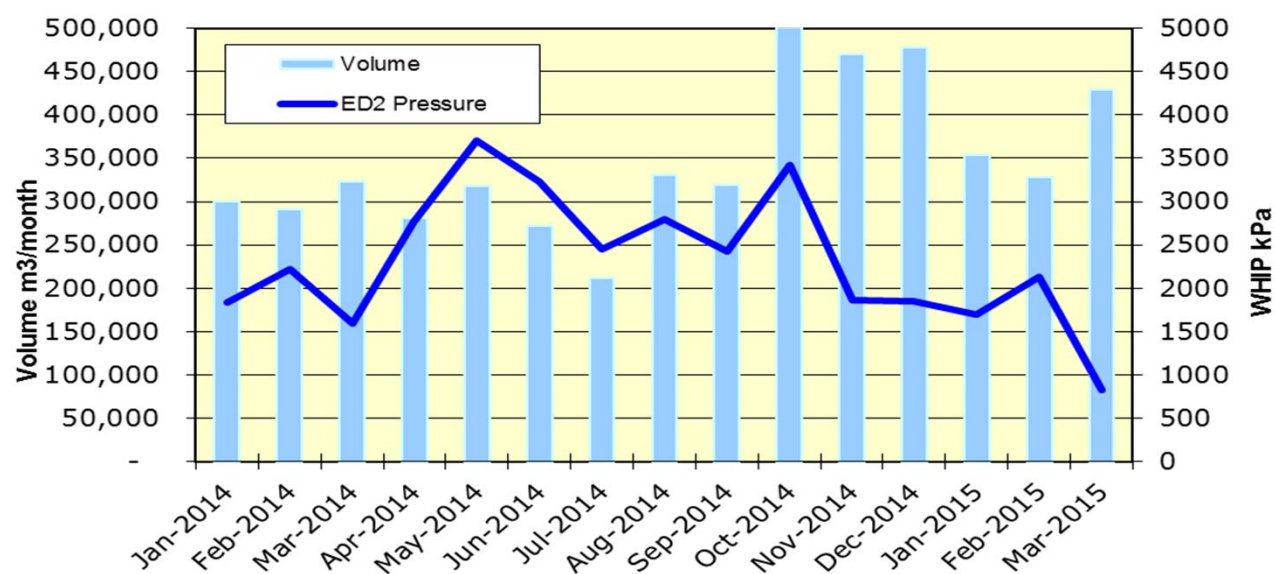
WD21 – 100/02-30-069-03W4
WD22 – 100/03-30-069-03W4
WD23 – 100/16-19-069-03W4
WD24 – 100/14-19-069-03W4
WD25 – 100/16-19-069-03W4
WD26 – 102/14-19-069-03W4
WD27 – 100/09-19-069-03W4
WD28 – 100/11-19-069-03W4
WD29 – 100/10-19-069-03W4
WD30 – 102/11-19-069-03W4

Abandoned Disposal well:
WD5 – 103/11-02-070-03W4

McMurray class 1B approval

No. 11351F MWHIP 6,250 kPag

Avg. Operating Temp
55-60°C



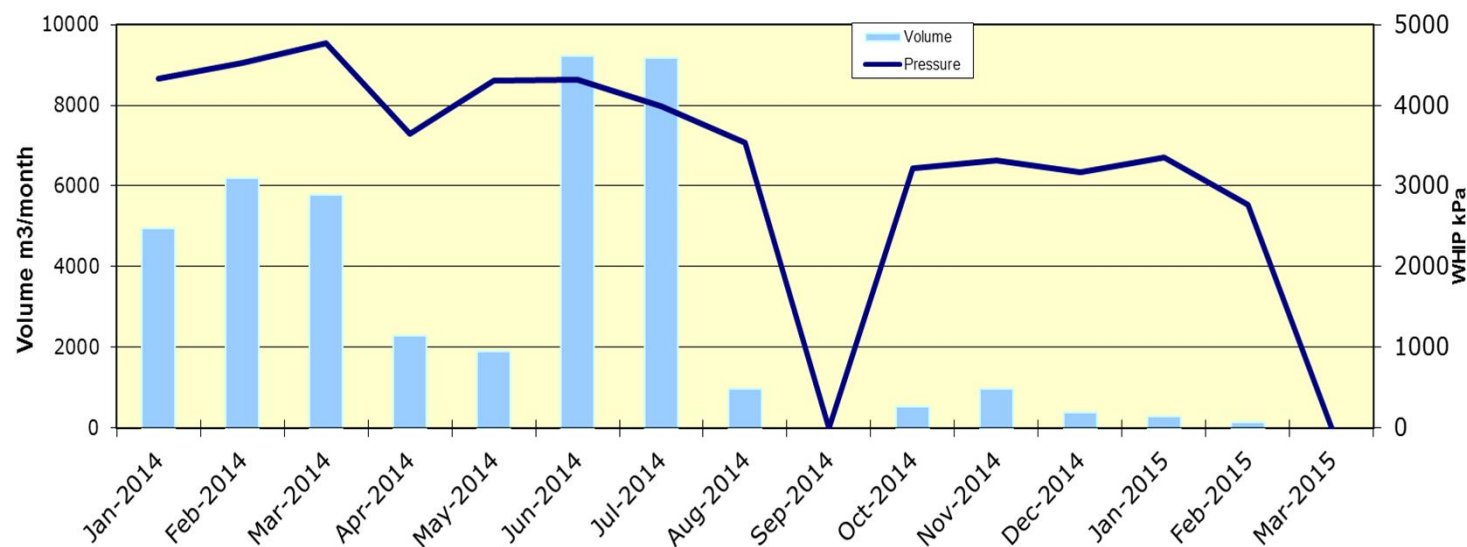
Foster Creek McMurray water disposal comments

- Disposal rates jumped in October 2014 due to the Phase F (FC3) emulsion processing area commissioning. Produced water (PW) from the processing was sent to disposal since water treatment system had not been commissioned. This increased disposal rates, despite a reduction in BD disposal from running the second stage OTSGs (SSOTSGs). In November 2014, one boiler failed in FC3 while other boilers were undergoing planned maintenance. As a result, only 1-2 SSOTSGs were running for the months of November/December. This also resulted in increased BD disposal.
- Disposal rates increased in March 2015 as a result of increased produced water disposal from FC3 commissioning. This was attributed to increasing the inlet emulsion rates to achieve plant design rates for commissioning

McMurray class II approval

No. 11059C MWHIP 6,255 kPa

Avg. Operating Temp
40-50°C



Waste disposal

Foster Creek Waste Streams	2014 Volume (m3)	Location
Slop oil/Desand Fluid	26,683	NewAlta Elk Point/Tervita Coronation/ Tervita Lindbergh Cavern
Drilling waste	53,797	Newalta Elk Point/Tervita Lindbergh Cavern/Tervita Bonnyville Landfill
Lime sludge	17,316	Newalta Elk Point/Tervita Lindbergh Cavern/Tervita Bonnyville Landfill
Contaminated soils	1,408	Newalta Elk Point/Tervita Lindbergh Cavern/Tervita Bonnyville Landfill/RBW Edmonton
Sweetening liquids/sludge	9,340	Absolute Environmental Class Ia Disposal Well/ Cancen New Sarepta/Tervita Unity Cavern
Acid Workover Program	434	Tervita Lindbergh Cavern

Sulphur production

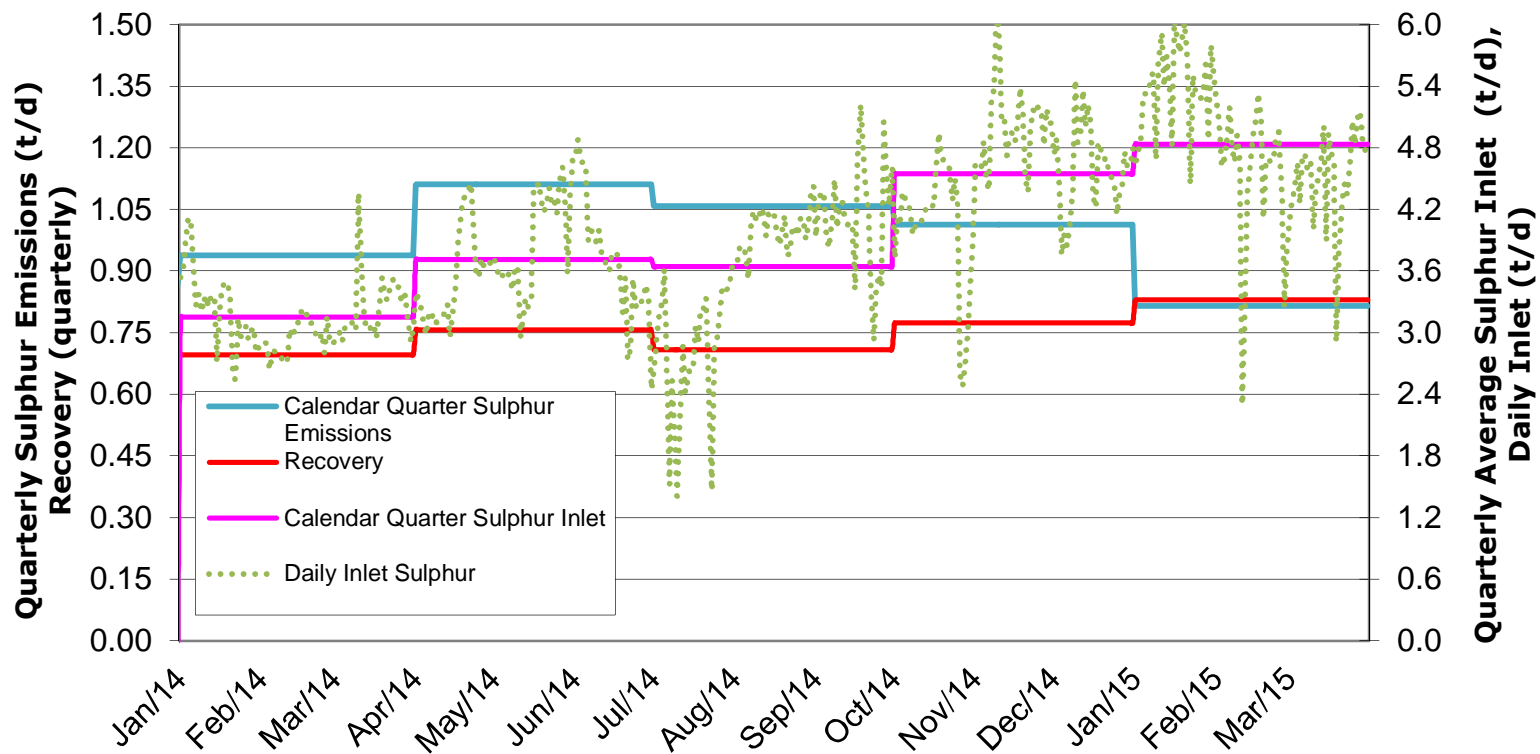


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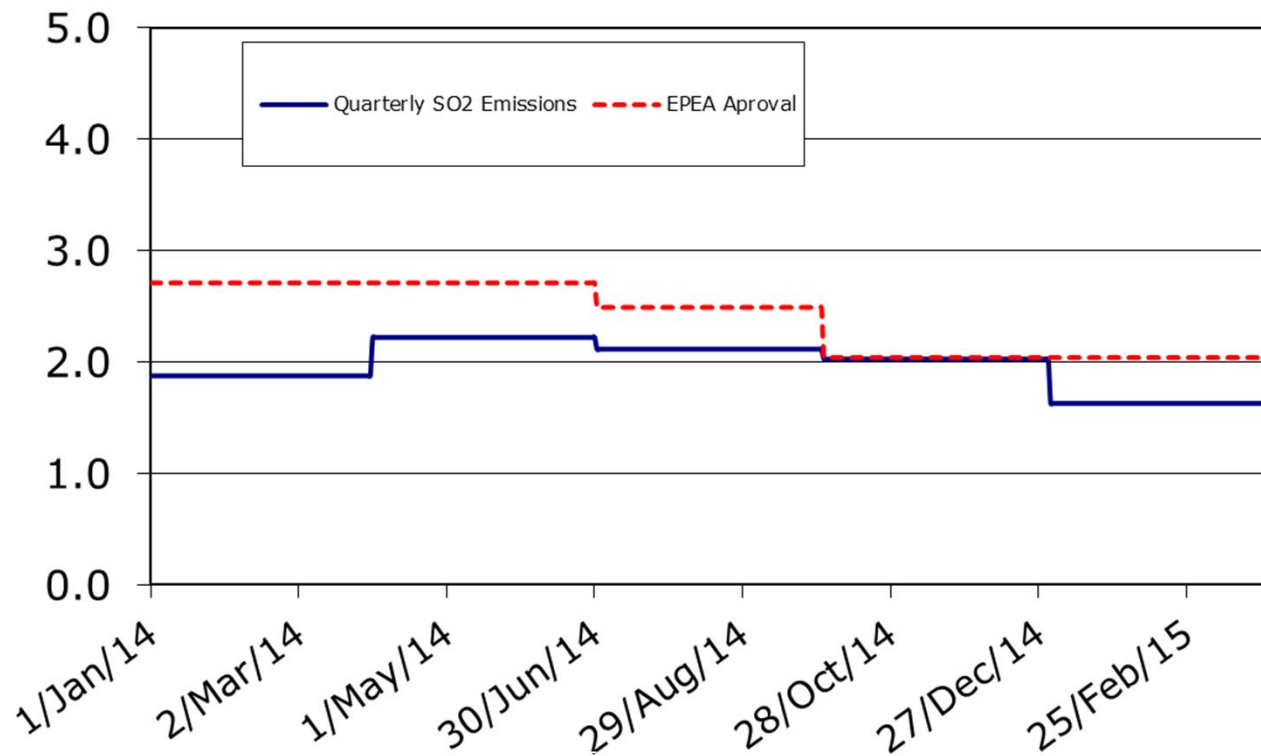
Sulphur recovery overview

- Central facility non-regenerative sweetening unit (NRSU) has been used since April 2007 to meet sulphur recovery requirements
- Second unit added in 2010 at Phase A-E – can be used in parallel or for backup
- Additional unit at Phase F
- High operating costs for chemical and disposal
- Balance recoveries on a daily/monthly basis
- Sulphur recovery – Q1 2014: 69.7%, Q2 2014: 75.8%, Q3 2014: 71.0%, Q4 2014: 77.4%, Q1 2015 83.0%

Sulphur recovery



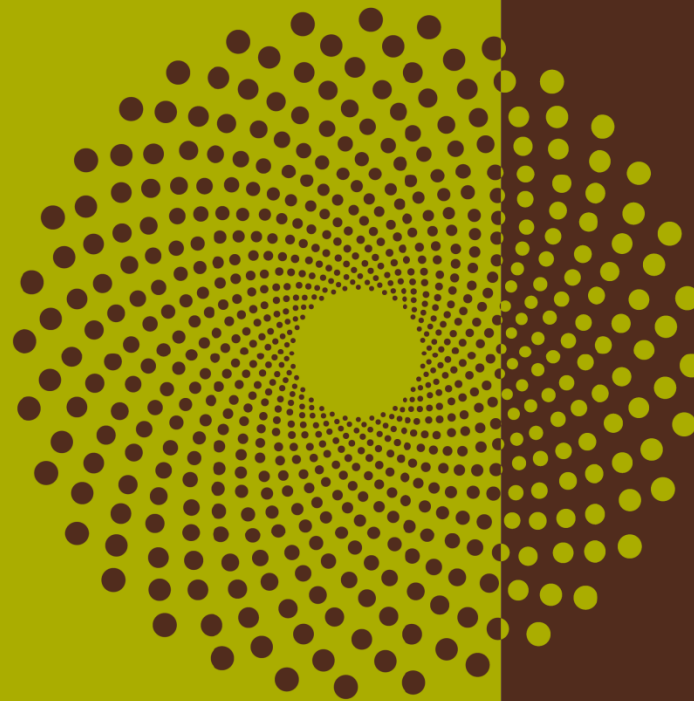
SO₂ emissions (tonnes per day)



Sulphur recovery comments

- Sulphur recovery system being reviewed to ensure it has sufficient capacity
- Re-designed and installed new inlet gas sparger (distributor) in all three NRSUs to improve flow rate and reliability. This new sparger significantly reduces fouling and plugging.
- Planning to perform capacity test with the new sparger in Q3 - 2015
- Reviewing pressure drop profile in the system. Initiated project to change inlet valve in NRSU 2 to reduce pressure drop.
- C Pad compressor reliability has been improved to handle casing gas flows.
- Continued use of non-regenerative sweetening unit (NRSU) technology
- Developing casing gas gathering pipeline model to ensure appropriate capacity at lower pressure drop.

Environmental issues summary



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Environmental non-compliance 2014

- AER Events:

- Two NOx exceedances
- Four CEMS availability contraventions
- Twenty-one environmental spills were reported and remedial action taken
- Four 7-day letters submitted
 - D55 secondary containment failure; Pipeline overpressure; Waste delivered to wrong facility; Bottom hole over-pressure

- AESRD Events:

- Four 7-day letters submitted
 - Non-Compliance to License approval conditions

- Federal Events:

- No non-compliance events

AER scheme applications – filed in 2014, approval received

Application	Filing Date	Approval
W07 and 10 Pads Alternate Spacing	January 21, 2014	February 10, 2014
W18 Reconfiguration	February 20, 2014	March 27, 2014
MOP Increase	February 28, 2014	May 29, 2014
Microbial Enhanced Start-up	March 10, 2014	August 19, 2014

AER scheme applications – filed in 2014, approval received continued

Application	Filing Date	Approval
Dual lateral production well J Pad	March 14, 2014	August 19, 2014
E22, W19, W20 &W23 Reconfiguration	April 7, 2014	July 7, 2014
Temporary MOP Increase	April 22, 2014	April 30, 2014
Change of metering equipment W06/E21	May 30, 2014	August 1, 2014
Pressure sink well application	May 30, 2014	October 3, 2014
Surfactant Steam Process Project	May 30, 2014	January 14, 2015

AER scheme applications – filed in 2014, approval received continued

Application	Filing Date	Approval
D081 Heat Integration Project	July 14, 2014	October 3, 2014
Steam Dilation	July 30, 2014	October 14, 2014
E26 and W10, W16 and W21 Reconfiguration	August 7, 2014	December 10, 2014
Propane Solvent Aided Process (SAP) Test	August 18, 2014	January 26, 2015

AER scheme applications – filed in 2014, approval received continued

Application	Filing Date	Approval
Air Injection Pilot Rampdown, Blowdown FI1 & FI2	September 4, 2014	October 3, 2014
Coinjection of NCG (Methane) Central and East Pod	October 7, 2014	March 26, 2015
Methane Removal Well	October 8, 2014	February 5, 2015
Increase CH ₄ inj. Rate at Pads A, C & D	October 14, 2014	February 5, 2015

AER scheme applications – filed in 2014, approval received continued

Application	Filing Date	Approval
Hot Spot Surfactant Trial (E24P02)	October 24, 2014	March 18, 2015
Downhole Heater Enhanced start- up	December 17, 2014	February 11, 2015

Approval amendments – AESRD EPEA

Phase J EPEA Approval

- Approved December 17, 2014 (68492-01-03)

Annual reporting - 2014

The following reports were submitted March 2014 as per EPEA Approval 00068492-01-03:

- Annual Groundwater Reports
- Annual C&R Plan
- Annual Air Monitoring Report
- Annual Industrial Runoff Report

Monitoring programs

Cenovus is required to implement the following monitoring programs as part of EPEA Approval 00068492-01-03:

EPEA Requirement	Report Name	Due Date	Status
Schedule VIII, Condition 4	Wildlife Mitigation Program	October 31, 2012	Implemented
Schedule VIII, Condition 19	Updated Wildlife Mitigation Program	June 30, 2015	Not due yet
Schedule VIII, Condition 13	Wildlife Monitoring Program	October 31, 2012	Implemented
Schedule VIII, Condition 21	Updated Wildlife Monitoring Program	June 30, 2015	Not due yet
Schedule VIII, Condition 9	Woodland Caribou Mitigation and Monitoring Plan	January 31, 2013	Implemented
Schedule VIII, Condition 20	Updated Woodland Caribou Mitigation and Monitoring Plan	May 15, 2015	Submitted
Schedule IX, Condition 41	Updated Wetland Reclamation Trial Program	June 30, 2015	Not due yet
Schedule IX, Condition 47	Reclamation Monitoring Program	July 31, 2013	Implemented
Schedule XI, Condition 2	Updated Wetland Monitoring Program	June 30, 2015	Not due yet
Schedule VII, Condition 1	Soil Monitoring and Management Program Proposal	February 1, 2014 February 1, 2019	Submitted / Approved Not due yet
Schedule IX, Condition 28	Project-Level Conservation, Reclamation and Closure Plan	June 30, 2016 (industry-wide extension granted)	Not due yet
Schedule IX, Condition 17	Decommissioning Plan and Land Reclamation Plan	Within six months of the plant ceasing operation	Not due yet

Goals of monitoring programs

Wildlife and Caribou Mitigation and Monitoring:

- The monitoring programs propose mitigation measures, metrics, targets, and monitoring objectives
- Monitoring and mitigation is based on an outcomes based approach to facilitate continuous improvement
- First Comprehensive Wildlife Report was submitted May 15th, 2015

Mitigation measures are designed in relation to project-related issues that have the potential to affect:

- Wildlife habitat availability and use, including noise and other sensory disturbance
- Wildlife mortality
- Obstruction of movement

Goals of monitoring continued

Wetland monitoring:

- Objective is to assess and quantify potential impacts of project infrastructure on surrounding wetlands using selected metrics and targets
- Effects of roads, well pads, borrow pits and CPFs will be monitored throughout the life of the project by assessing key parameters including water quality, water levels, vegetation species composition, cover and vigour

Co-operative initiatives

Cenovus participates in various co-operative efforts to address industry issues:

- Regional environmental monitoring
- Environmental research
- Stakeholder consultation
- Innovation and continuous improvement

Cooperative initiatives - Examples

- Canada's Oil Sands Innovation Alliance (COSIA)
- Contributed to over thirty projects including: Wildwatch, LiDEA, Fladry, Geodesign, Functional Quality Land Metric, etc.
- Support for three chairs at the University of Alberta
- Contributor to the Joint Canada-Alberta Oil Sands Monitoring (JOSM)
- Lakeland Industry and Community Association (LICA)
 - Airshed Monitoring
 - Beaver River Watershed Alliance

Cooperative initiatives continued

- Regional Industry Caribou Collaboration project
- Alberta Chamber of Resources (ARC)
- Chair of the Caribou Committee
- Ecological Monitoring Committee for the Lower Athabasca (EMCLA)
- CAPP Environment Committee

Reclamation

- The Reclamation Monitoring Program was approved in August of 2014
- Final reclamation activities have been initiated and/or completed on small portions of the commercial footprint (remote from the CPF) that are no longer required
- Interim reclamation is present on approximately 25% of the commercial footprint not currently being used in construction or operations
- There is currently no facility abandonment scheduled, consequently no well pad reclamation has commenced

Reclamation continued

Restoration of legacy 2D seismic footprints was initiated in 2012 and continued through 2013 to 2014:

- TWP 72 & 73, RGE 1 & 2, W4M
- Objective is successional advancement, increasing the growth and abundance of conifers and coarse wood on linear features, reducing trafficability
- Treatments employed on linear features include mounding, stand modification and tree planting
- Treatment progress to-date has covered 237 km

Statement of Compliance



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Compliance statement

Cenovus maintains and tracks compliance through the CenTrac conditions/commitment database, Incident Management System (IMS), routine inspections, and dedicated regulatory and environmental staff.

Cenovus believes its operations are in compliance with AER approvals and regulatory requirements.

Non-compliance



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Non-compliance events

AER non-compliant events:

- July 22, 2014
Notice of Noncompliance – Outstanding Serious SCVF/GM @100/03-22-070-04W04
Corrective action –
AER extension granted till July 31, 2015 to repair
- October 20, 2014
Notice of Low Risk Noncompliance with Directive 050 Oilfield Drilling Waste @
120/03-17-070-03W4/00 & 102/03-17-070-03W4/02 License #: 0445344
Corrective action-Cenovus submitted DDS Drilling Waste Management Disposal
Form.
Compliance was achieved October 22, 2014

Self-Disclosures

Cenovus Voluntary Self-Disclosures:

- June 12, 2014

Non-Compliant with Directive 050 Post Disposal Notification Requirements. Post disposal notification for the 104/04-01-070-04W4/00 well not completed within the 24 months of rig release (rig release June 7, 2012).

Corrective action

Cenovus submitted DDS Drilling Waste Management Disposal Form. Compliance was achieved June 18, 2014

- June 18, 2014

Secondary Containment System Non-Compliant With Directive 55 (T-305 desand tank and T-301B pop tank containment, some holes identified in the liner).

Corrective action

Cenovus repaired the containment. Compliance was achieved July 30, 2014

Self-Disclosures

- October 29, 2014

Maximum bottom hole injection pressure exceedance @ 103/4-1-70-4W4
Approval No. 8623

Corrective action

Operator was reminded of the importance to fully understand and follow Cenovus's procedures.

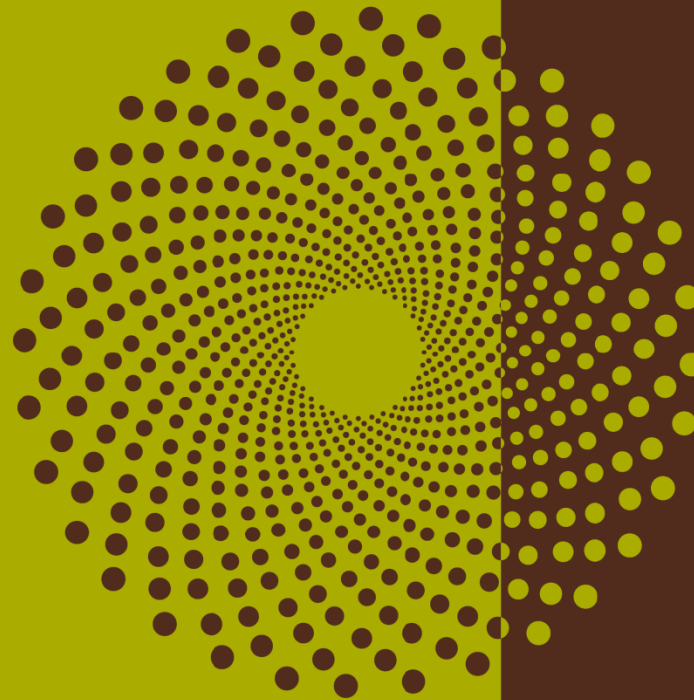
- December 3, 2014

Pad C Methane over injection rate Scheme Approval 8623WW

Corrective action

Cenovus changed the orifice plate size and control module was updated.

Future plans



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Future projects

Current capacity is 150,000 bbls/d, target for Phases F,G & H to peak at 210,000 bbls/d. Evaluating opportunities to increase capacity.

Currently scoping plant optimization opportunities for Phases A-E

Phases F,G & H update

- New steam generation and production treating facilities being constructed next to the existing plant
- Phase F: 30,000 bbls/d, Phase G: 30,000 bbls/d, Phase H: 30,000 bbls/d, for total new capacity of 90,000 bbls/d ($4,770 \text{ m}^3/\text{d} + 4,770 \text{ m}^3/\text{d} + 4,770 \text{ m}^3/\text{d} = 14,310 \text{ m}^3/\text{d}$)
- Potential for another 35,000 bbls/d of optimization work
- The majority of new expansion is planned to be drilled west of the plant

Note that production volumes refer to production capacity on an incremental basis

Future projects continued

Current success in SOR & WOR, and increased efficiencies in plant operations at Foster Creek indicates that Phases A – H may be capable of production greater than 240,000 bbls/d

Upcoming regulatory applications

- Currently evaluating opportunities to increase project capacity to 310,000 bbl/d (49,286 m³/d)
- Additional wells to recover un-swept reserves including injector-producer well pairs and single well producers
- Continued exit strategies for mature pads
- Future phase & sustaining development well pads

Currently drilling, completing and performing facilities work for sustaining and Phase F and G wells in 2014 through 2015

Note that production volumes refer to production capacity on an incremental basis

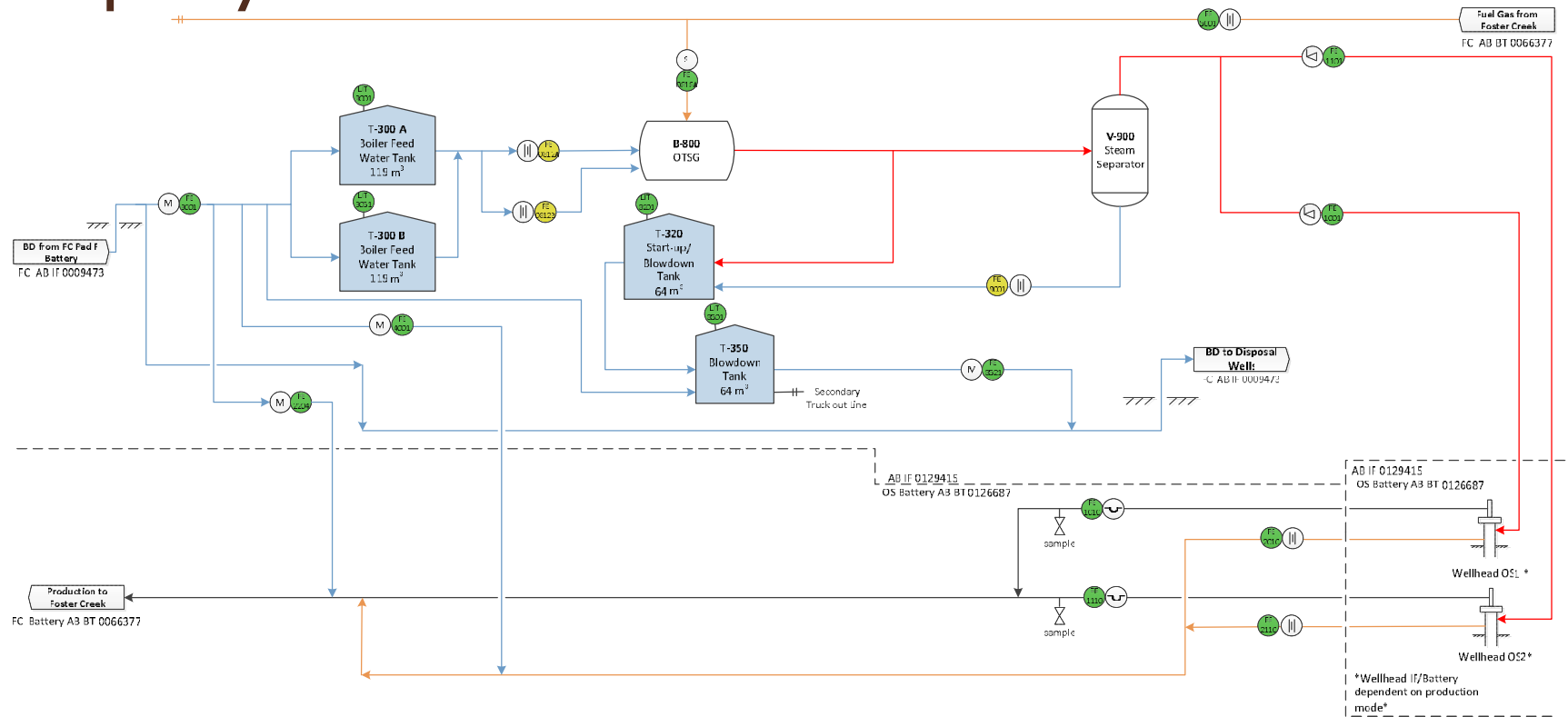
Osprey Pilot

Surface
Calgary | June 24, 2015



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Osprey Process Schematic



Self-disclosure

October 29, 2014

Over pressure (5700 kPa) on maximum bottom hole pressure (5500 kPa) on OS1 (103/04-01-070-04W4M).

Corrective Action

Operator error was the root cause of this incident. Operators will be reminded of the importance to fully understand and follow procedures during all tasks.

End

Self-disclosure

October 29, 2014

Over pressure (5700 kPa) on maximum bottom hole pressure (5500 kPa) on OS1 (103/04-01-070-04W4M).

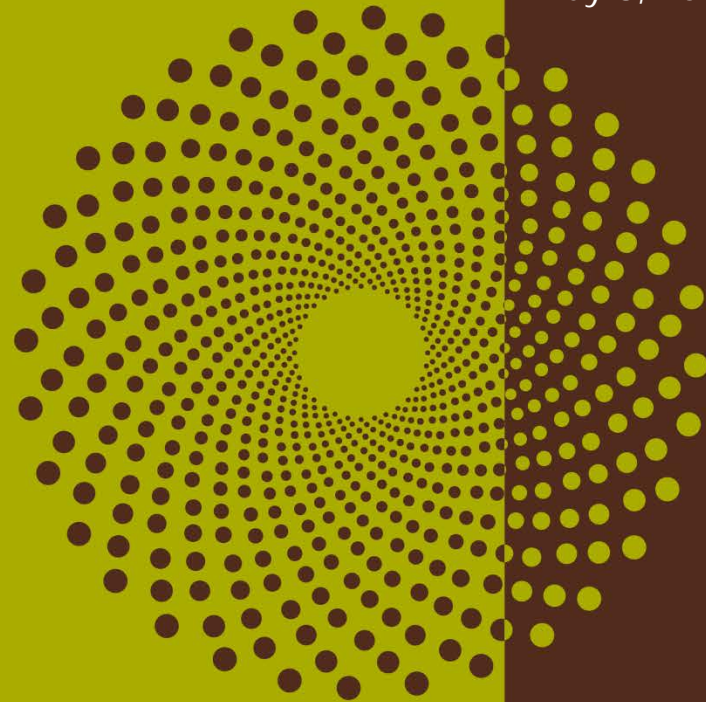
Corrective Action

Operator error was the root cause of this incident. Operators will be reminded of the importance to fully understand and follow procedures during all tasks.

End

Steam rampdown/blowdown update #8

Foster Creek Reservoir
Engineering & Geology
AER Office | Calgary, AB |
May 8, 2015

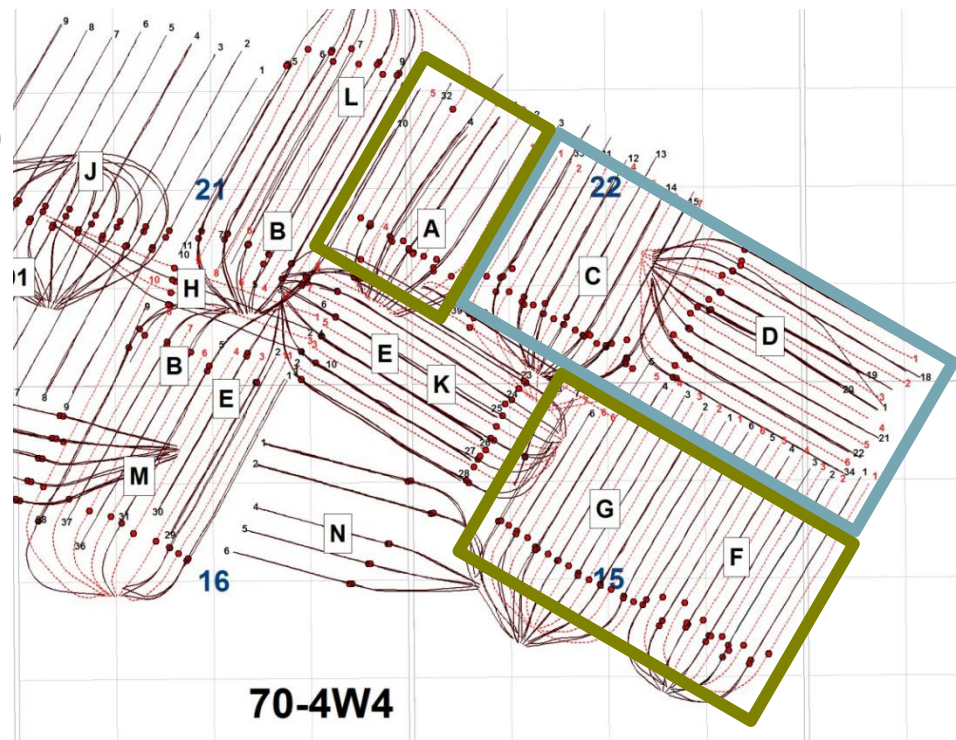


Advisory

This document contains forward-looking information prepared and submitted pursuant to Alberta regulatory requirements and is not intended to be relied upon for the purpose of making investment decisions, including without limitation, to purchase, hold or sell any securities of Cenovus Energy Inc. Additional information regarding Cenovus Energy Inc. is available at cenovus.com.

Agenda

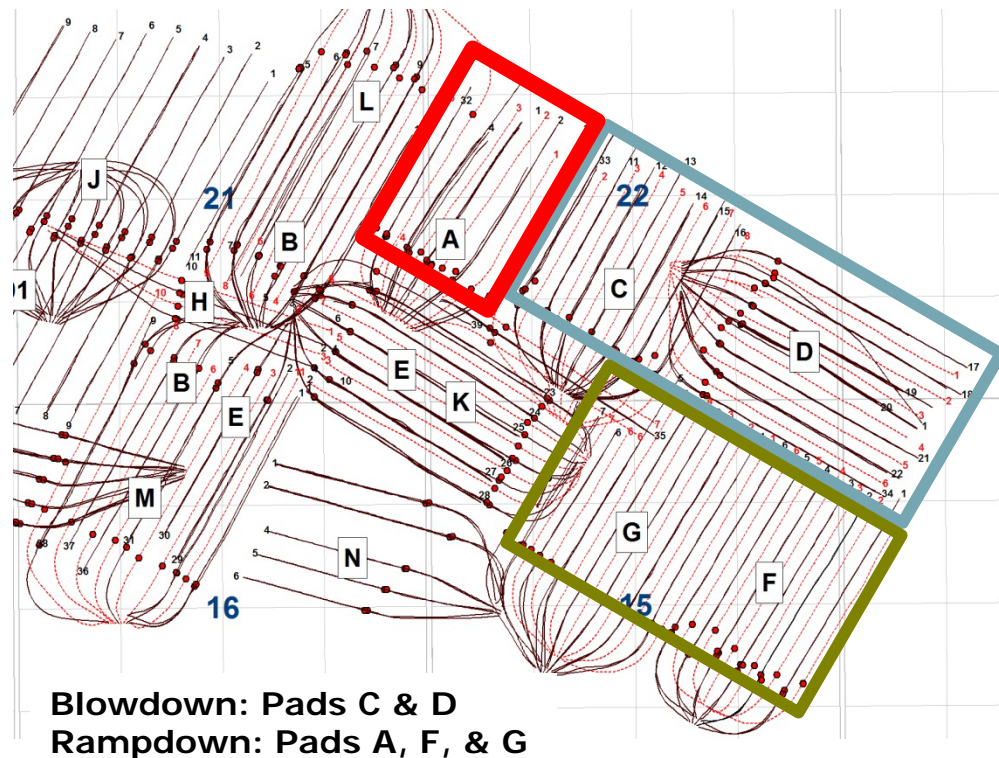
- Foster Creek Thermal Project is our 50/50 joint venture with ConocoPhillips in which Cenovus FCCL Ltd. is the operator
- **Pad Updates (A, C, D, F & G)**
 - Operational review
 - Temperature monitoring
 - Fluid saturation updates
 - Compositional analysis
- **Next steps**
 - Pads A, C, D, F & G



Blowdown: Pads C & D
Rampdown: Pads A, F, & G

Pad A – update

- Operational review
- Temperature monitoring
- Fluid Saturation updates
- Compositional analysis



Methane injection

Clause (23) Sub Clause (1) of Scheme Approval 8623

The operator shall conduct the ramping down and ceasing of steam injection, and injecting of non-condensable gas, at Well Pads A, C, D subject to the following conditions:

- (1) The non-condensable gas injected will only be methane (fuel gas)

Pad A – operational overview

Injectors:

- AI1, AI4 and AI32 equipped and operational for methane injection
- AI2 and AI3 abandoned
- Methane injection started in March 2012
- Pad cum injection of 20,210 Se³m³ of methane to Feb 28, 2015

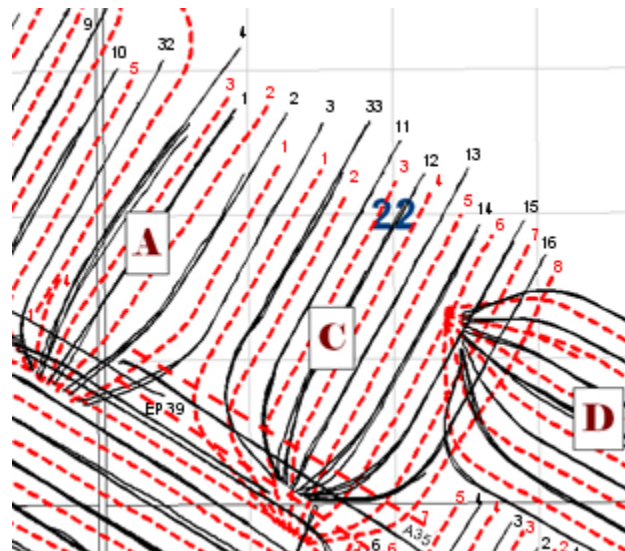
Producers:

- AP1, AP2, AP3, and AP32 are operational
- AP4 (offline)
- All five wells utilizing Wedge Well™ technology are in operation
 - Currently injecting steam in A-inf1

Pad A– injection summary

Injector	Methane Injection Start Date	Cum gas injected to Feb 28, 2015 (Se3m3)
AI1	Mar 2012	7,535
AI4	Apr 2012	5,944
AI32	Mar 2012	6,731
Total		20,210

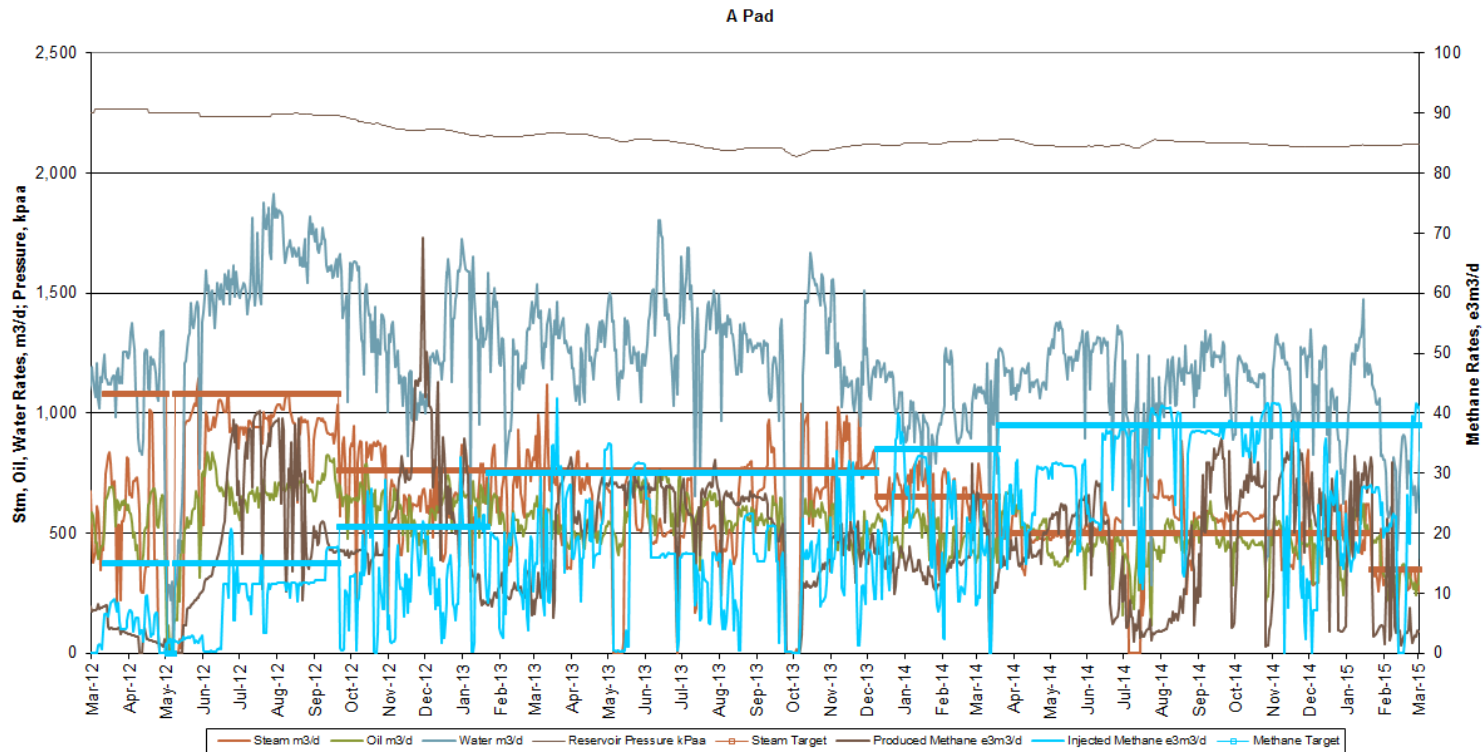
Cum gas since March 2012.



Well pairs

Wells utilizing Wedge Well™ technology

Pad A – production & injection



Pad A – oil voidage

- Percentage Gas injected volume per oil produced
Gas - Chamber Conditions

20,210 Se3m3, Methane Injected (Std Conditions)

11,596 Se3m3, Methane Produced, excluding solution gas (Std Conditions)

8,614 Se3m3, Net Methane Injected (Std Conditions)

8.648 kg/m3, Density of Methane in Chamber

657,394 m3, Net Methane Injected at Reservoir Conditions

% Gas Volume Injected vs Oil Voidage

Since Start of A Pad Production, 1997

657,394 m3 of net methane injected (reservoir conditions)

2,652,981 m3 of oil produced (as of Feb 28, 2015)

24.78% oil voidage displaced by injected methane

Pad A – injection strategy

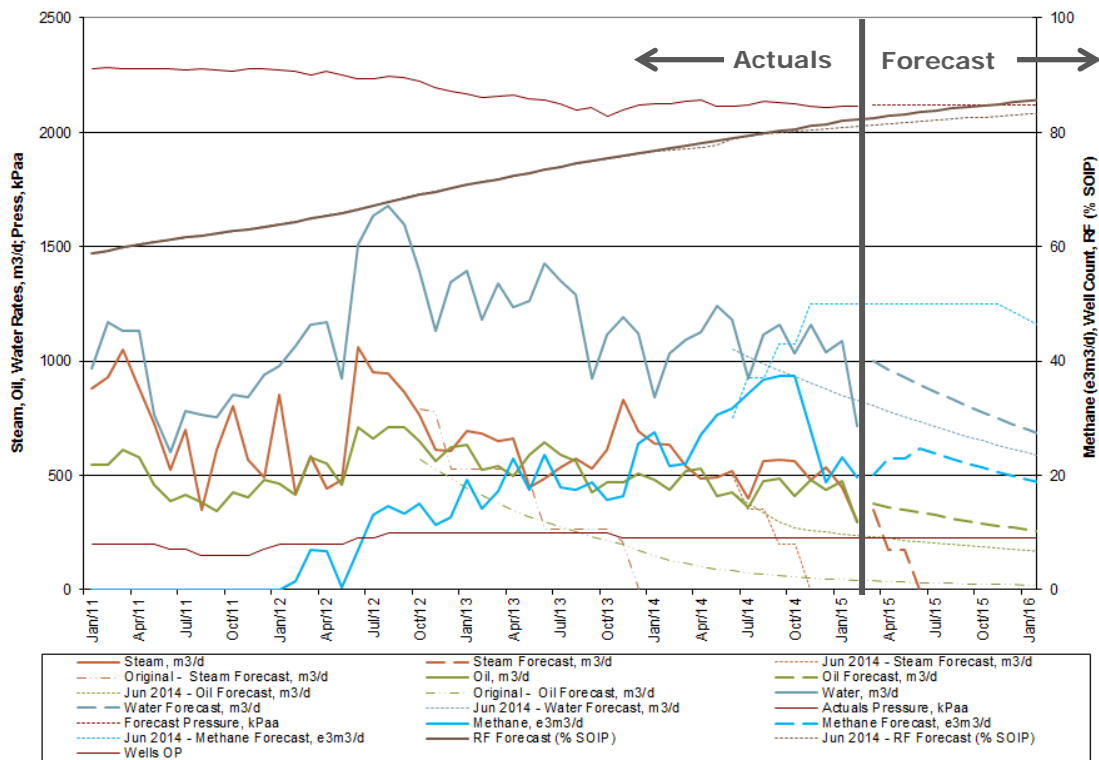
May 2015 to June 2015

- Operating in last steam cut phase
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads

June 2015 onwards

- Steam injection stopped, blowdown
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads

Pad A – predictive forecast



Temperature logs & fluid saturation

Clause (23) sub clause (2) of scheme approval 8623

Temperature measurement must be conducted a minimum of twice each calendar year at the designated observation wells listed below. A suitable baseline temperature measurement must be available or obtained at each designated observation well listed below prior to commencement of steam ramp down at each pad.

03/12-22-070-04W4/0 (C12-22)

11/05-22-070-04W4/0 (A5-22)

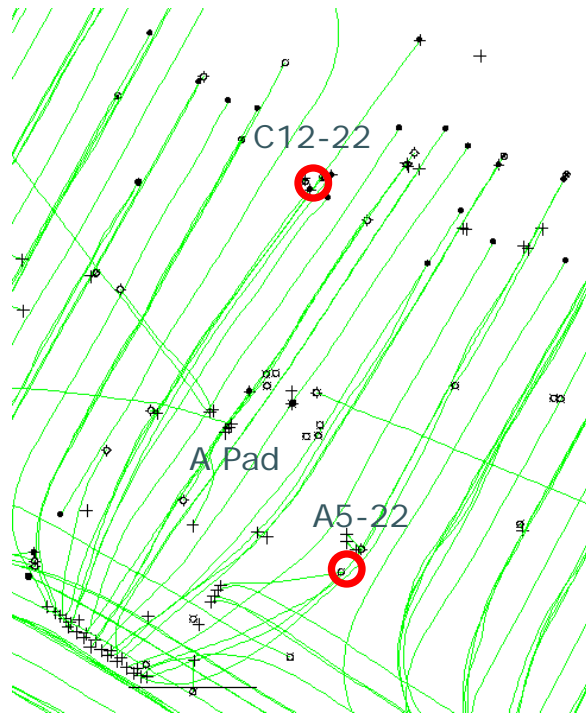
Clause (23) sub clause (3) of scheme approval 8623

Fluid saturation measurements must be conducted a minimum of once every calendar year using well logging at a minimum of one observation well at each well pad. A suitable baseline fluid saturation measurement must be available or obtained at a minimum of one observation well at each well pad prior to the commencement of steam ramp down at each well pad.

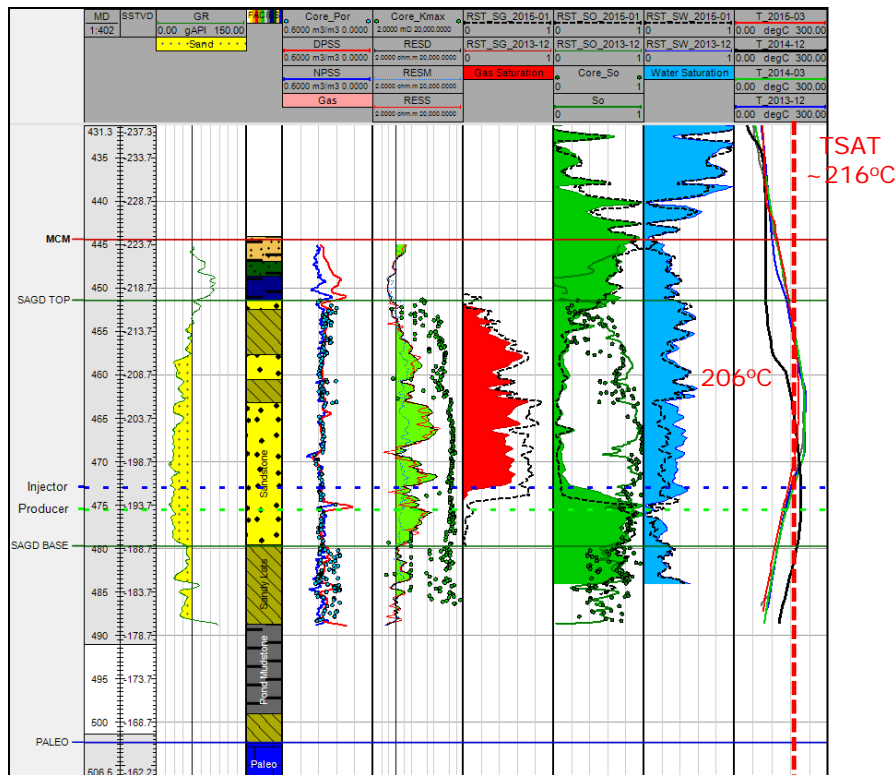
Pad A: Temperature & Fluid Monitoring

- Pad A logging history

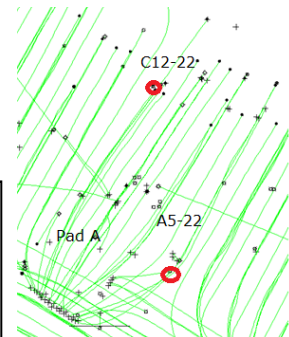
Target steam (percent)	Temperature log	RST log
100	January 2012	February 2012
70	December 2012	
70	March 2013	March 2013
60	December 2013	December 2013
45	March 2014	
45	December 2014	December 2014
30	March 2015	



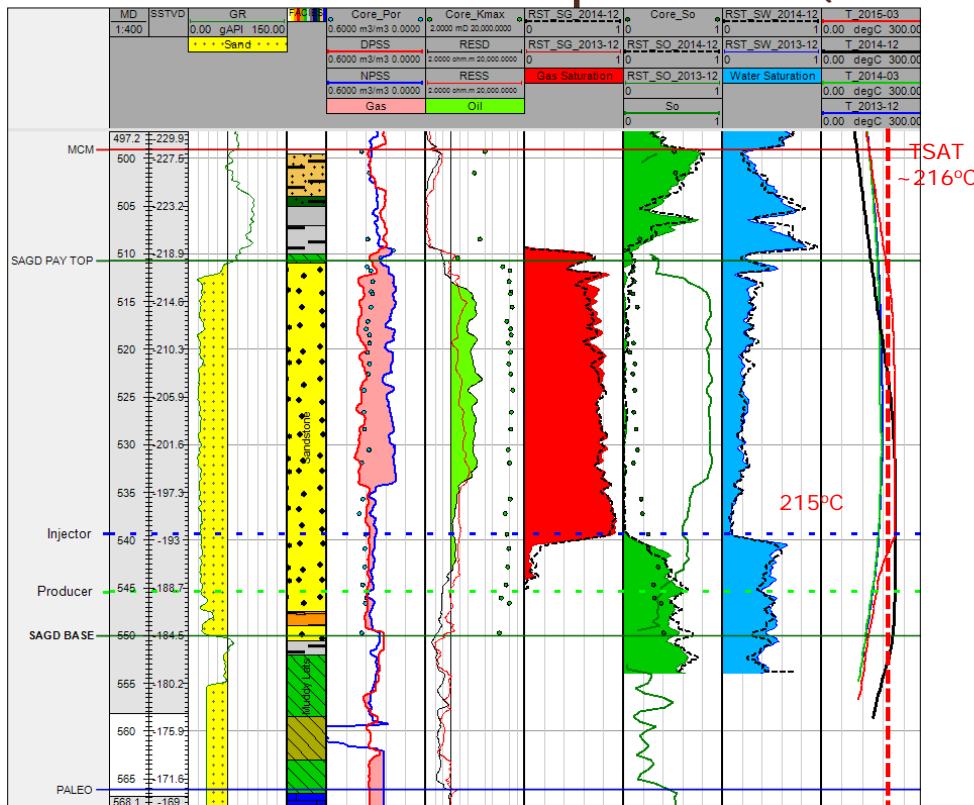
Pad A– C12-22 updated (103122207004W400)



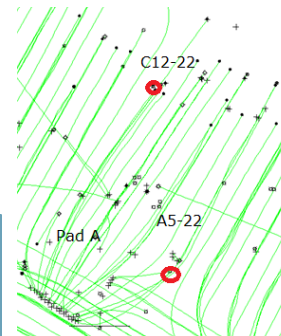
- 16m offset to A4 well pair
- March 2014 224 °C
- Current logged temperature 206 °C
- Chamber is 80 percent steam (100 percent last year)
- December 2014 temperature curve is suspect
- March 2014 to March 2015; 18 °C decrease, temperature curves are comparable
- Temperature curves remain consistent while ramping steam down to 15 percent.
- Noted increase in gas saturation, build in chamber
- Slight decrease in oil saturation



A Pad – A5-22 updated (111052207004W400)



- Steam chamber core well
- 3m offset to A3 well pair
- March 2014 170 °C
- Current logged temperature 215 °C
- 45 °C increase from previous year
- Chamber is 100 percent steam (35 percent last year)
- Possible response to wedge well-1, which started steaming November 2014
- No appreciable change in oil saturations
- Base of steam has moved down from 197.5 m asl to 193m asl

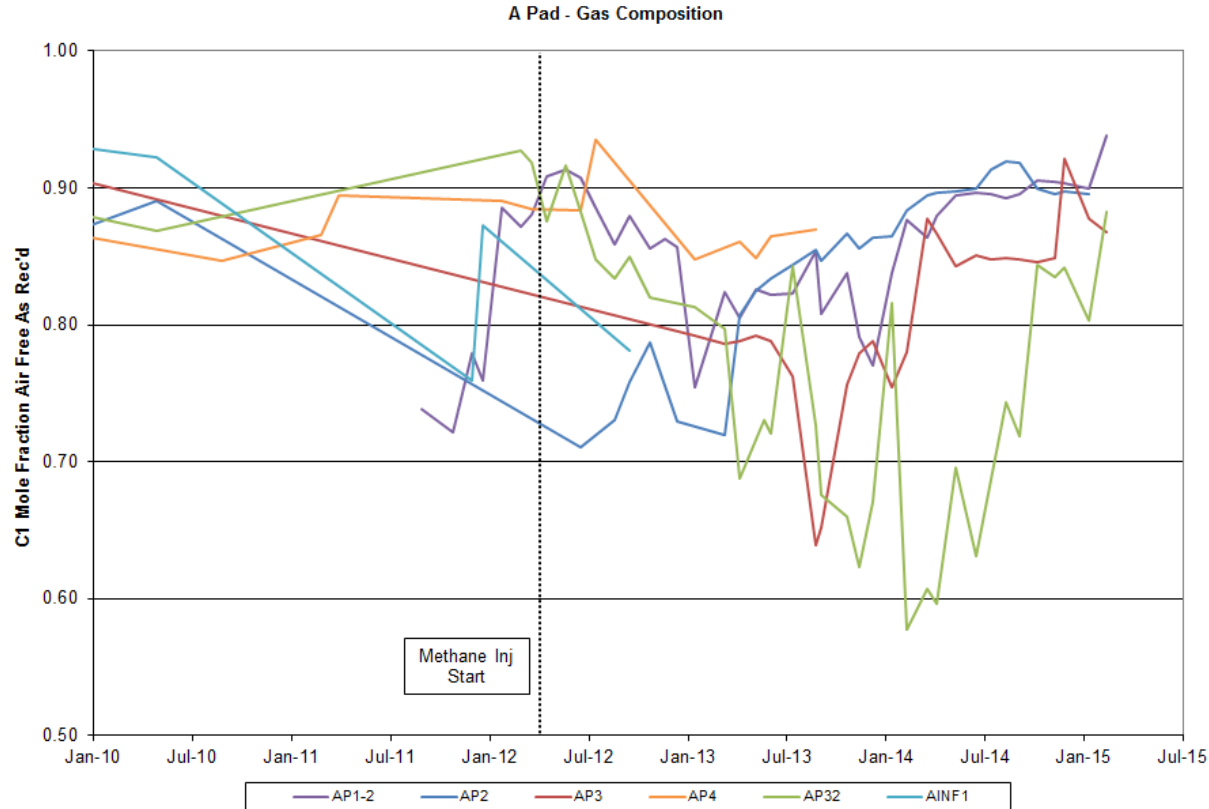


Compositional analysis

Clause (23) sub clause (4) of scheme approval No. 8623

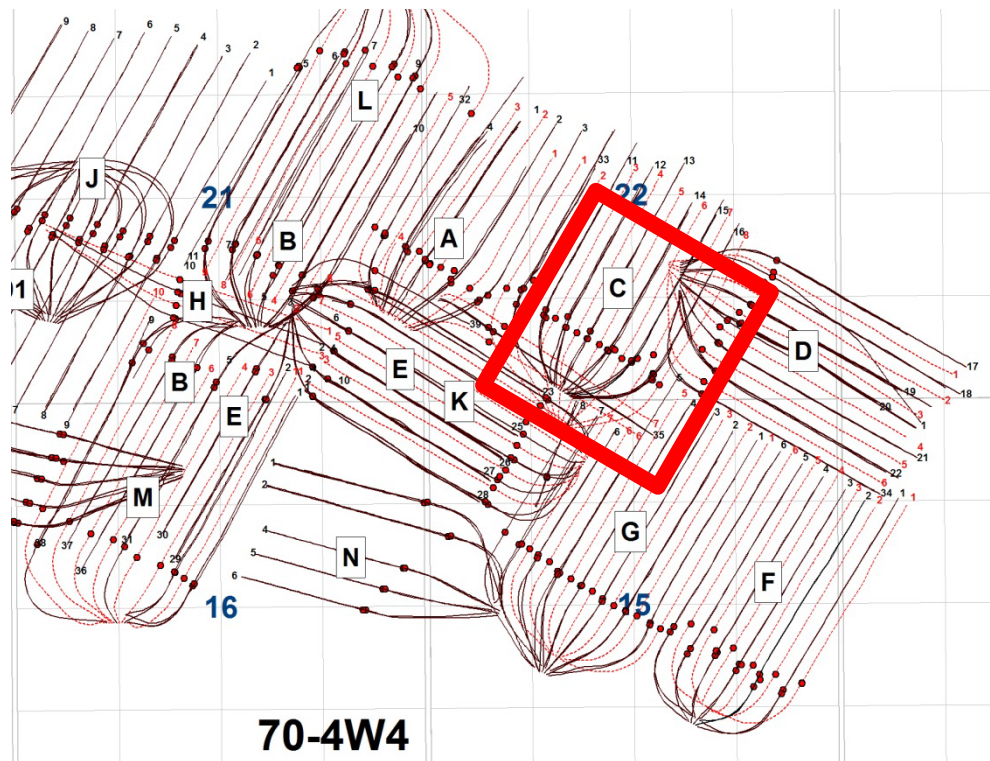
Compositional analyses of the casing gas at the 08/12-22-070-04W4/2 (AP4), 11/07-22-070-04W4/0 (CP16), and 24/13-14-070-04W4/2 (DP20) wells and compositional analyses of the produced gas on a group basis for each well pad must be obtained monthly, commencing prior to the start of steam ramp down at each well pad.

Pad A – methane C1 mole composition



Pad C– update

- Operational review
- Temperature monitoring
- Fluid Saturation updates
- Compositional analysis



Blowdown: Pads C & D

Rampdown: Pads A, F, & G

Methane injection

Clause (23) sub clause (1) of scheme approval 8623

The operator shall conduct the ramping down and ceasing of steam injection, and injecting of non-condensable gas, at Well Pads A, C, D subject to the following conditions:

- (1) The non-condensable gas injected will only be methane (fuel gas)

Pad C– operational overview

Injectors:

- CI11, CI12, CI13, CI14, CI15, and CI16 equipped and operational for methane injection
 - Injecting methane in CI11 and CI12
- Methane injection started in November 2011
 - Full blowdown March 4, 2013
- Pad cum injection of 80,252 Se³m³ of methane to February 28, 2015

Producers:

- CP11, CP13, CP14, and CP15 are operational
- CP12 (Abandoned)
- CP16 (Offline)
- CP33-1 (Abandoned)

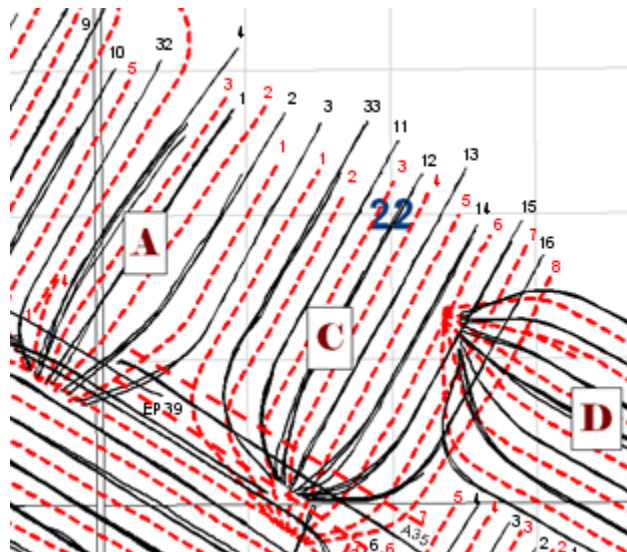
Six wells utilizing Wedge Well™ technology are in operation

- CW07 (Offline)
- CW08 (Offline)

Pad C – injection summary

Injector	Methane injection start date	Cum gas injected to February 28, 2015 (Se ³ m ³)
CI11	November 2011	12,858
CI12	February 2012	15,859
CI13	February 2012	13,642
CI14	November 2011	10,117
CI15	March 2012	15,091
CI16	February 2012	12,662
CI33	November 2012	2
Total		80,252

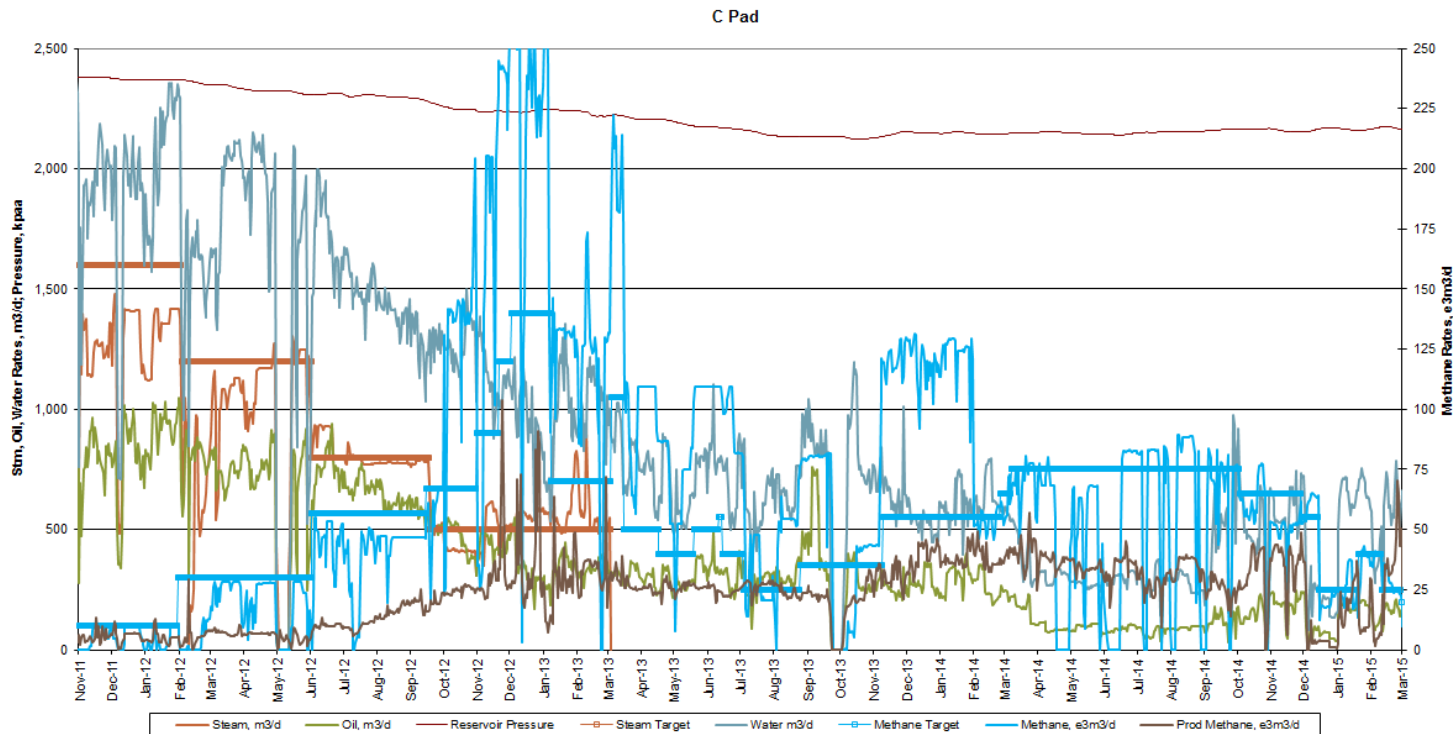
Cum gas since November 2011.



Well pairs

Wells utilizing Wedge Well™ technology

Pad C – production & injection



Pad C – oil voidage

- Percentage gas injected volume per oil produced

Gas - Chamber Conditions

79,295 Se3m3, Methane Injected (Std Conditions)

21,754 Se3m3, Methane Produced, excluding solution gas (Std Conditions)

57,541 Se3m3, Net Methane Injected (Std Conditions)

8.648 kg/m3, Density of Methane in Chamber

4,391,532 m3, Net Methane Injected at Reservoir Conditions

% Gas Volume Injected vs Oil Voidage

Since Start of C Pad Production, 2001

4,391,532 m3 of net methane injected (reservoir conditions)

3,718,575 m3 of oil produced (as of Feb 28, 2015)

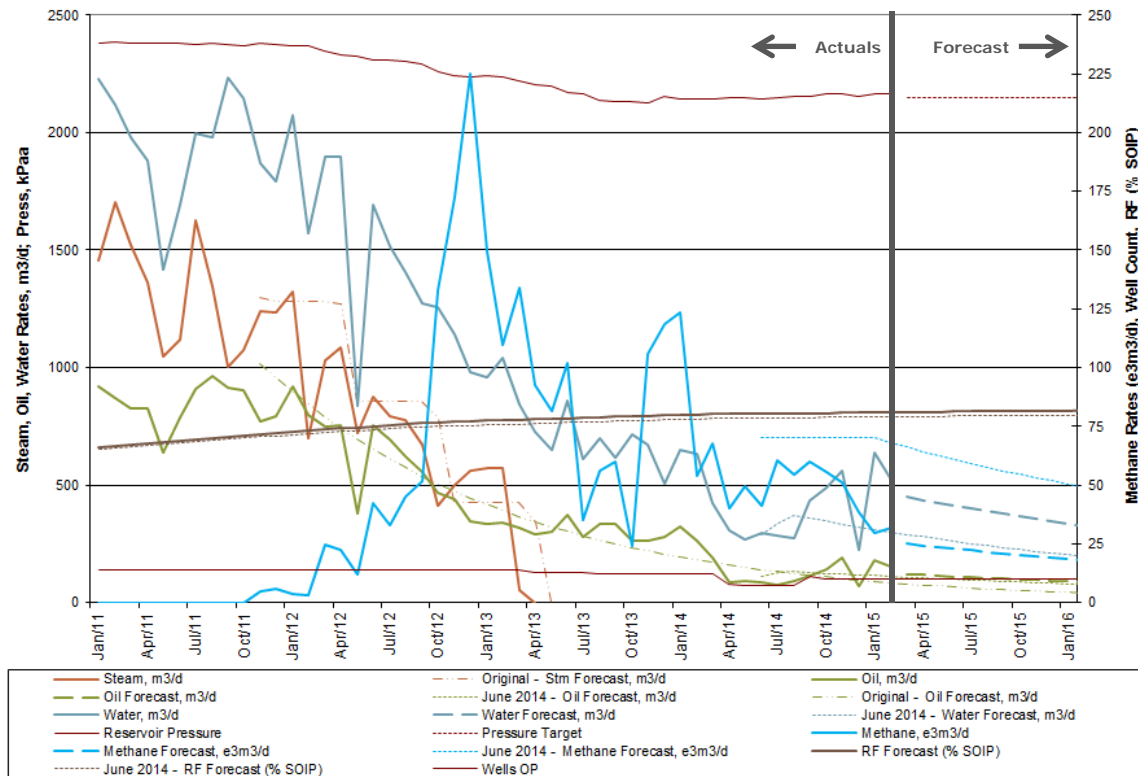
118.1% oil voidage displaced by injected methane

Pad C – injection strategy

March 2013 onwards

- Pad steam injection shut-in, full pad blowdown
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads
- Currently injecting methane in C11 & C12

Pad C – predictive forecast



Temperature logs & fluid saturation

Clause (23) sub clause (2) of scheme approval 8623

Temperature measurement must be conducted a minimum of twice each calendar year at the designated observation wells listed below. A suitable baseline temperature measurement must be available or obtained at each designated observation well listed below prior to commencement of steam ramp down at each pad.

02/06-22-070-04W4/0 (B6-22)

00/07-22-070-04W4/0 (A7-22)

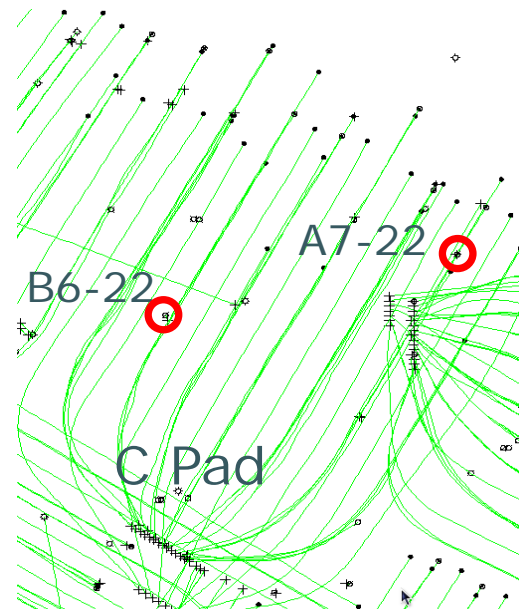
Clause (23) sub clause (3) of scheme approval 8623

Fluid saturation measurements must be conducted a minimum of once every calendar year using well logging at a minimum of one observation well at each well pad. A suitable baseline fluid saturation measurement must be available or obtained at a minimum of one observation well at each well pad prior to the commencement of steam ramp down at each well pad.

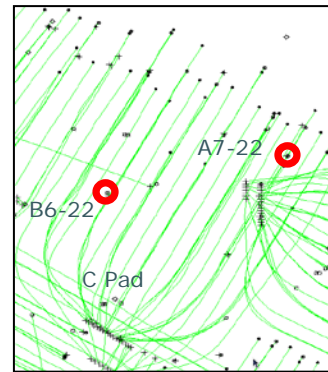
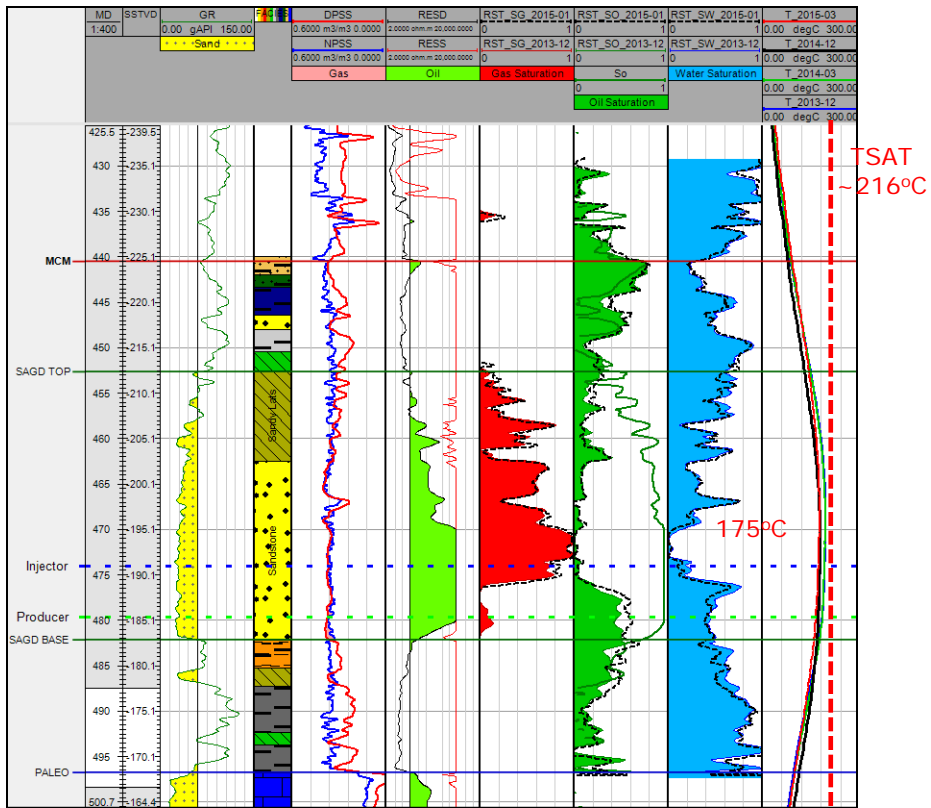
Pad C: temperature & fluid monitoring

- Pad C logging history

Target Steam (Percent)	Temperature Log	RST Log
100	January 2012	December 2011
50	August 2012	August 2012
30	December 2012	
0	March 2013	March 2013
0	December 2013	December 2013
0	March 2014	
0	December 2014	December 2014
0	March 2015	

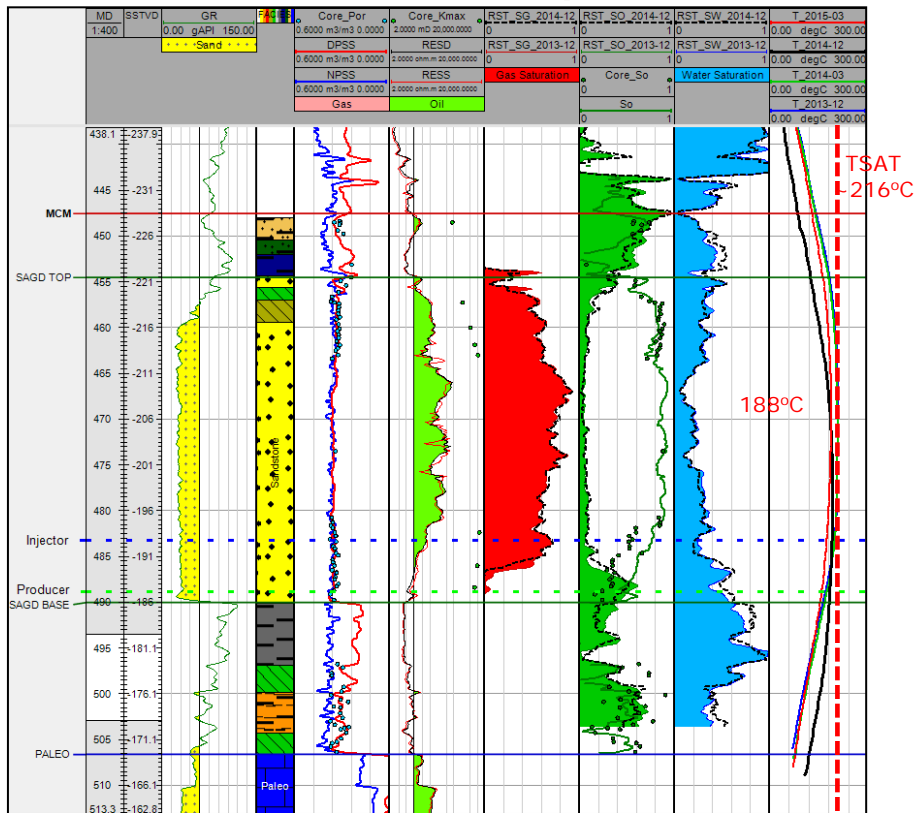
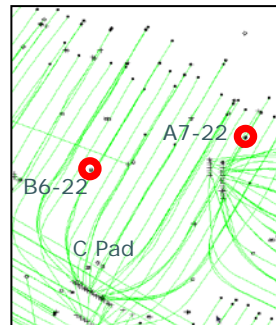


Pad C – A7-22 updated (100072207004W400)



- 3m offset C15 well pair
- March 2014 192 °C
- Current logged temperature is 175 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 40 percent steam (60 percent last year)
- Temperatures before steam ramp down were 210 °C (below calculated saturation temperature (TSAT)).
- No appreciable changes in saturations
- RST log shows slight increase in gas saturation near injector well
- RST log shows slight increase in oil sat at the producer well, possibly mobile bitumen

Pad C– B6-22 updated (102062207004W400)



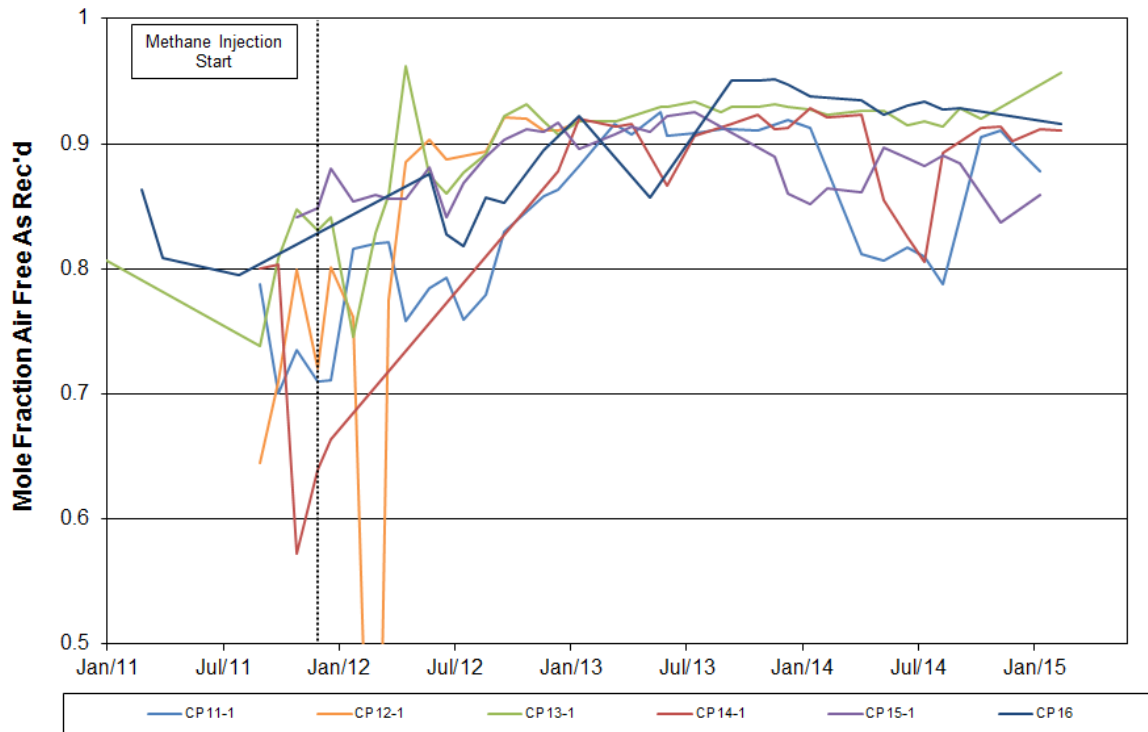
- 10m offset C11 well pair
- March 2014 205 °C
- Current logged temperature is 188 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 55 percent steam (80 percent last year)
- No appreciable changes in saturations
- Slight increase in oil saturation above producer (possibly mobile bitumen)

Compositional analysis

Clause (23) sub clause (4) of scheme approval No. 8623

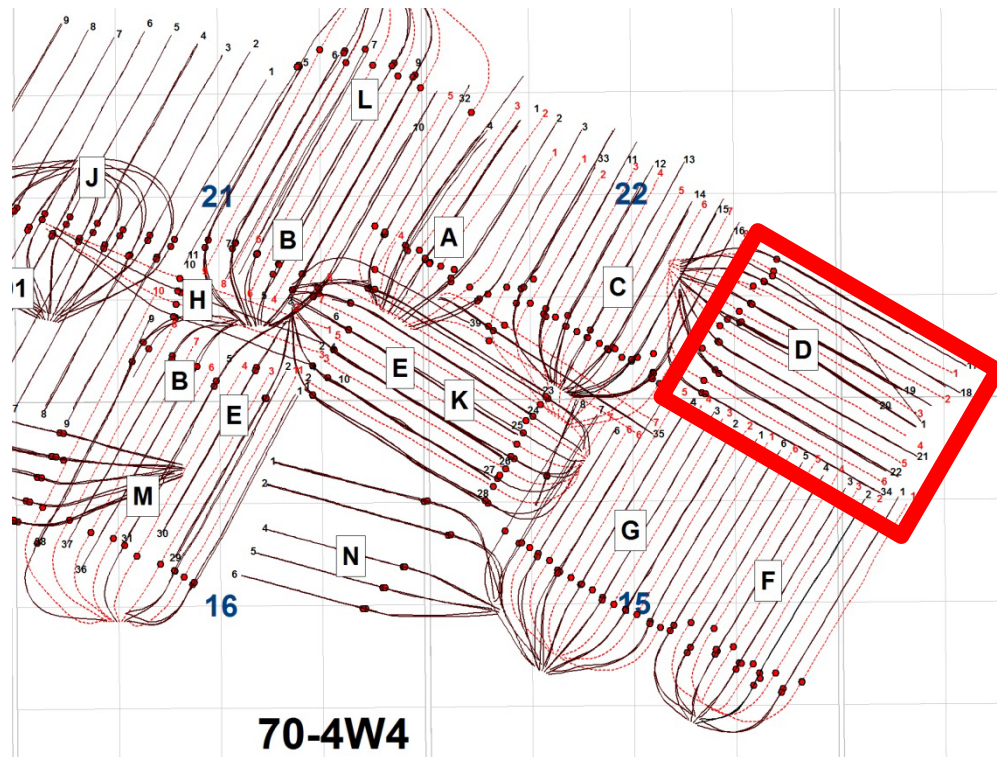
Compositional analyses of the casing gas at the 08/12-22-070-04W4/2 (AP4), 11/07-22-070-04W4/0 (CP16), and 24/13-14-070-04W4/2 (DP20) wells and compositional analyses of the produced gas on a group basis for each well pad must be obtained monthly, commencing prior to the start of steam ramp down at each well pad.

Pad C – methane C1 mole composition



Pad D – update

- Operation review
- Temperature monitoring
- Fluid saturation updates
- Compositional analysis



Blowdown: Pads C & D
Rampdown: Pads A, F, & G

Methane injection

Clause (23) sub clause (1) of scheme approval 8623

The operator shall conduct the ramping down and ceasing of steam injection, and injecting of non-condensable gas, at Well Pads A, C, D subject to the following conditions:

- (1) The non-condensable gas injected will only be methane (fuel gas)

Pad D – operational overview

Injectors:

- DI17, DI19, DI20, DI22 and DI34 equipped and operational for methane injection
 - Full blowdown (excluding D17) as of March 19, 2015
 - DI19 and DI34 currently injecting methane
 - DI17 currently injecting steam (application to proceed to blowdown submitted)
 - DI18 and DI21 – Abandoned well
 - DI34 - steam shut-in as of December 10, 2012
 - Methane injection initially started in August 2010 at low rates
 - Pad cumulative injection of 23,485 Se³m³ of methane to February 28, 2015

Producers:

- DP17, DP20, DP21, DP22, DF-1, & DP34 operational
 - DP18 - Abandoned well
 - DP19 - Production issues, well not producing

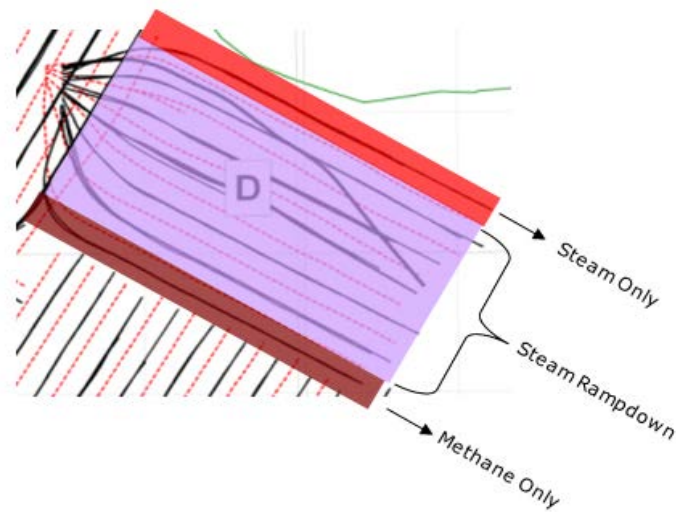
Four wells drilled using our Wedge Well™ technology operational

- DW01 (offline)
- DW06 (offline)

Pad D– injection summary

Injector	Methane injection start date	Cum gas injected to February 28, 2015 (Se ³ m ³)
DI17	May 2012	268
DI19	August 2010	3,482
DI20	August 2010	3,491
DI21	August 2010	267
DI22	August 2010	2,551
DI34	April 2012	13,425
Total		23,485

Cum gas since Aug 2010.

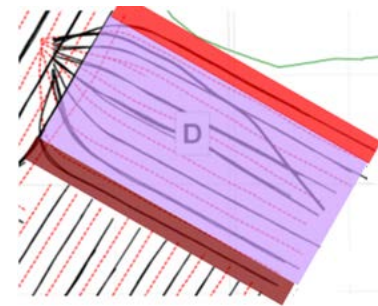
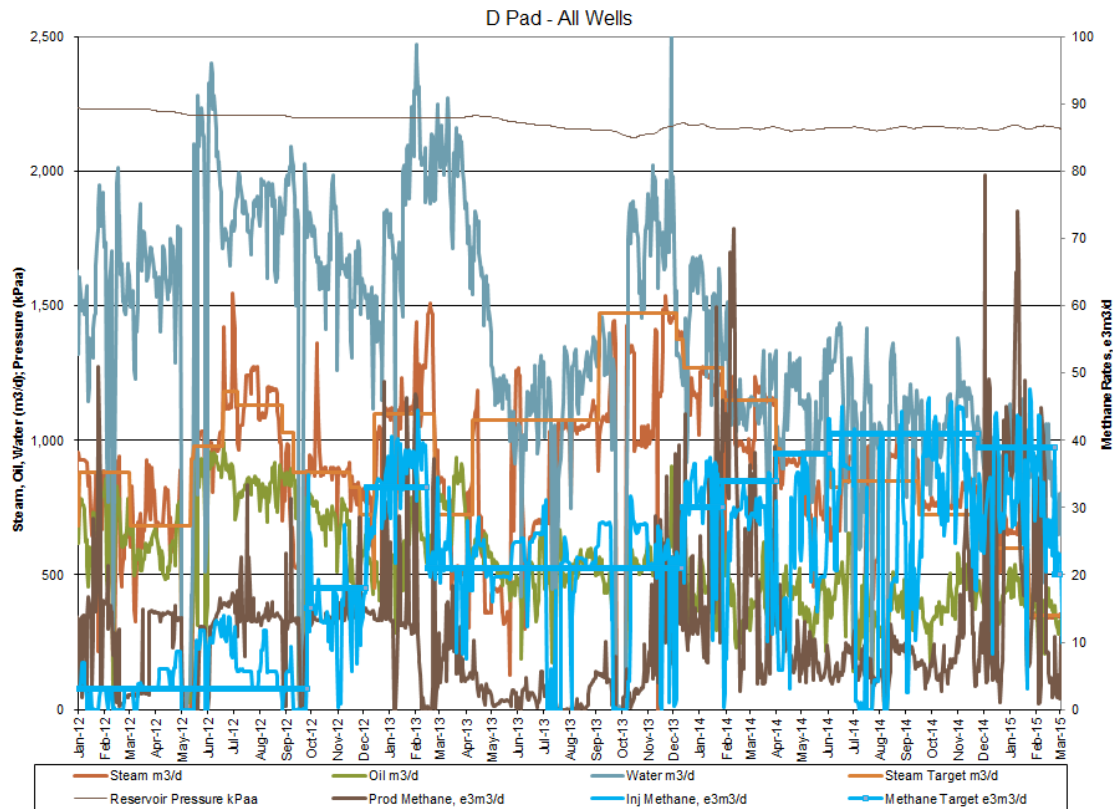


Well pairs

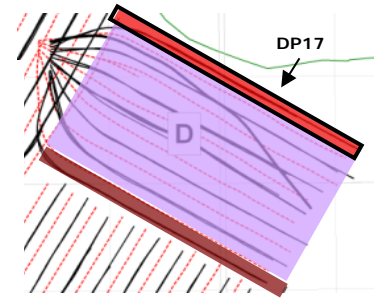
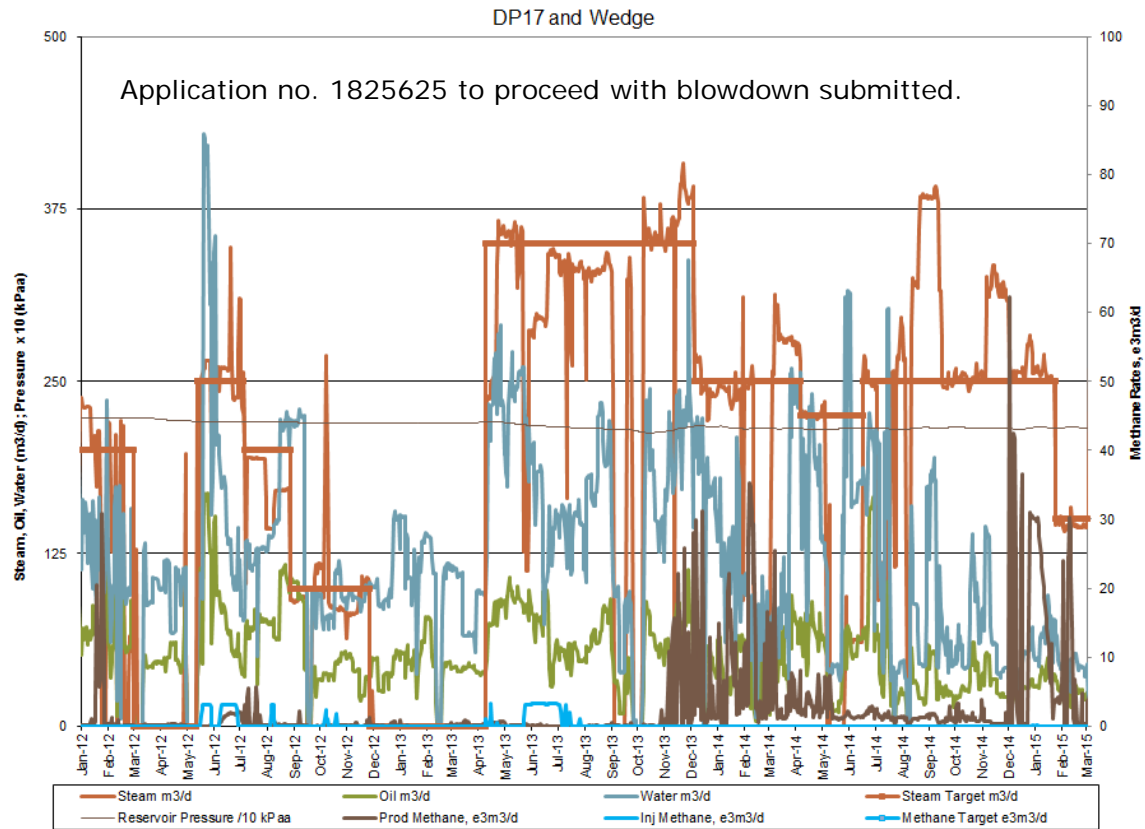
Wells utilizing Wedge Well™ technology



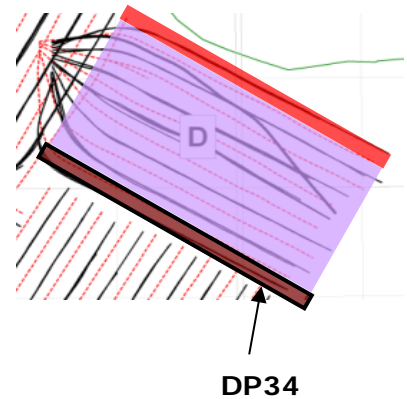
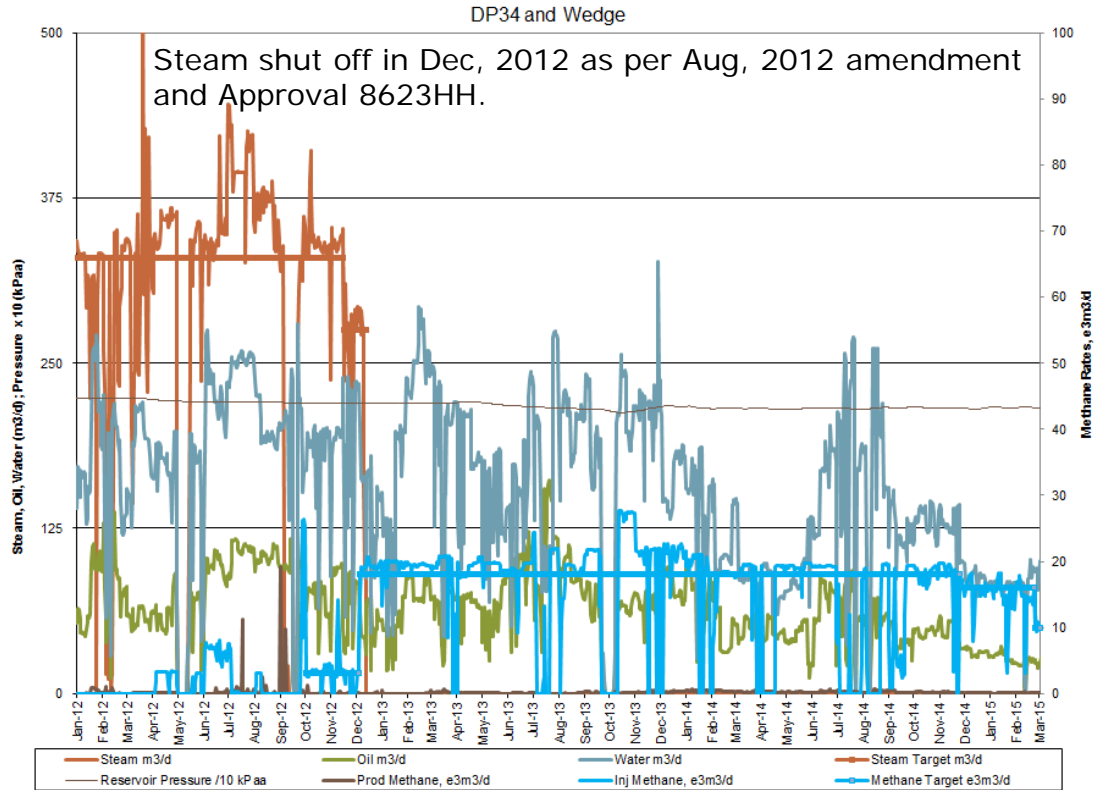
Pad D— all wells production and injection



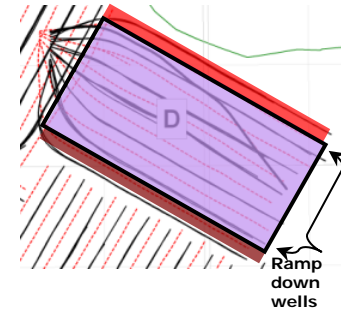
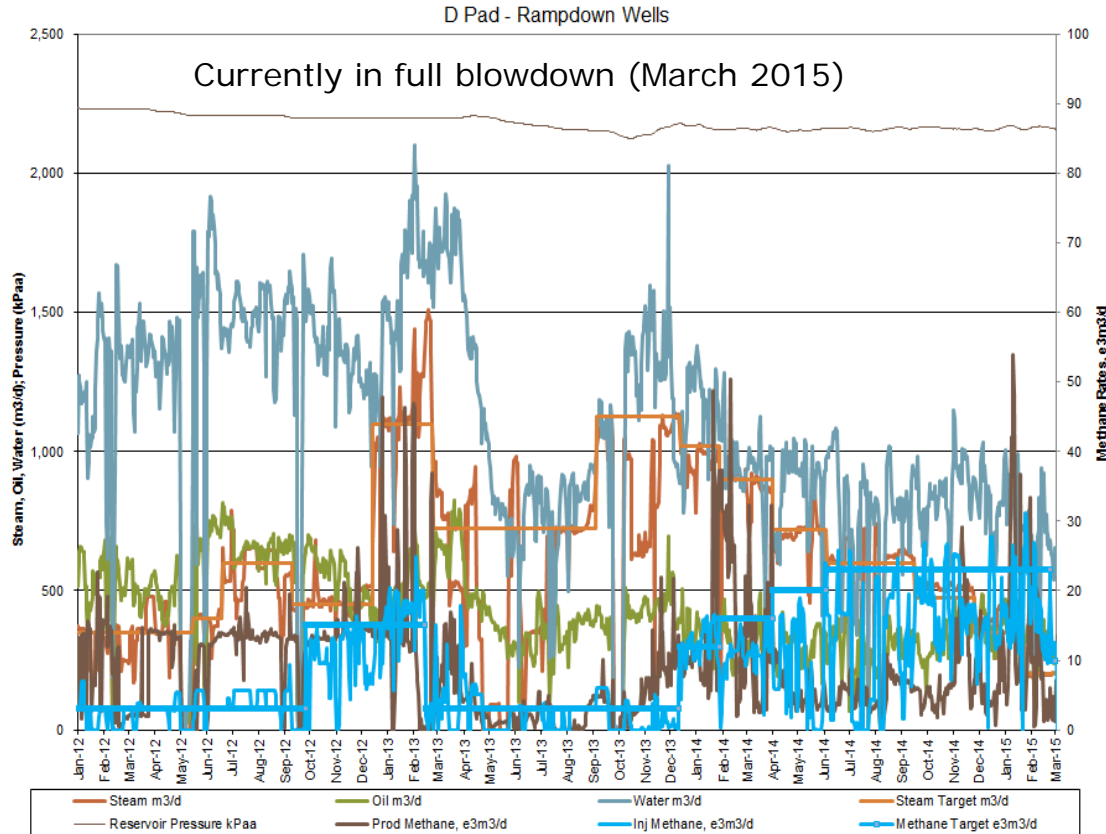
DP17 – production and injection



DP34 – production and injection



Pad D rampdown wells – production and injection



Pad D – oil voidage

- Percentage gas injected volume per oil produced

Gas - Chamber Conditions

23,494 Se3m3, Methane Injected (Std Conditions)

6,583 Se3m3, Methane Produced, excluding solution gas (Std Conditions)

16,911 Se3m3, Net Methane Injected (Std Conditions)

8.648 kg/m3, Density of Methane in Chamber

1,290,653 m3, Net Methane Injected at Reservoir Conditions

% Gas Volume Injected vs Oil Voidage

Since Start of D Pad Production, 2001

1,290,653 m3 of net methane injected (reservoir conditions)

4,406,706 m3 of oil produced (as of Feb 28, 2015)

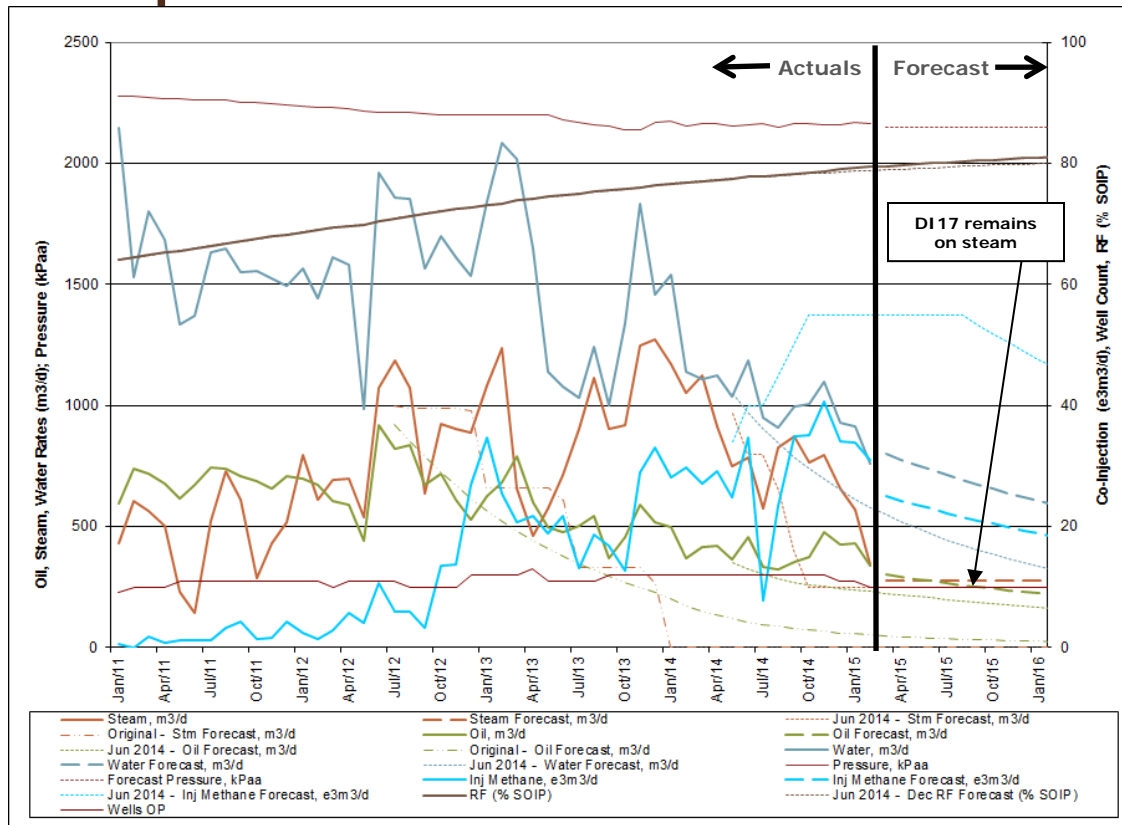
29.3% oil voidage displaced by injected methane

Pad D – current injection strategy

Phase 5: March 2015 onwards

- Full blowdown on pad (excluding D17)
- Application to proceed to blowdown on D17
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads
- Currently injecting methane on DI19 and DI34

Pad D – predictive forecast



Temperature logs & fluid saturation

Clause (23) sub clause (2) of scheme approval 8623

Temperature measurement must be conducted a minimum of twice each calendar year at the designated observation wells listed below. A suitable baseline temperature measurement must be available or obtained at each designated observation well listed below prior to commencement of steam ramp down at each pad.

00/13-14-070-04W4/0 (C13-14)

00/02-22-070-04W4/0 (D2-22)

02/16-15-070-04W4/0 (D16-15)

02/04-23-070-04W4/0 (B4-23)

03/16-15-070-04W4/0 (C16-15)

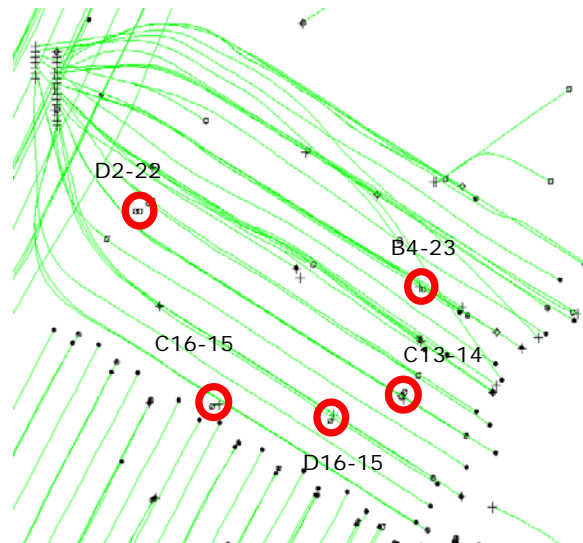
Clause (23) sub clause (3) of scheme approval 8623

Fluid saturation measurements must be conducted a minimum of once every calendar year using well logging at a minimum of one observation well at each well pad. A suitable baseline fluid saturation measurement must be available or obtained at a minimum of one observation well at each well pad prior to the commencement of steam ramp down at each well pad.

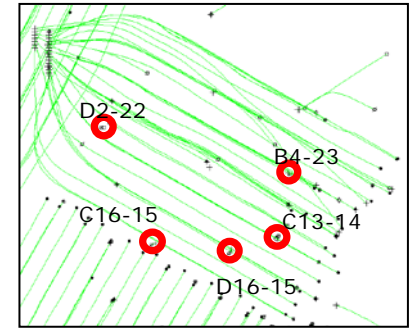
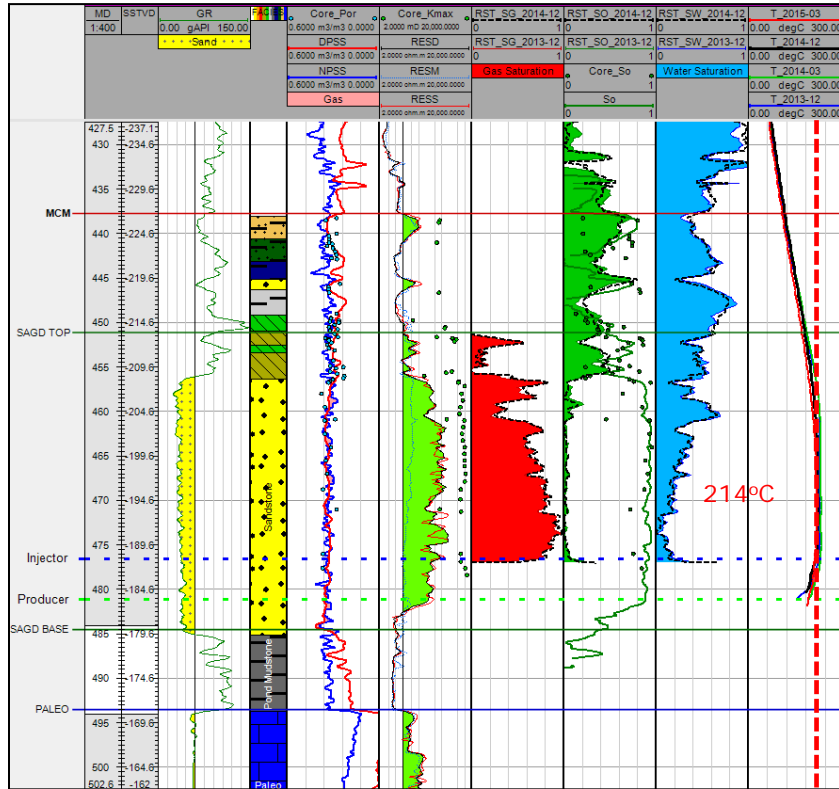
Pad D: temperature & fluid monitoring

- Pad D logging history

Target Steam (Percent)	Temperature Log	RST Log
100	December 2011	December 2011
100	March 2012	
100	December 2012	December 2012
100	March 2013	
90	December 2013	December 2013
80	March 2014	March 2014
30	December 2014	December 2014
0	March 2015	

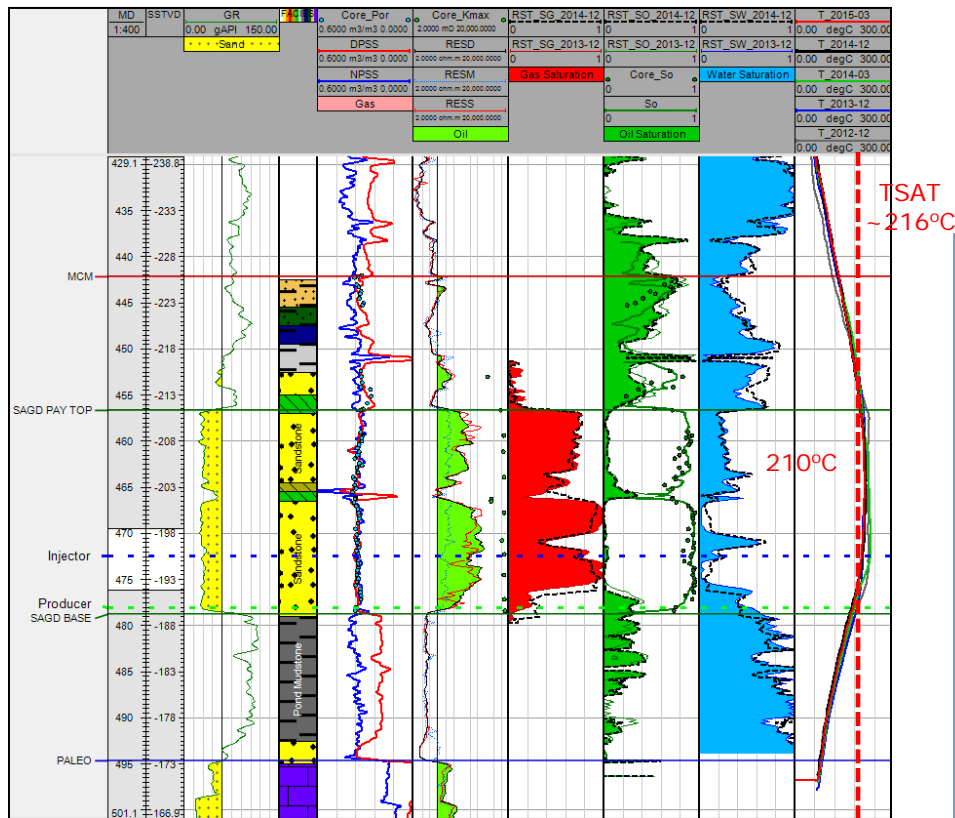
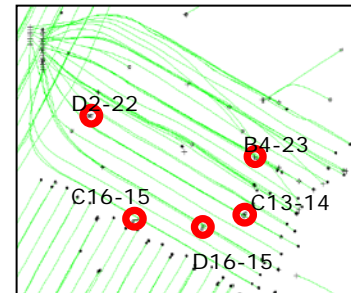


D Pad – D2-22 updated (100022207004W400)



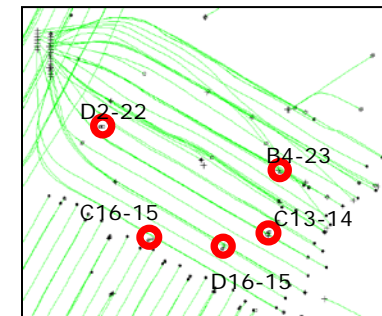
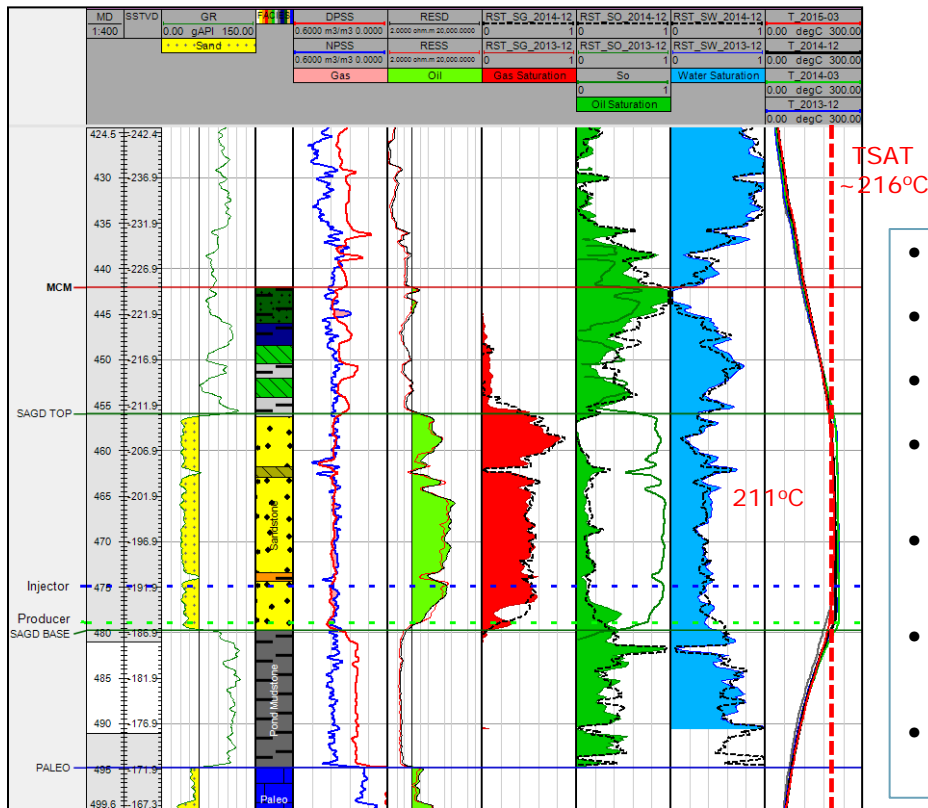
- 20m offset D21 well pair
- March 2014 225 °C
- Current logged temperature 214 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 95 percent steam (100 percent last year)
- No appreciable changes in saturations

Pad D - D16-15 updated 102161507004W400



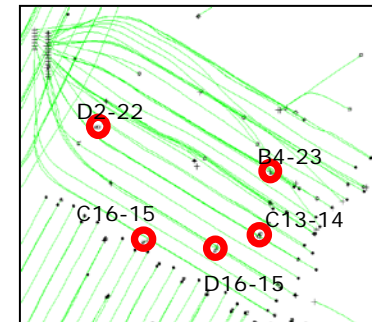
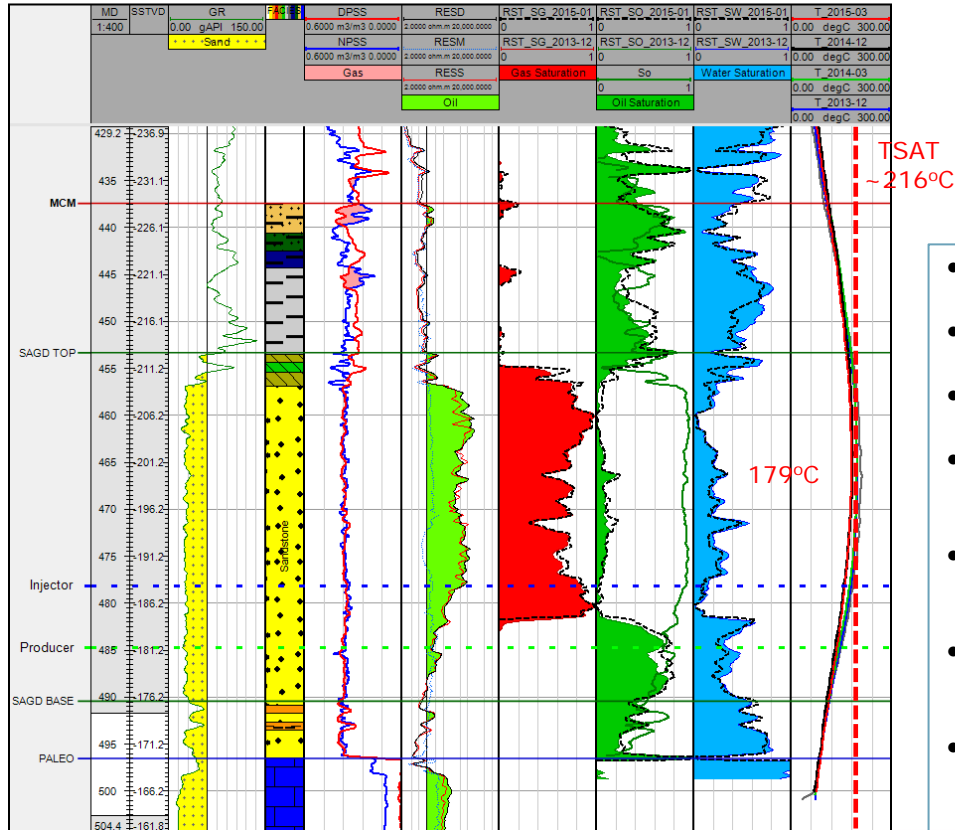
- 10m offset D22 well pair
- March 2014 220 °C
- Current logged temperature 210 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 90 percent steam (100 percent last year)
- No appreciable change in oil saturation in main chamber
- Slight decrease in gas saturation

Pad D– C13-14 updated (100131407004W400)



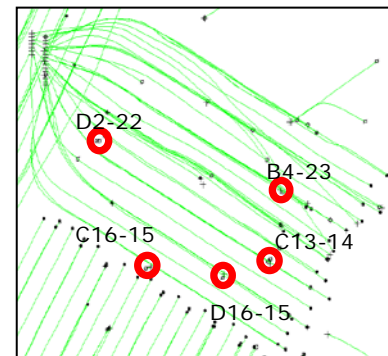
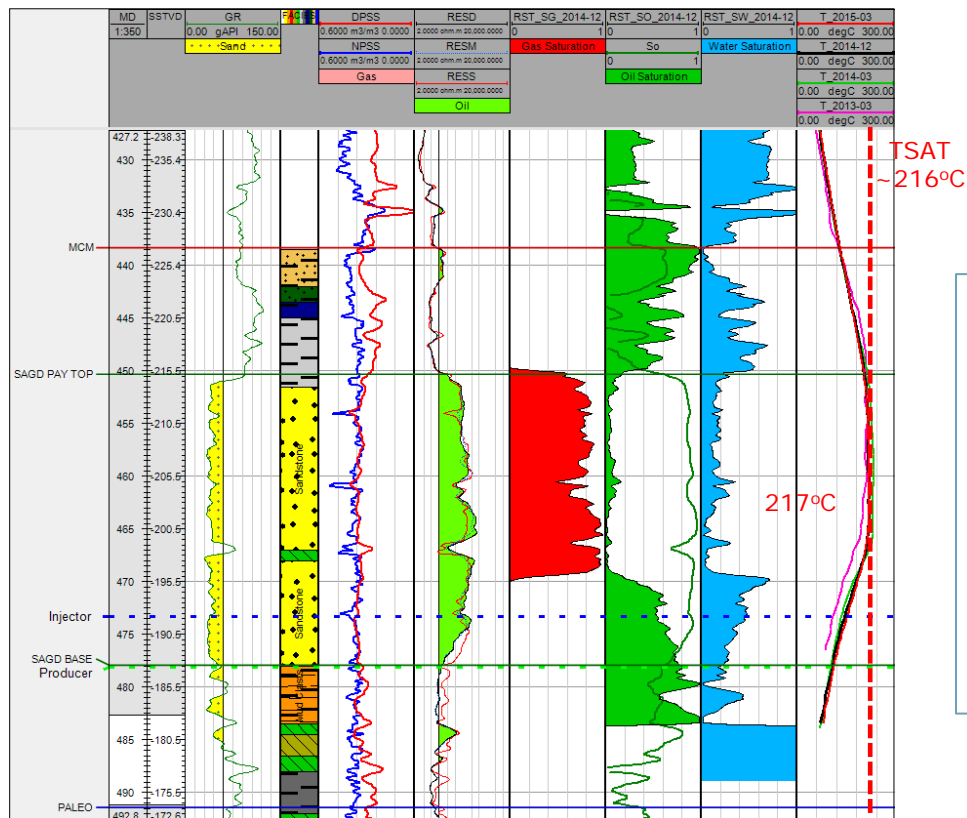
- 9m offset D21 well pair
- March 2014 223 °C
- Current logged temperature 211 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 90 percent steam (100 percent last year)
- No appreciable change in oil saturation in main chamber
- Slight increase in gas saturation; decrease in oil saturation above producer

Pad D – B4-23 updated (102042307004W400)



- 4m offset D19 well pair
- March 2014 193 °C
- Current logged temperature 179 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 45 percent steam (60 percent last year)
- No appreciable change in oil saturation in main chamber
- Slight increase in oil saturation at producer

Pad D – C16-15 updated (103161507004W400)



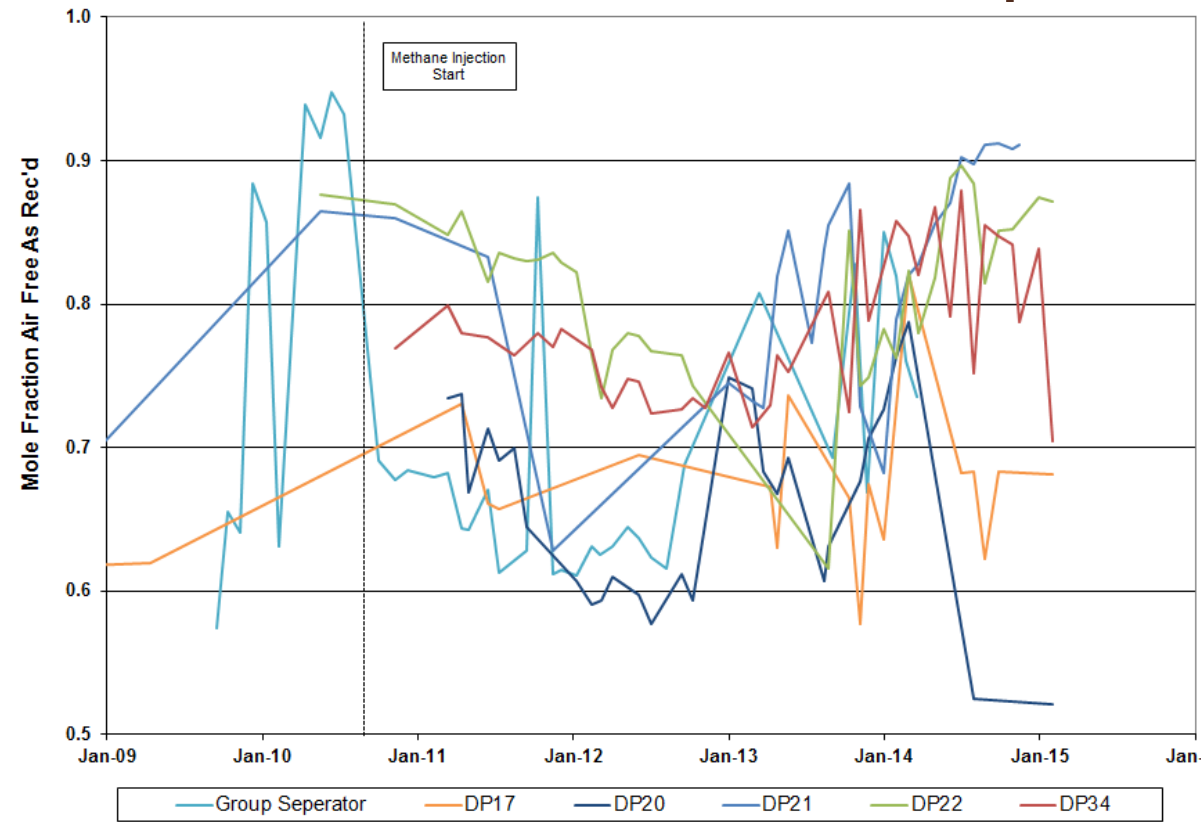
- Baseline
- 19m offset D34 well pair
- March 2014 227 °C
- Current logged temperature 217 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 100 percent steam (100 percent last year)

Compositional analysis

Clause (23) sub clause (4) of scheme approval No. 8623

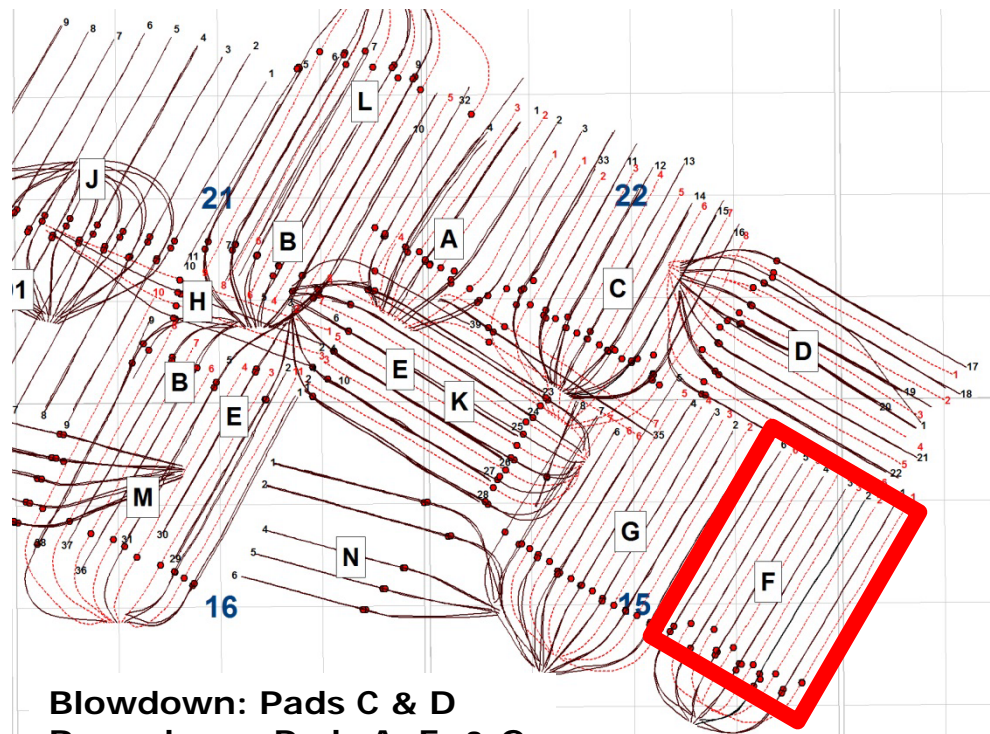
Compositional analyses of the casing gas at the 08/12-22-070-04W4/2 (AP4), 11/07-22-070-04W4/0 (CP16), and 24/13-14-070-04W4/2 (DP20) wells and compositional analyses of the produced gas on a group basis for each well pad must be obtained monthly, commencing prior to the start of steam ramp down at each well pad.

Pad D – methane C1 mole composition



Pad F – update

- Operation review
- Temperature monitoring
- Fluid saturation updates
- Compositional analysis



Blowdown: Pads C & D
Rampdown: Pads A, F, & G

Methane injection

Clause (24) sub clause (1) of scheme approval 8623

The operator shall conduct the ramping down and ceasing of steam injection, and injecting of non-condensable gas, at Well Pads F and G, subject to the following conditions:

- (1) The non-condensable gas injected will only be methane (fuel gas)

Pad F – operational overview

Injectors:

- FI01, FI02, FI03, FI04, FI05, and FI06 equipped for methane injection
 - Injecting methane in FI03, FI04, and FI06
 - Steaming FI01-FI06
- Methane injection started in May 2014
 - Pad cum injection of 3,554 Se³m³ of methane to Feb 28, 2015

Producers:

- FP01, FP02, FP03, FP04, and FP06 are operational
 - FP05 (offline)

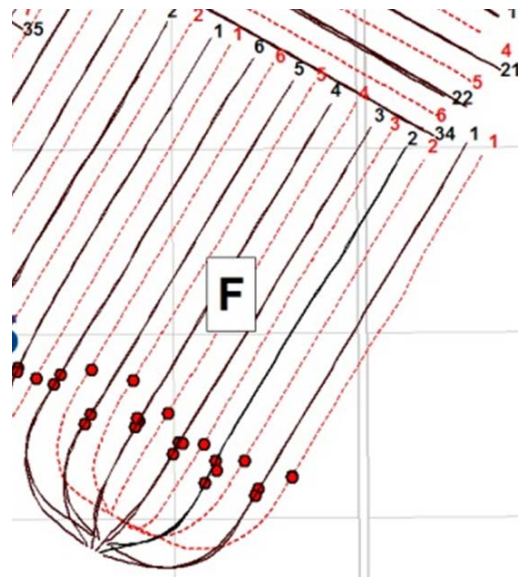
Five wells utilizing Wedge Well™ technology are in operation

- FW06 (offline)

Pad F – injection summary

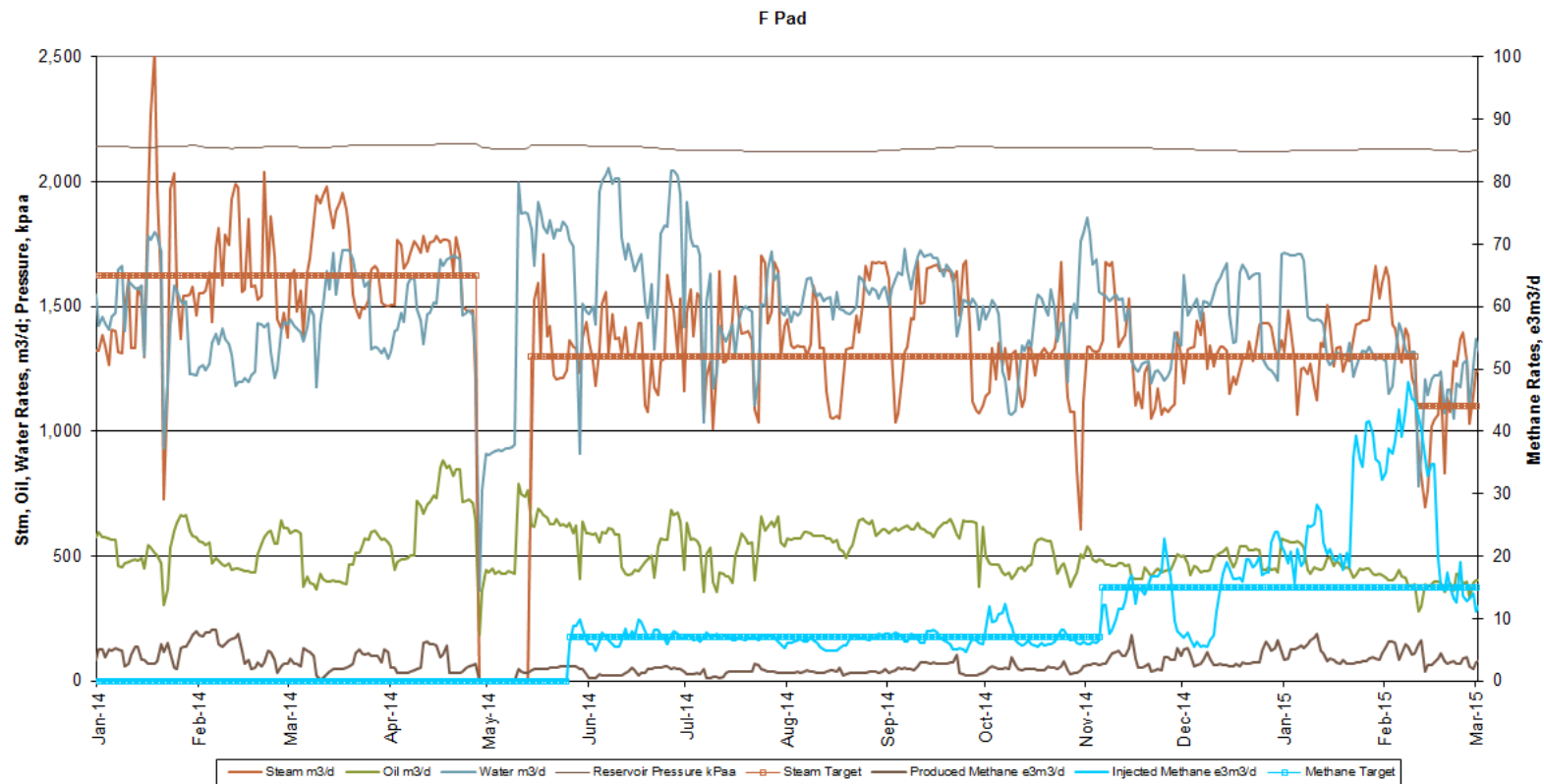
Injector	Methane injection start date	Cum gas injected to February 28, 2015 (Se ³ m ³)
FI01	November 2014	435
FI02	November 2014	190
FI03	May 2014	754
FI04	May 2014	859
FI05	May 2014	664
FI06	May 2014	652
Total		3,554

Cum gas since May 2014.



Well pairs —————
 Wells utilizing Wedge Well™ technology - - - - -

Pad F – production & injection



Pad F– Oil Voidage

- Percentage gas injected volume per oil produced

Gas - Chamber Conditions

3,554 Se3m3, Methane Injected (Std Conditions)

0 Se3m3, Methane Produced, excluding solution gas (Std Conditions)

3,554 Se3m3, Net Methane Injected (Std Conditions)

8.648 kg/m3, Density of Methane in Chamber

271,237 m3, Net Methane Injected at Reservoir Conditions

% Gas Volume Injected vs Oil Voidage

Since Start of F Pad Production, 2005

271,237 m3 of net methane injected (reservoir conditions)

3,091,348 m3 of oil produced (as of Feb 28, 2015)

8.77% oil voidage displaced by injected methane

Pad F – injection strategy

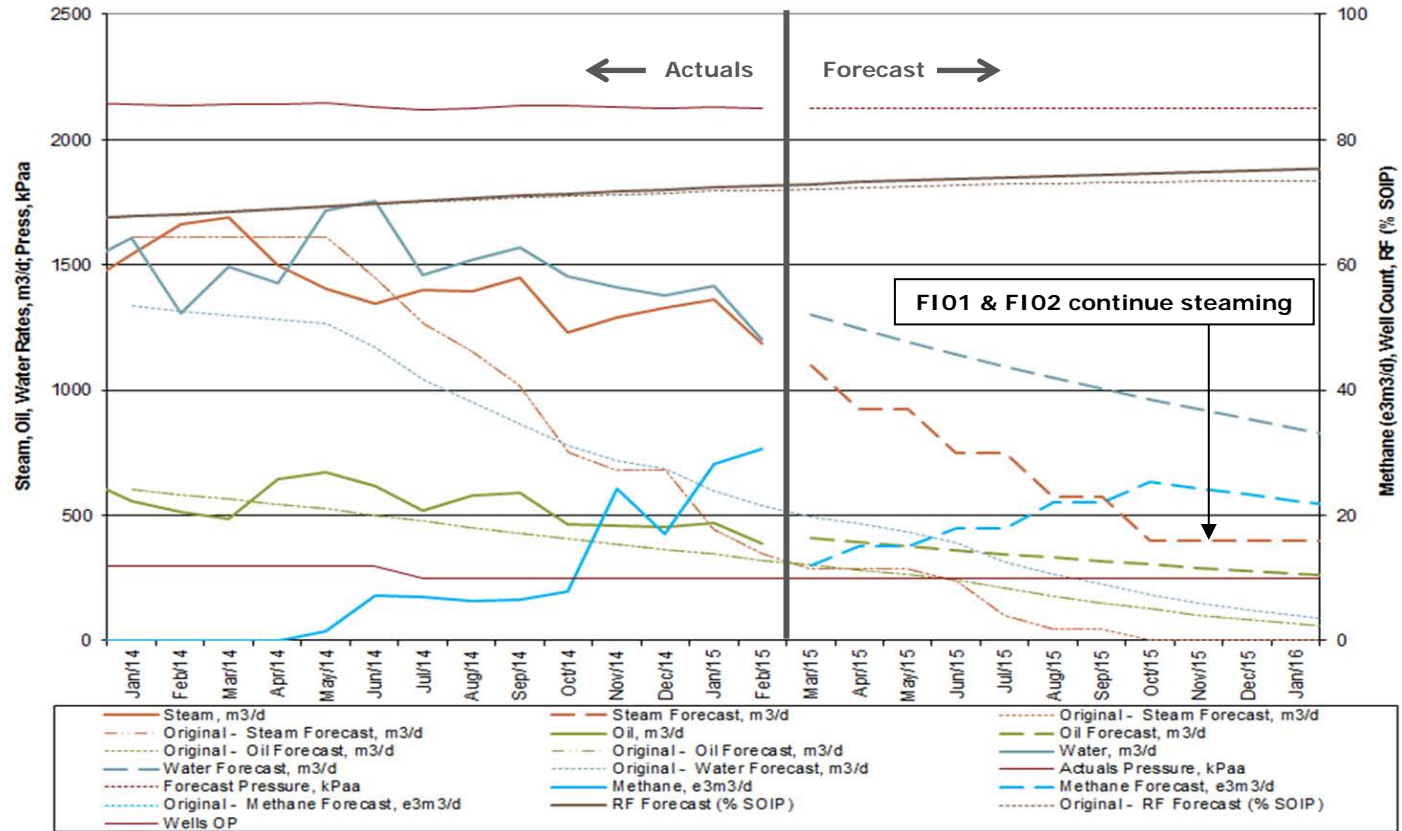
May 2015 to October 2015

- Rampdown wells F3-F6 with 10 to 15 percent steam cuts
- Continue steaming F1-F2
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads

October 2015 onwards

- Steam injection stopped on F3-F6, blowdown
- Continue steaming F1-F2
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads

Pad F – predictive forecast



Temperature logs & fluid saturation

Clause (24) sub clause (2) of scheme approval 8623

Temperature measurement must be conducted a minimum of twice each calendar year at the designated observation wells listed below. A suitable baseline temperature measurement must be available or obtained at each designated observation well listed below prior to commencement of steam ramp down at each well pad.

02/09-15-070-04W4/0 (B9-15)

03/08-15-070-04W4/0 (A8-15)

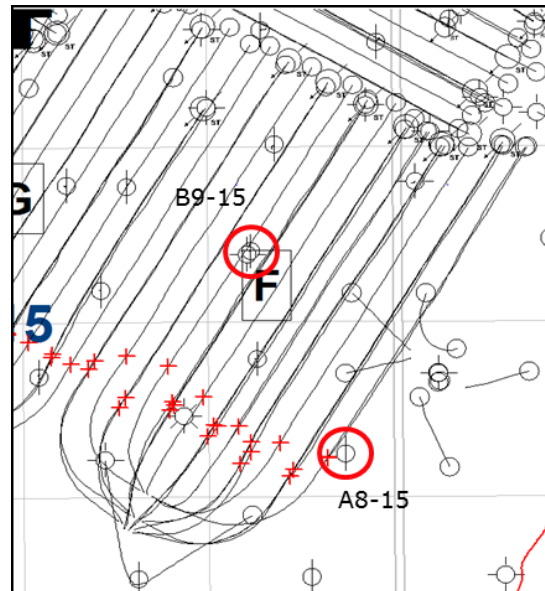
Clause (24) sub clause (3) of scheme approval 8623

Fluid saturation measurement must be conducted a minimum of once every calendar year using well logging at a minimum of one observation well at each well pad. A suitable baseline fluid saturation measurement must be available or obtained at a minimum of one observation well at each well pad prior to the commencement of steam ramp down at each well pad.

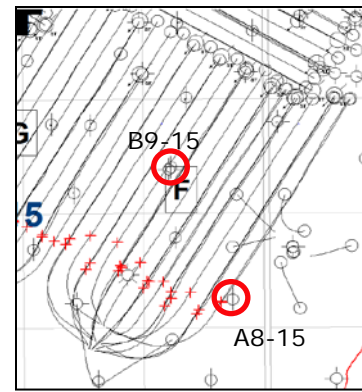
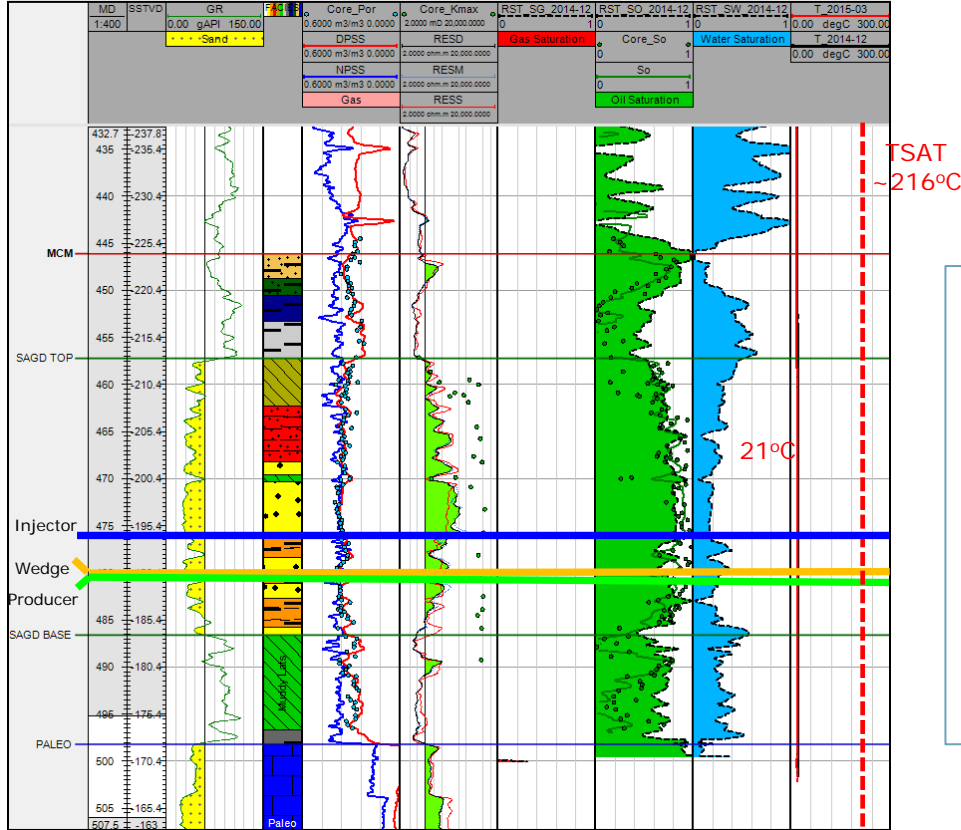
Pad F: temperature & fluid monitoring

- Pad F logging history

Target Steam (Percent)	Temperature Log	RST Log
85	December 2014	December 2014
70	March 2015	

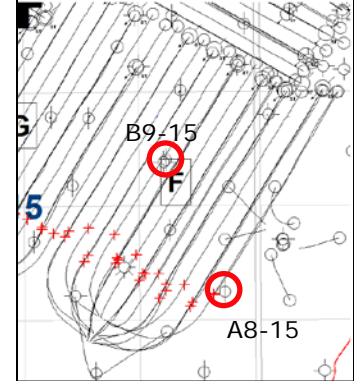
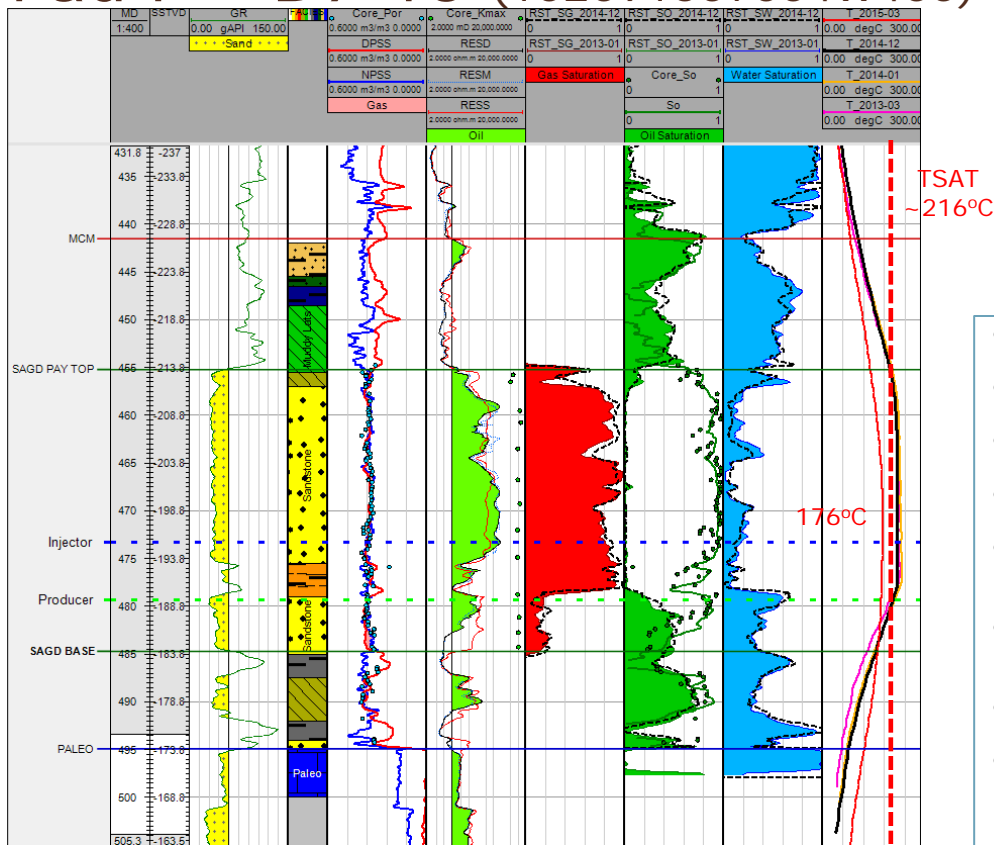


Pad F – A8-15 (103081507004W400)



- Baseline
- 70m offset to F1 Well Pair
- 27m offset to F W1 well, with ~110 °C at heel
- Observation well behavior not representative of Pad F
 - Current logged temperature 21 °C
 - Slight decrease in oil saturation

Pad F – B9-15 (102091507004W400)



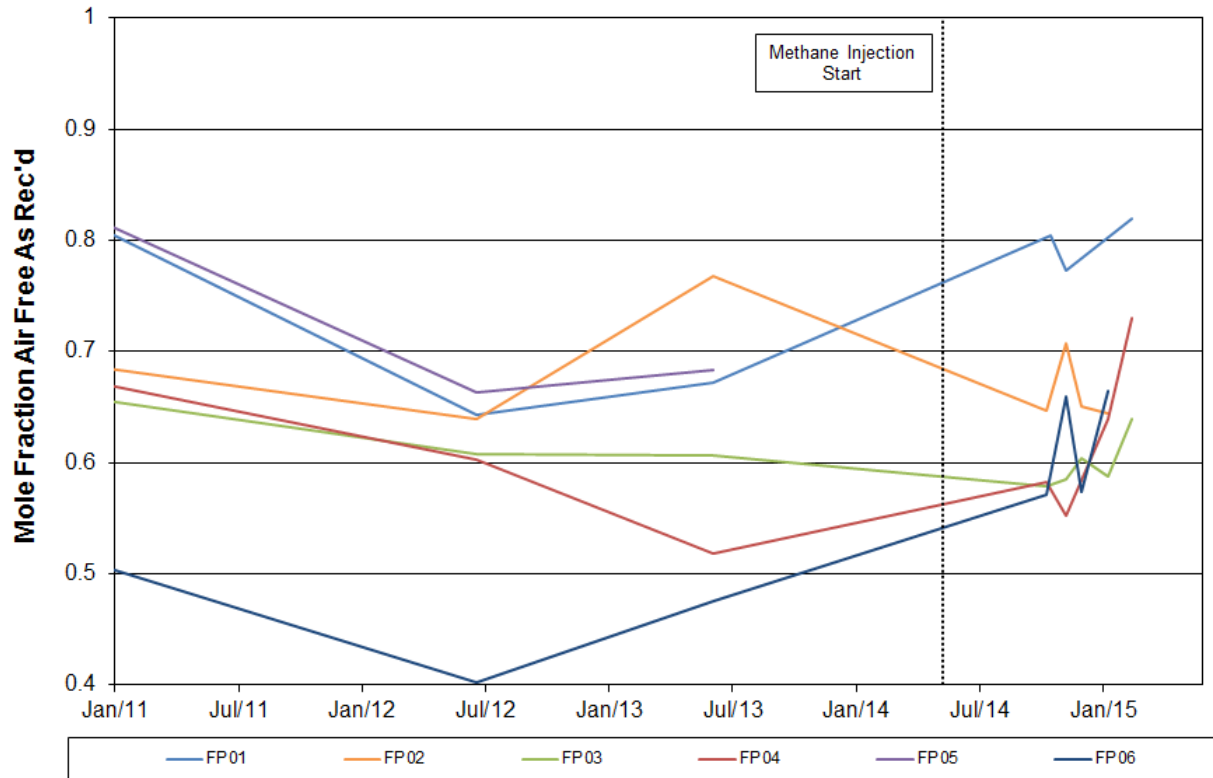
- 30m offset to F4 Well Pair
- Jan 2014 232 °C
- Current logged temperature 176 °C
- March 2015 temperature decrease
- December 2014 temperature curve comparable to previous runs
- Chamber is 40 percent steam (100 percent last year)
- No appreciable change to oil saturations
- Slight increase to gas saturation

Compositional analysis

Clause (24) sub clause (4) of scheme approval 8623

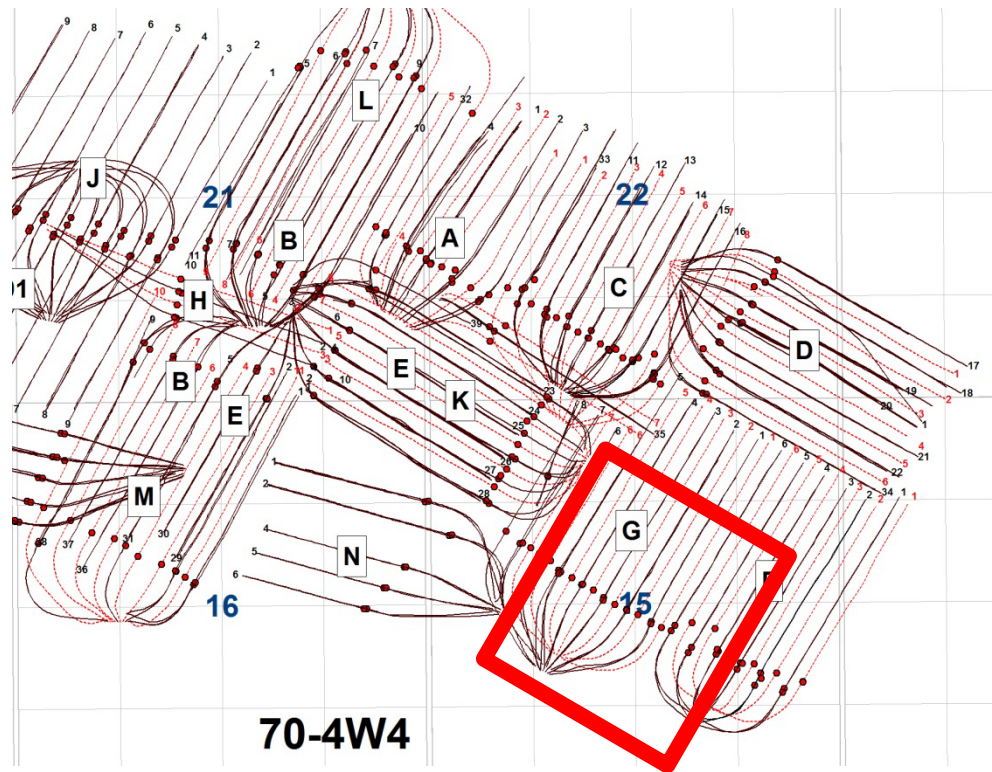
Compositional analyses of casing gas and compositional analyses of the produced gas on a group basis for each well pad must be obtained monthly, commencing prior to the start of steam ramp down at each well pad.

Pad F – methane C1 mole composition



Pad G– Update

- Operation review
- Temperature monitoring
- Fluid saturation updates
- Compositional analysis



Blowdown: Pads C & D
Rampdown: Pads A, F, & G

Methane injection

Clause (24) sub clause (1) of scheme approval 8623

The operator shall conduct the ramping down and ceasing of steam injection, and injecting of non-condensable gas, at Well Pads F and G, subject to the following conditions:

- (1) The non-condensable gas injected will only be methane (fuel gas)

Pad G – operational overview

Injectors:

- GI01, GI02, GI03, GI04, GI05, and GI06 equipped for methane injection
 - Injecting methane in GI01-GI06
 - Steaming GI01-GI07
- Methane injection started in May 2014
 - Pad cum injection of 2,306 Se³m³ of methane to February 28, 2015

Producers:

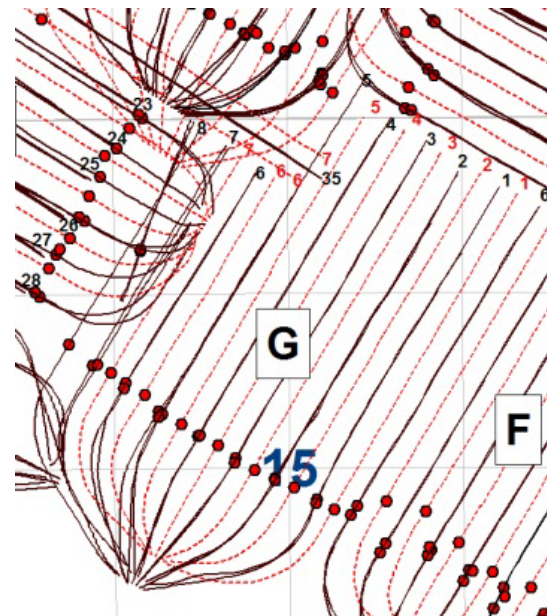
- GP01, GP03, GP05, GP06 and GP07 are operational
 - GP02 (offline)
 - GP04 (offline)
 - GP08 (offline)

Seven wells utilizing Wedge Well™ technology are in operation

Pad G – injection summary

Injector	Methane injection start date	Cum gas injected to February 28, 2015 (Se ³ m ³)
GI01	May 2014	303
GI02	May 2014	361
GI03	May 2014	395
GI04	July 2014	355
GI05	May 2014	438
GI06	May 2014	454
Total		2,306

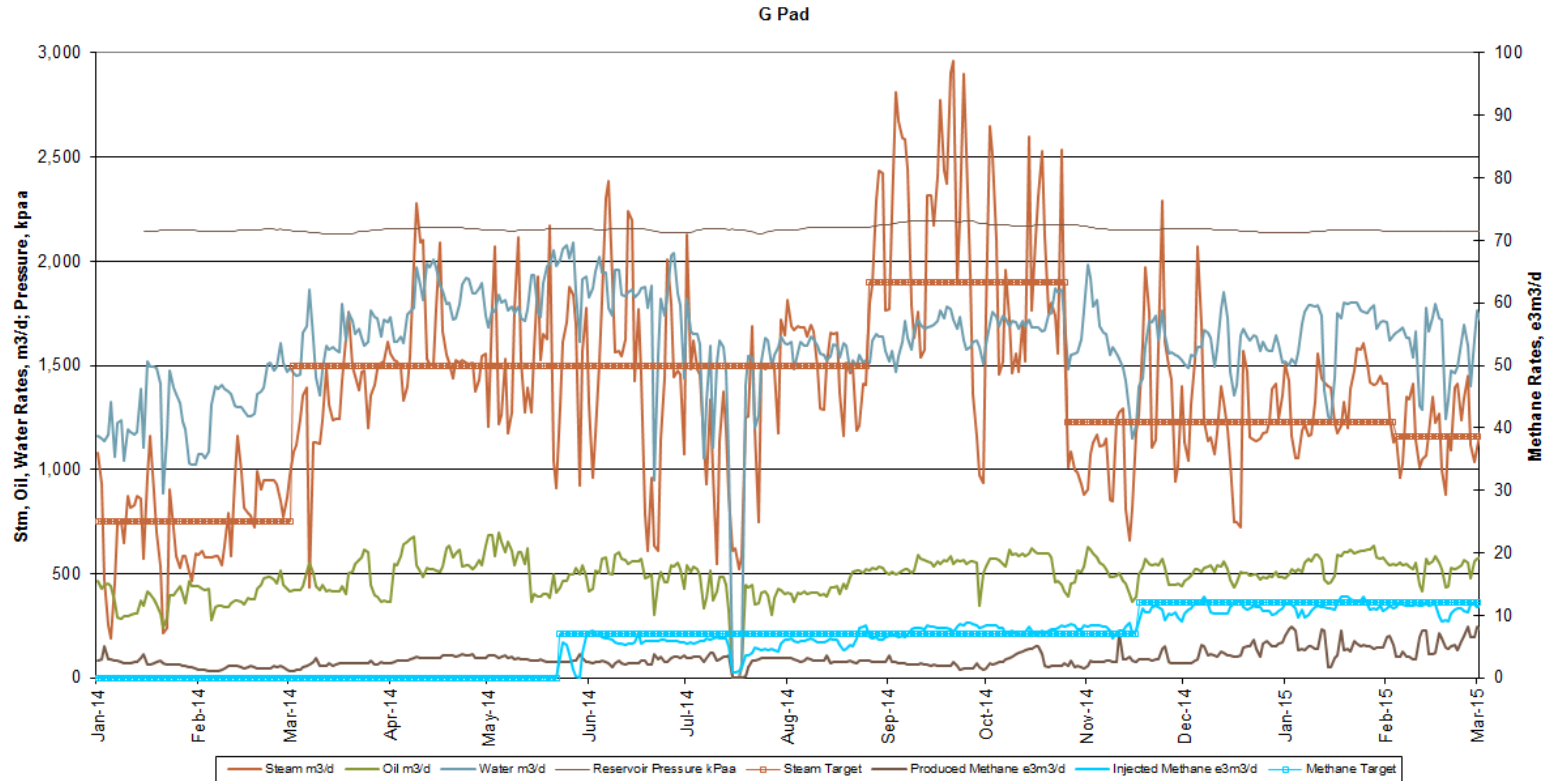
Cum gas since May 2014.



Well pairs
Wells utilizing Wedge Well™
technology



Pad G – production & injection



Pad G – oil voidage

- Percentage gas injected volume per oil produced

Gas - Chamber Conditions

2,306 Se3m3, Methane Injected (Std Conditions)

0 Se3m3, Methane Produced, excluding solution gas (Std Conditions)

2,306 Se3m3, Net Methane Injected (Std Conditions)

8.648 kg/m3, Density of Methane in Chamber

175,965 m3, Net Methane Injected at Reservoir Conditions

% Gas Volume Injected vs Oil Voidage

Since Start of G Pad Production, 2005

175,965 m3 of net methane injected (reservoir conditions)

2,592,627 m3 of oil produced (as of Feb 28, 2015)

6.79% oil voidage displaced by injected methane

Pad G – injection strategy

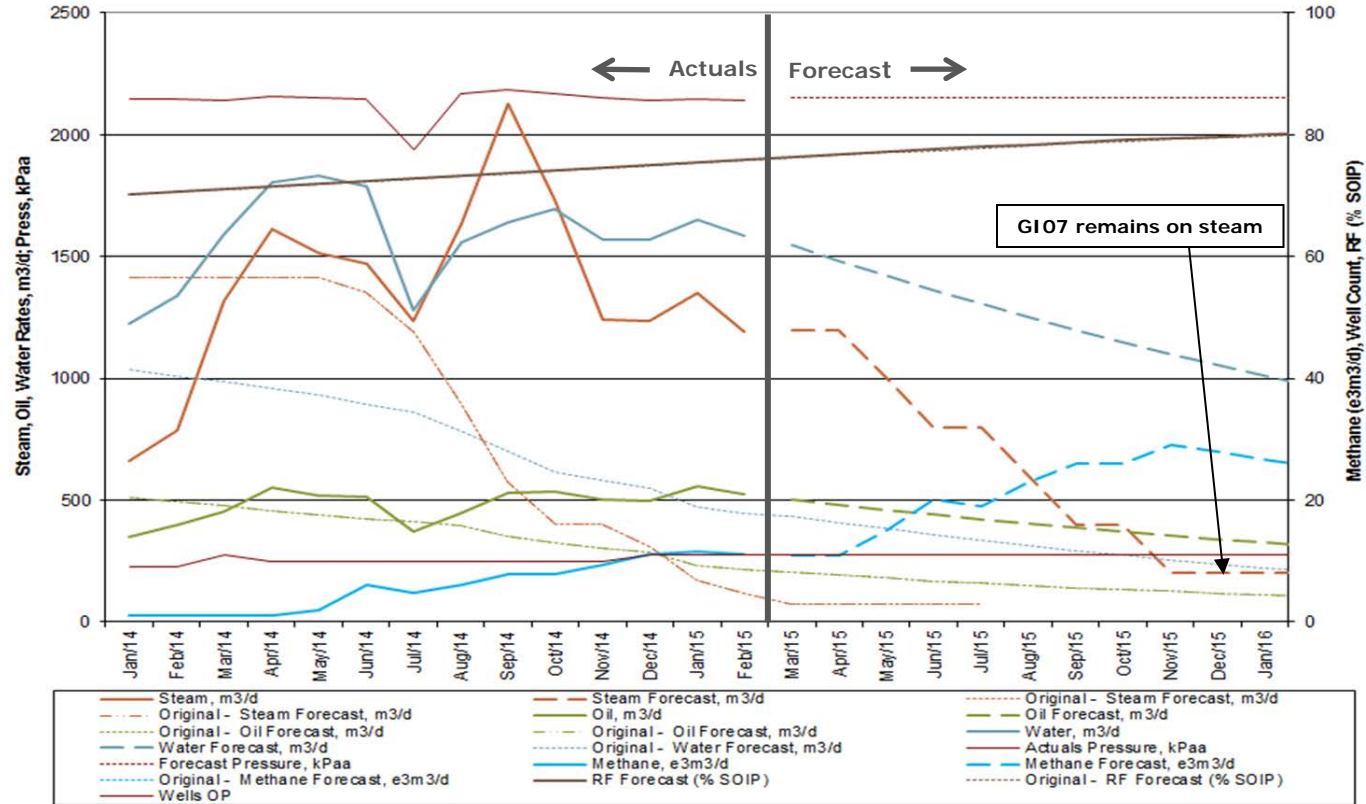
May 2015 to November 2015

- Rampdown wells G1-G6 with 10 to 15 percent steam cuts
- Continue steaming G7
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads

November 2015 onwards

- Steam injection stopped on G1-G6, blowdown
- Continue steaming G7
- Methane gas volumes adjusted to maintain reservoir pressure / balance with offset pads

Pad G – predictive forecast



Temperature logs & fluid saturation

Clause (24) sub clause (2) of scheme approval 8623

Temperature measurement must be conducted a minimum of twice each calendar year at the designated observation wells listed below. A suitable baseline temperature measurement must be available or obtained at each designated observation well listed below prior to commencement of steam ramp down at each well pad.

00/10-15-070-04W4/0 (C10-15)

03-10-15-070-04W4/0 (D10-15)

04-10-15-070-04W4/0 (B10-15)

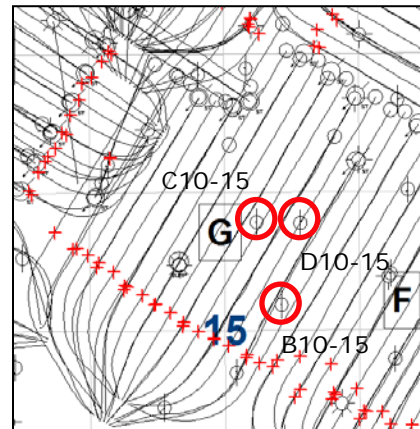
Clause (24) sub clause (3) of scheme approval 8623

Fluid saturation measurement must be conducted a minimum of once every calendar year using well logging at a minimum of one observation well at each well pad. A suitable baseline fluid saturation measurement must be available or obtained at a minimum of one observation well at each well pad prior to the commencement of steam ramp down at each well pad.

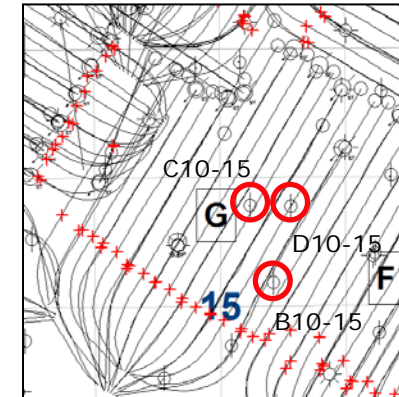
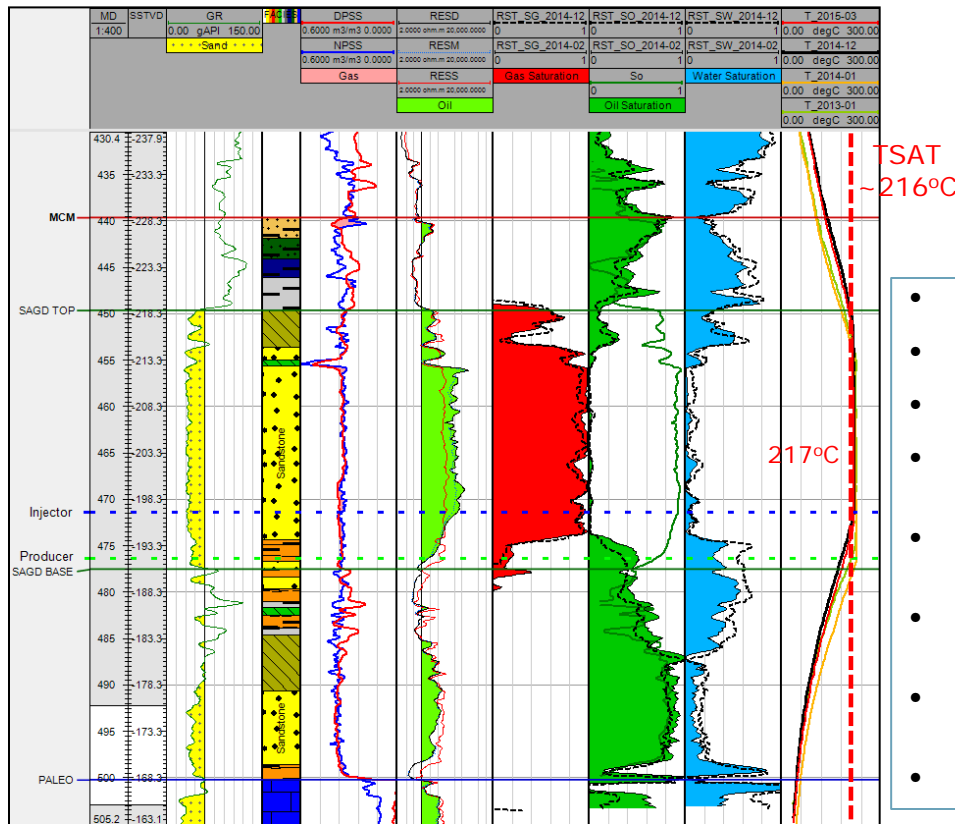
Pad G: Temperature & Fluid Monitoring

- Pad G logging history

Target Steam (Percent)	Temperature Log	RST Log
85	Dec 2014	Dec 2014
75	March 2015	

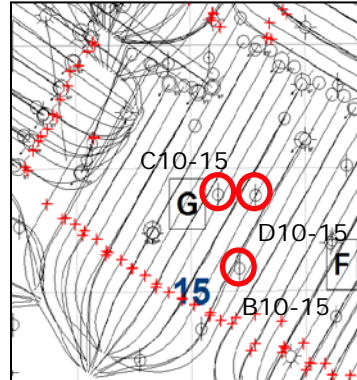
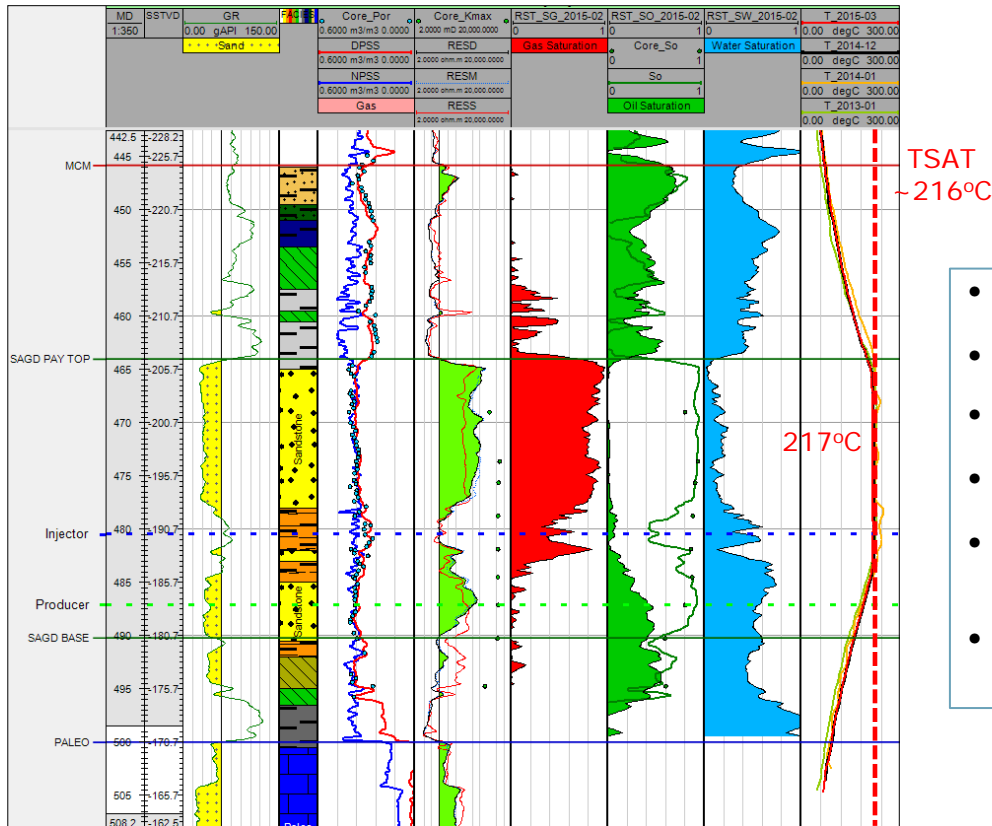


Pad G – C10-15 (100101507004W400)



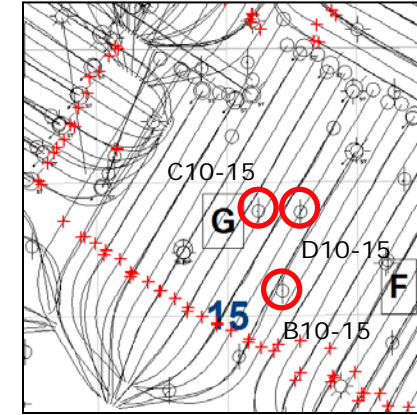
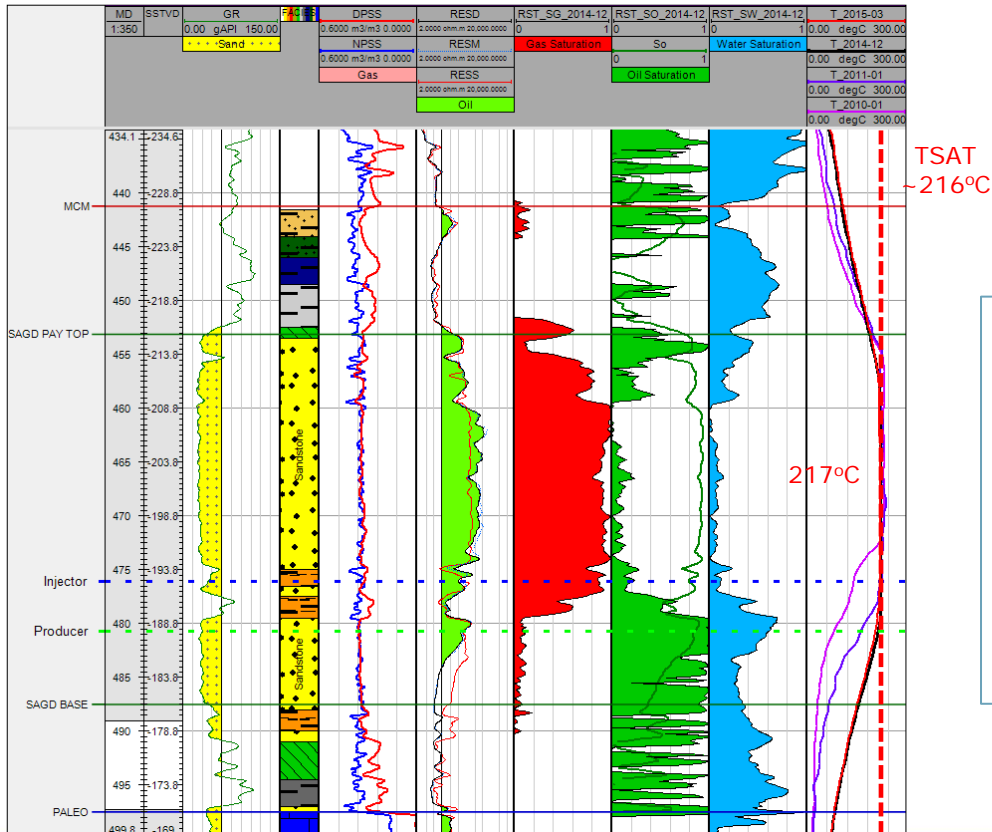
- 31m offset to G3 well pair
- January 2014 228 °C
- Current logged temperature 217 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 100 percent steam (100 percent last year)
- No appreciable change in oil saturation in main chamber
- Slight change in oil saturation in 'IHS' facies and at producer level
- Slight decrease in gas saturation

Pad G – B10-15 (104101507004W400)



- Baseline
- 17m offset to G1 well pair
- January 2014 246 °C
- Current logged temperature 217 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 100 percent steam

Pad G – D10-15 (103101507004W400)



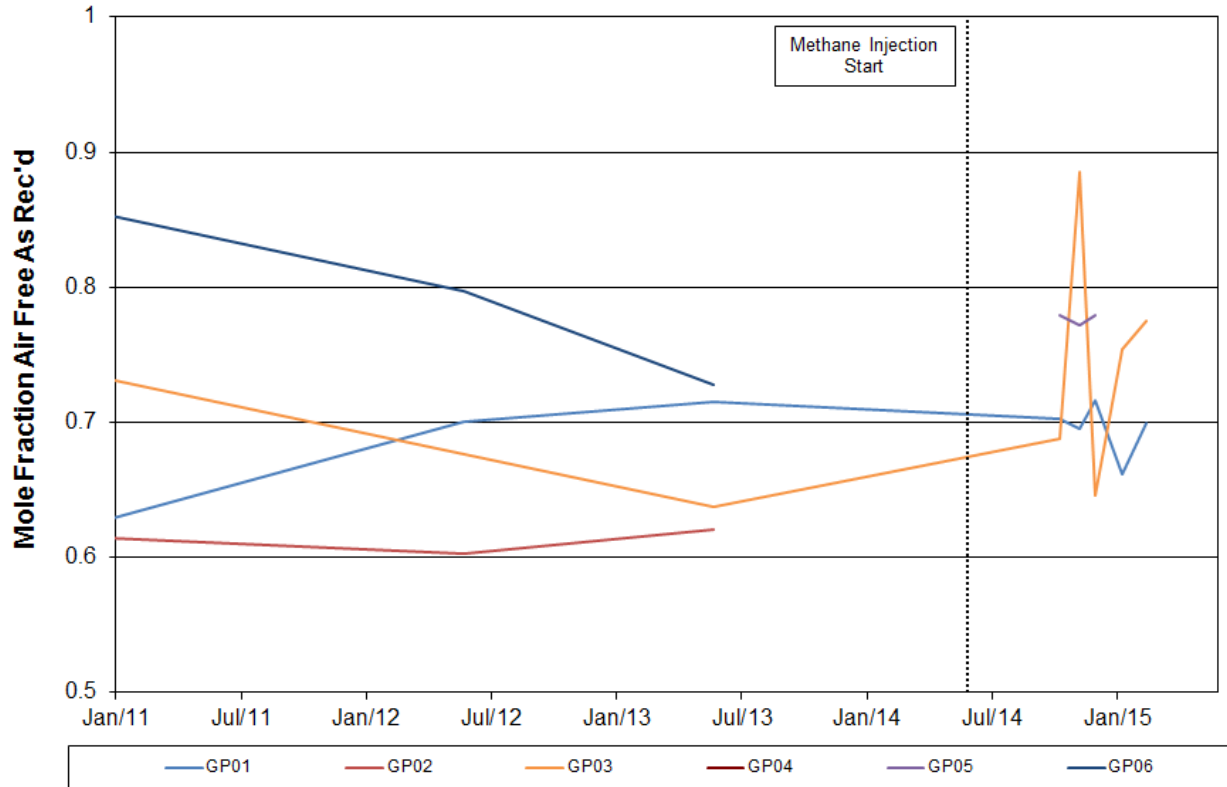
- Baseline
- 46m offset to G1 & G2 well pairs
- January 2011 234 °C
- Current logged temperature 217 °C
- December 2014 and March 2015 temperature curves are comparable
- Chamber is 100 percent steam

Compositional analysis

Clause (24) sub clause (4) of scheme approval 8623

Compositional analyses of casing gas and compositional analyses of the produced gas on a group basis for each well pad must be obtained monthly, commencing prior to the start of steam ramp down at each well pad.

Pad G – methane C1 mole composition



Next Steps

- Pads C & D* in full blowdown
 - *Application no. 1825625 to proceed to full blowdown on D17 submitted
- Pad A – working towards full blowdown in June 2015
- Pads F & G currently in rampdown
 - Targeting full blowdown in late 2015
- Continue temperature and fluid saturation measurement testing
 - Evaluating frequency of testing
- Continue gas compositional sampling on all pads
 - Evaluating frequency of testing
- Further evaluation of methane injection effects

Questions?

Cenovus Foster Creek in-situ oil sands scheme (8623) update for 2014

Appendices
Calgary | May 2015

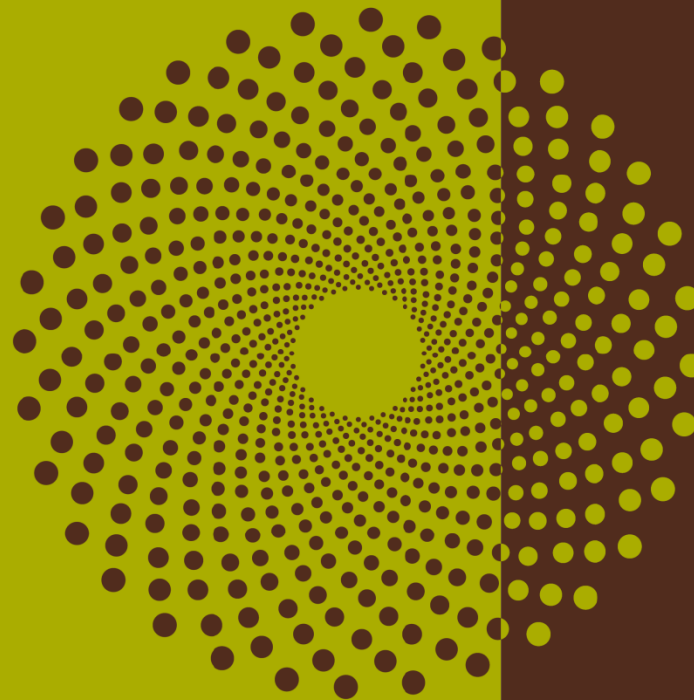


cenovus
ENERGY

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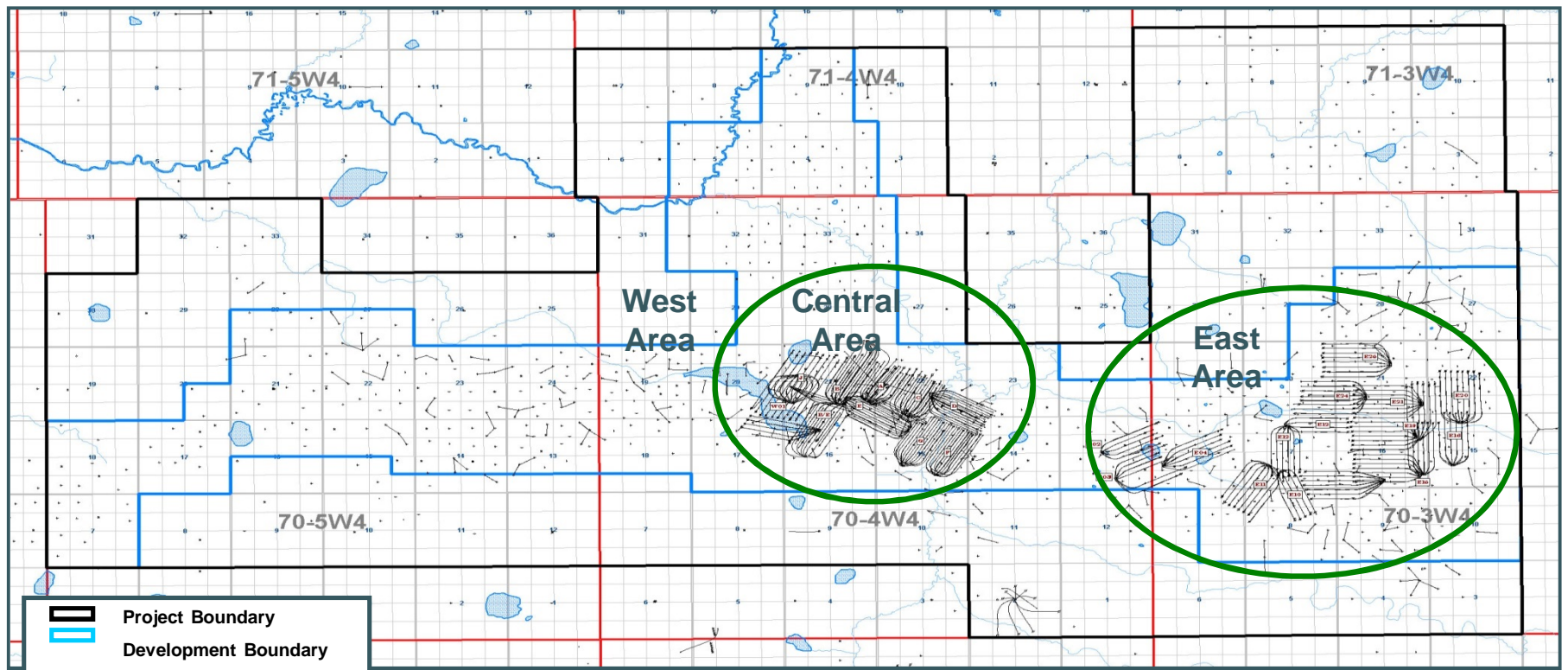
Pad plots



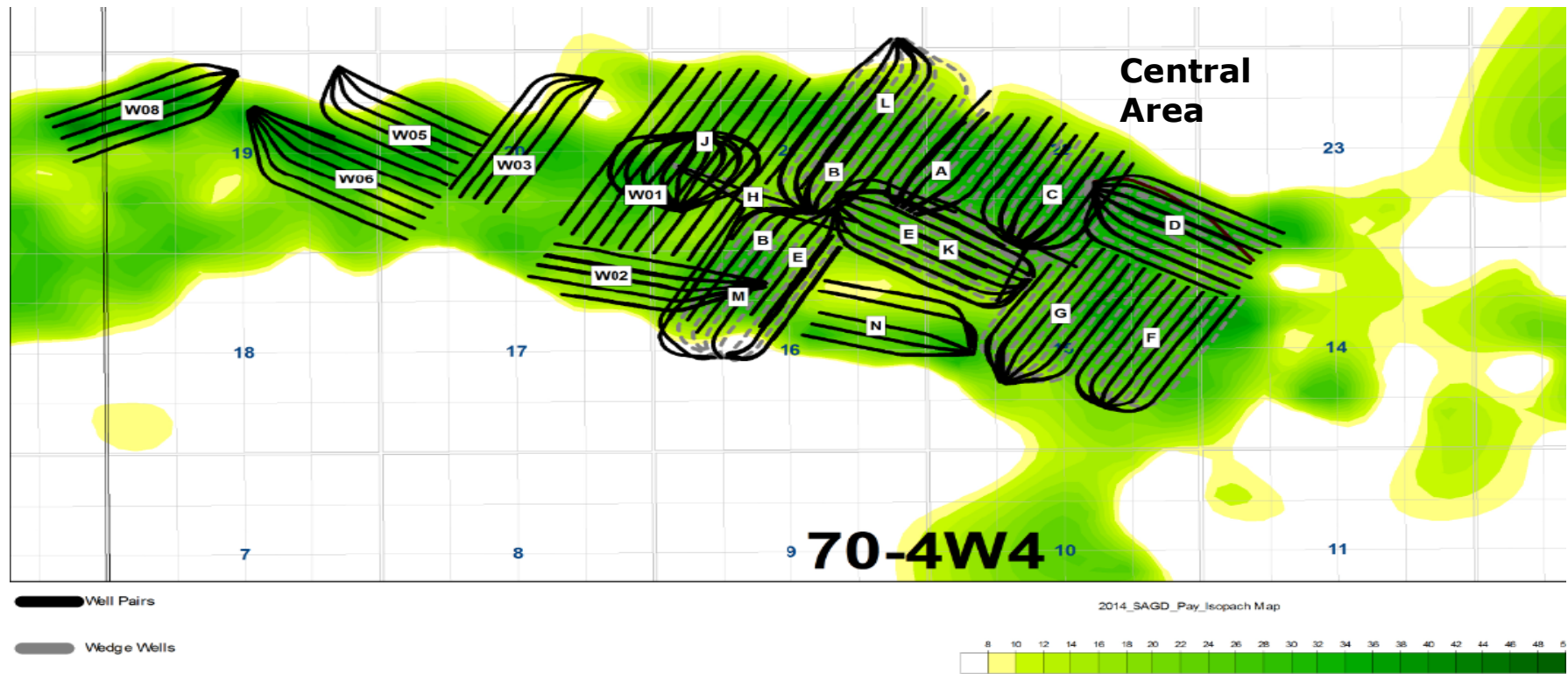
Subsection 3.1.1 – 7 h)

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ENERGY

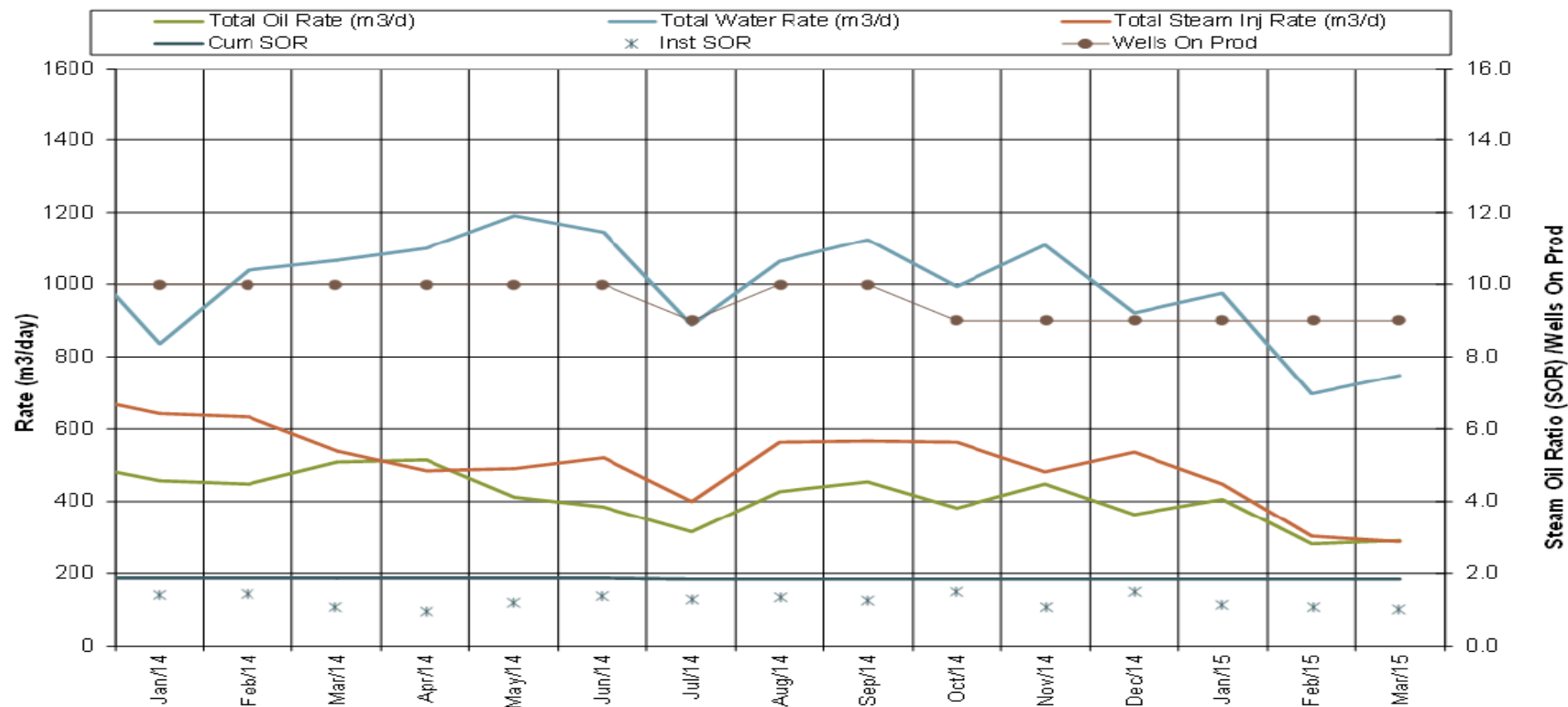
Cenovus - Foster Creek



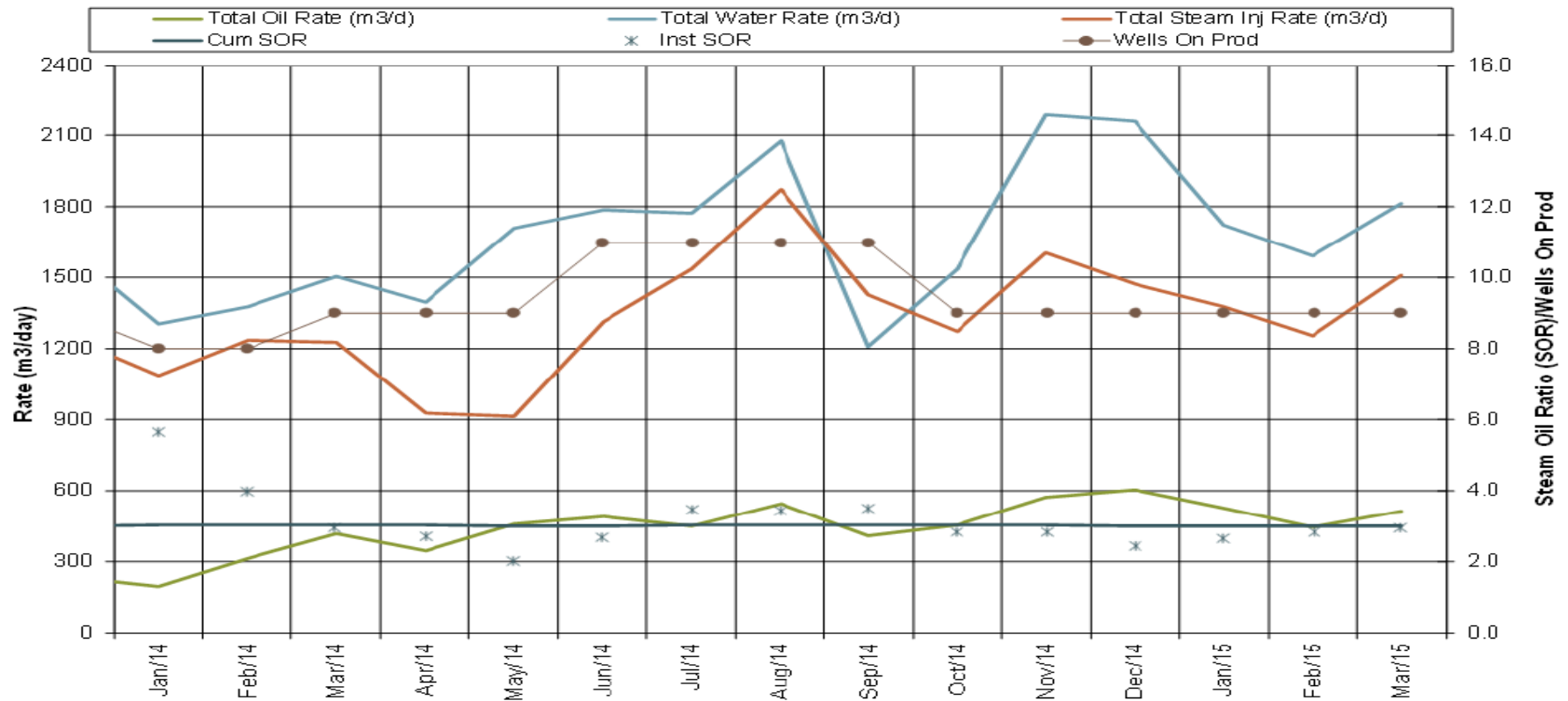
Foster Creek central



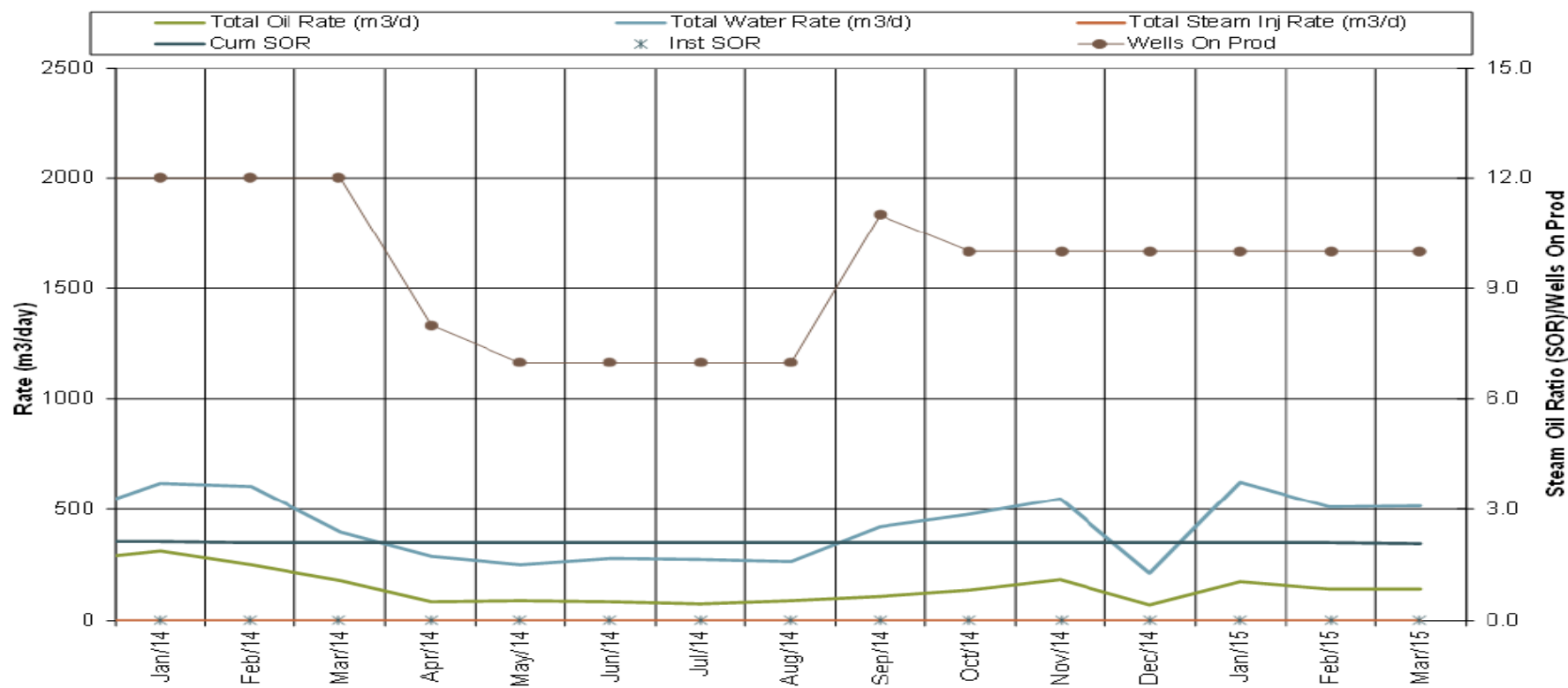
FOSTER CREEK A PAD & A Wedge Wells™ Performance



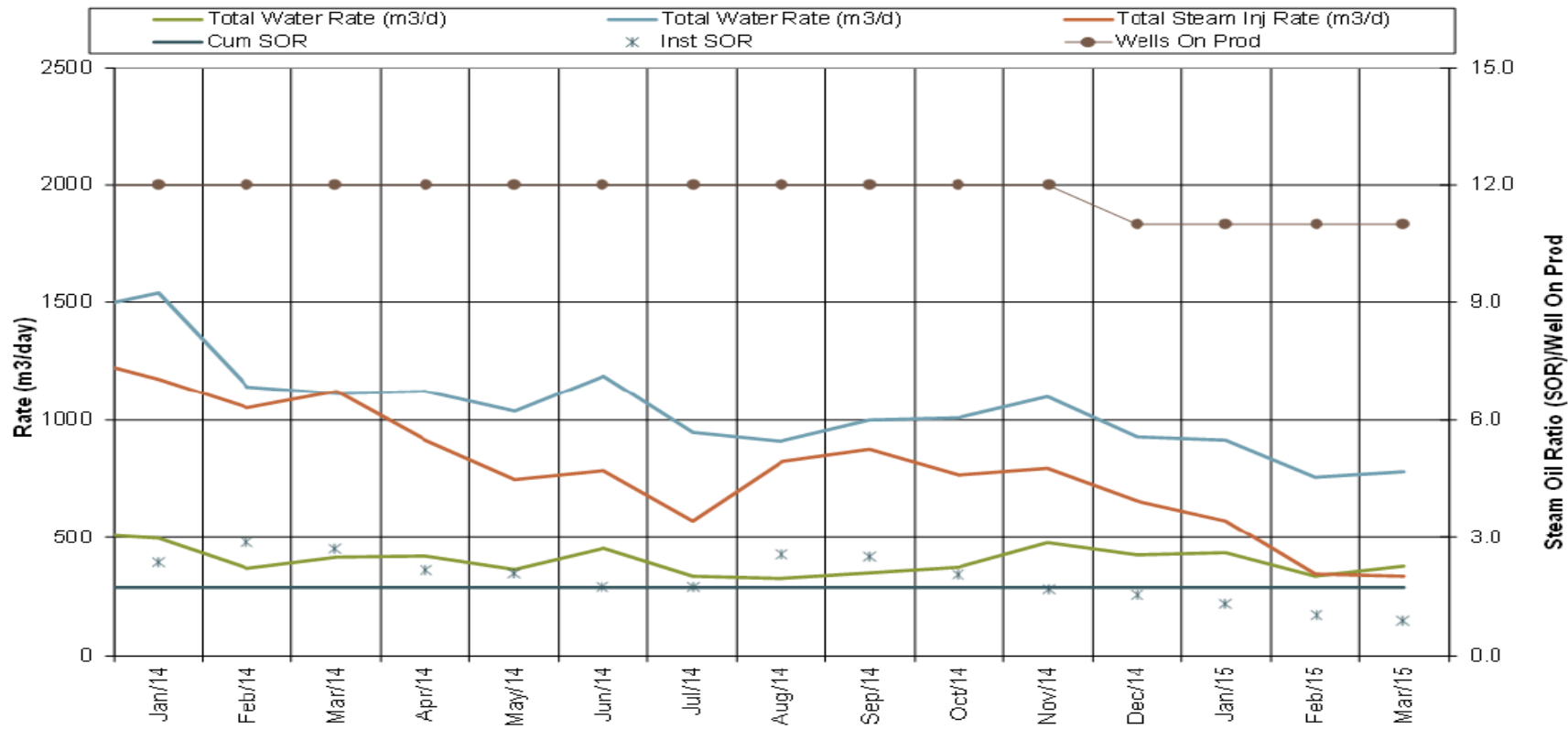
FOSTER CREEK B_L PAD & B_L Wedge Wells™ Performance



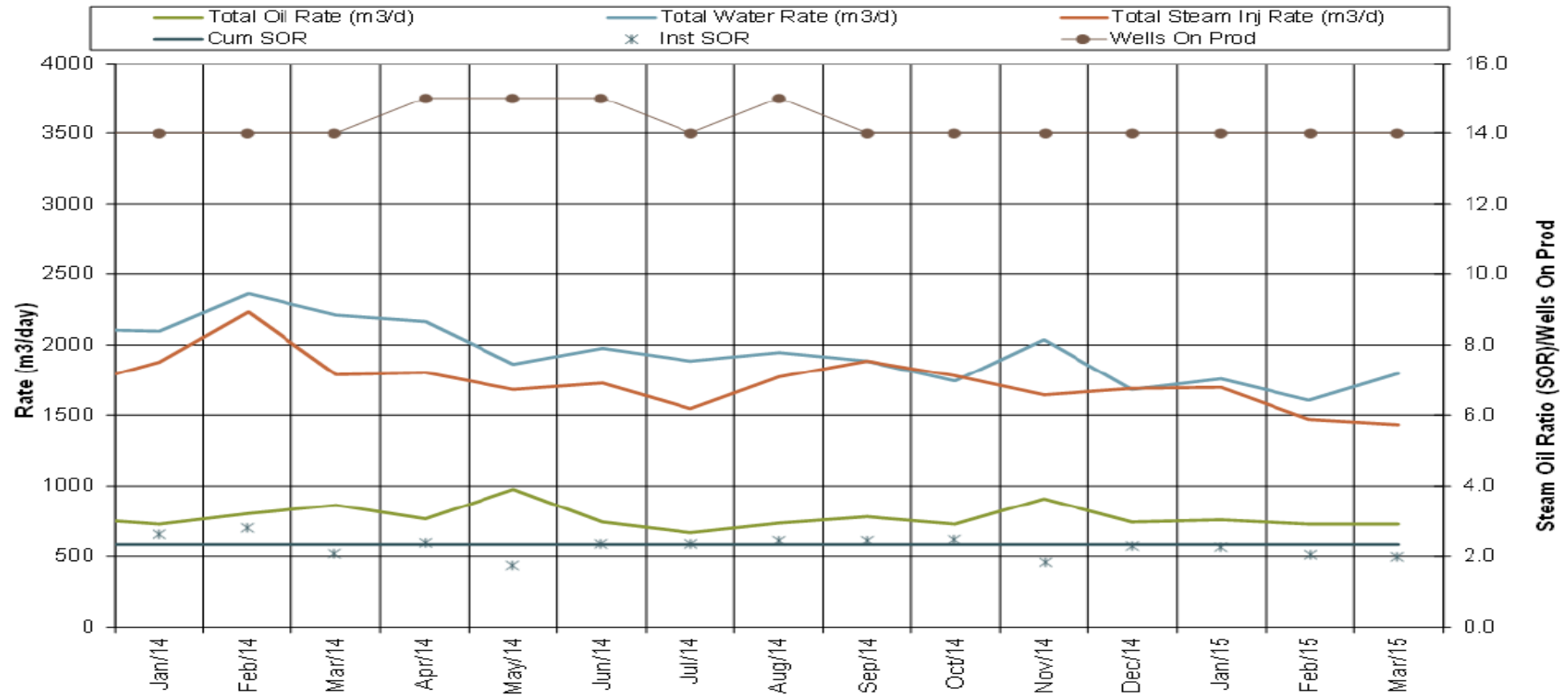
FOSTER CREEK C PAD & C Wedge Wells™ Performance



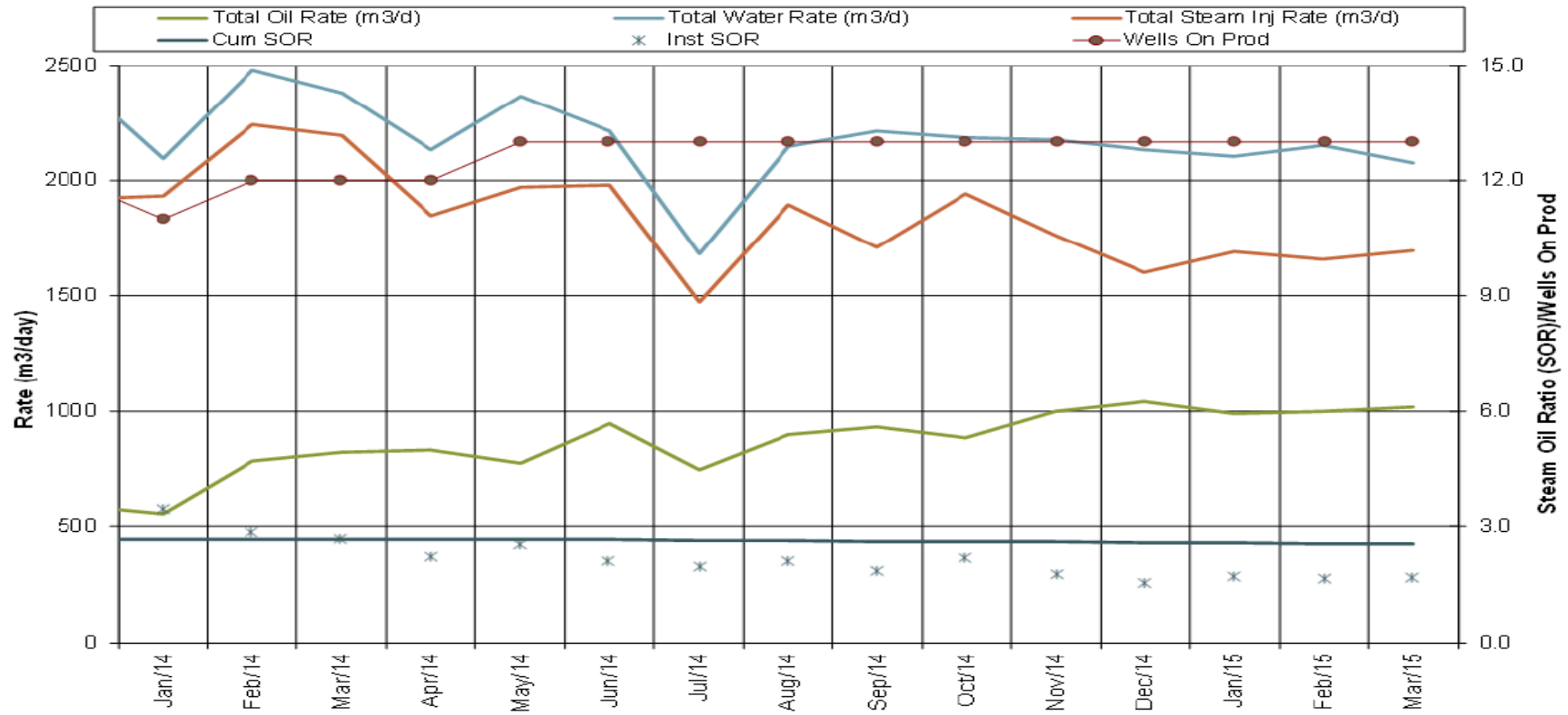
FOSTER CREEK **D PAD & D Wedge Wells™ Performance**



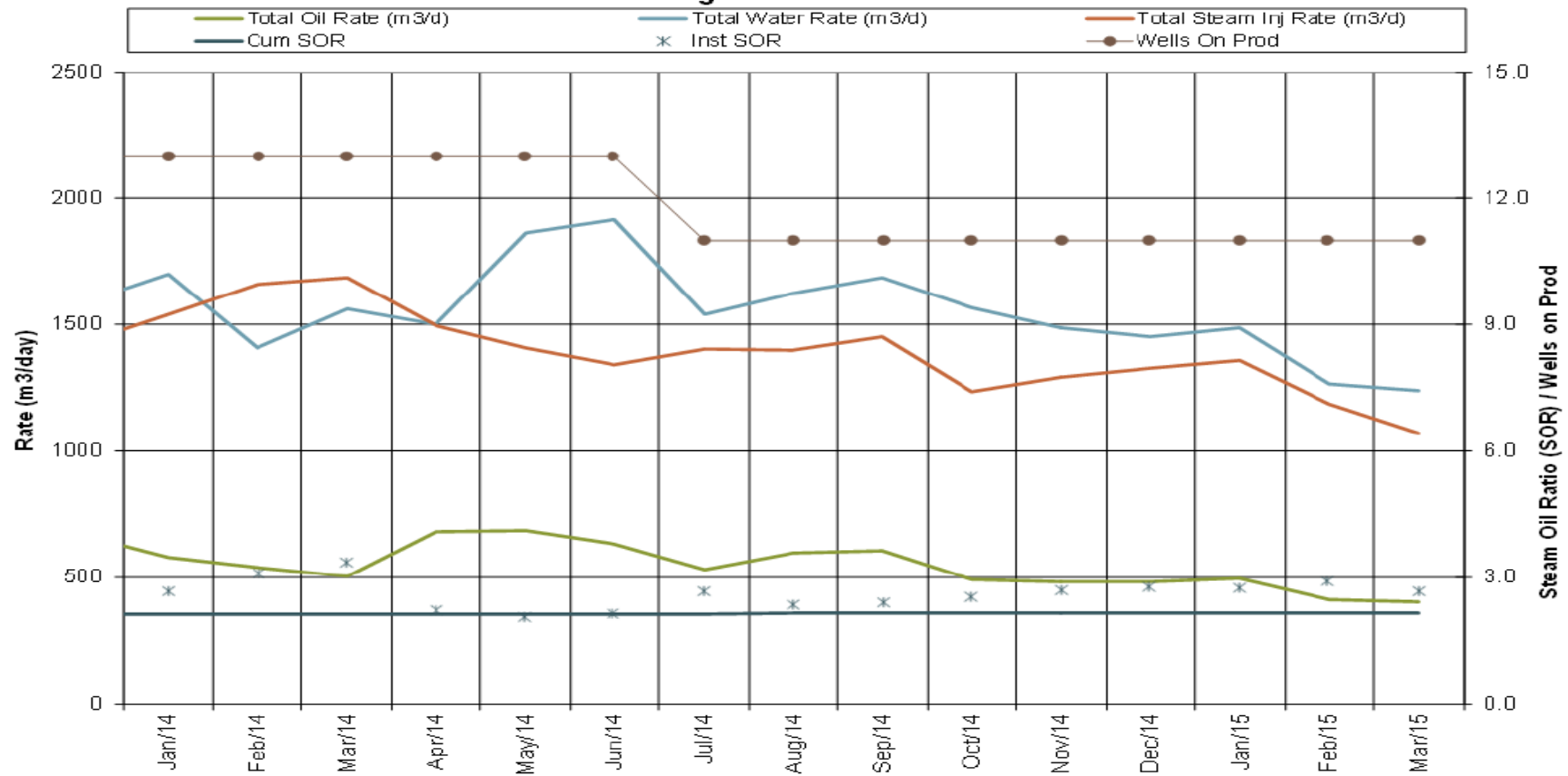
FOSTER CREEK E_K PAD & E_K Wedge Wells™ Performance



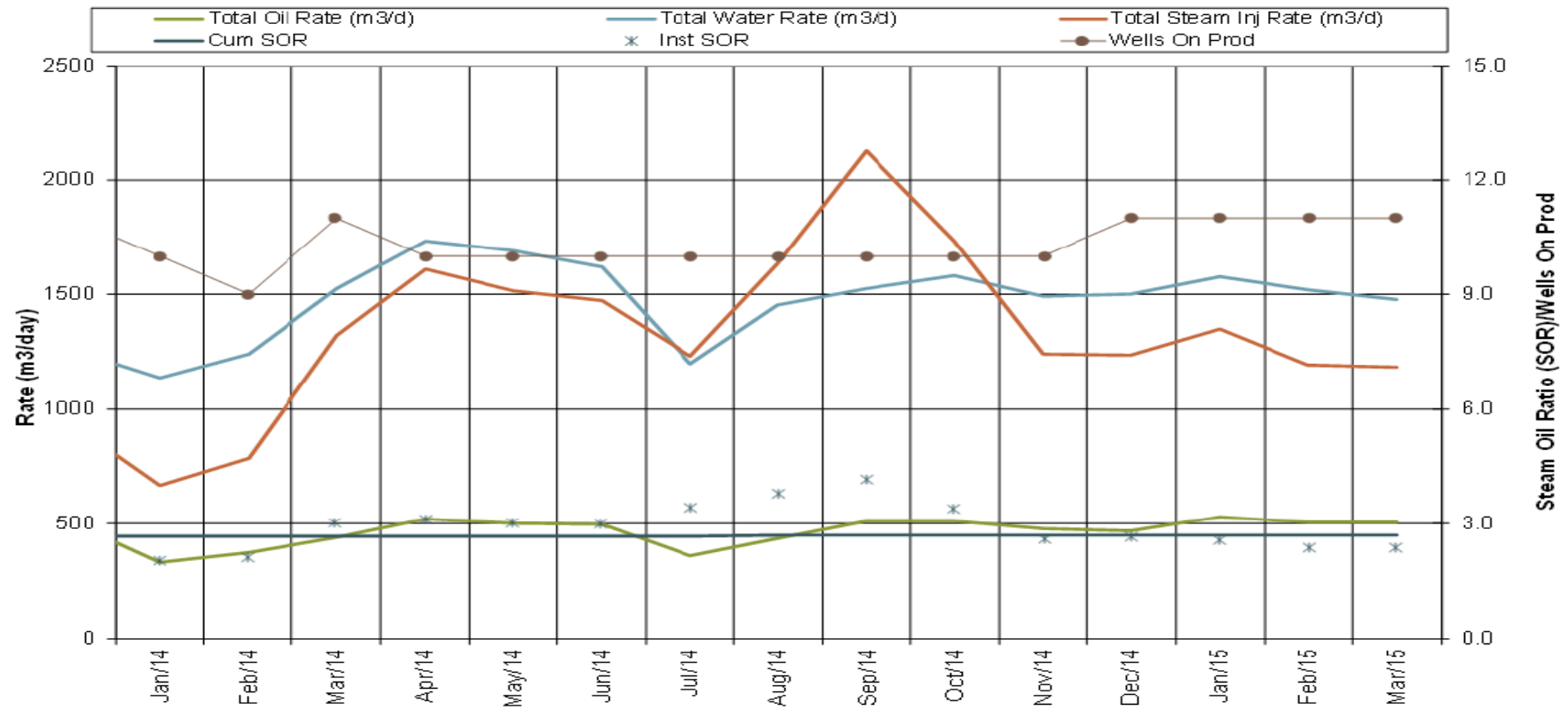
FOSTER CREEK **EXP_M PAD & M Wedge Wells™ Performance**



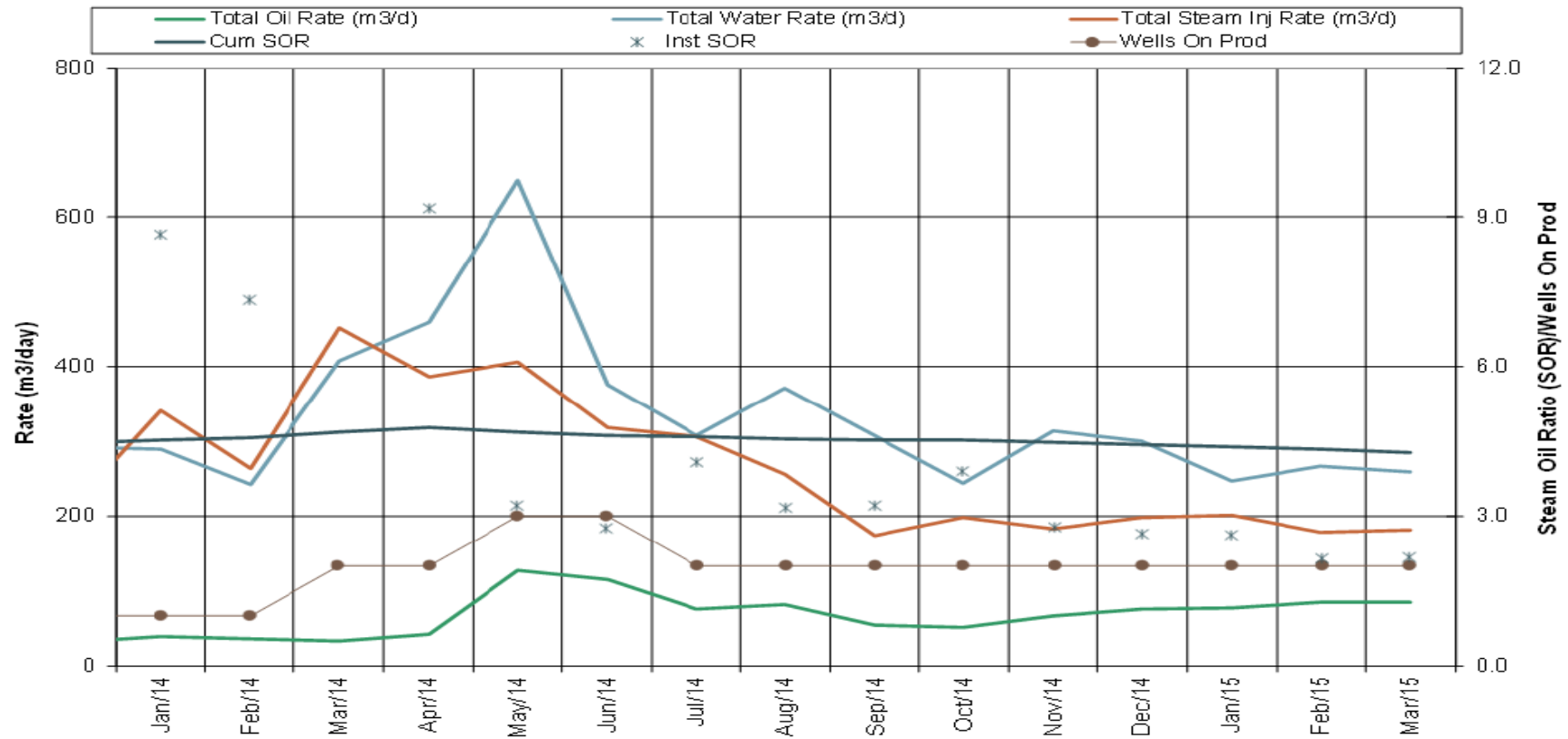
FOSTER CREEK F Pad & F Wedge Wells™ Performance



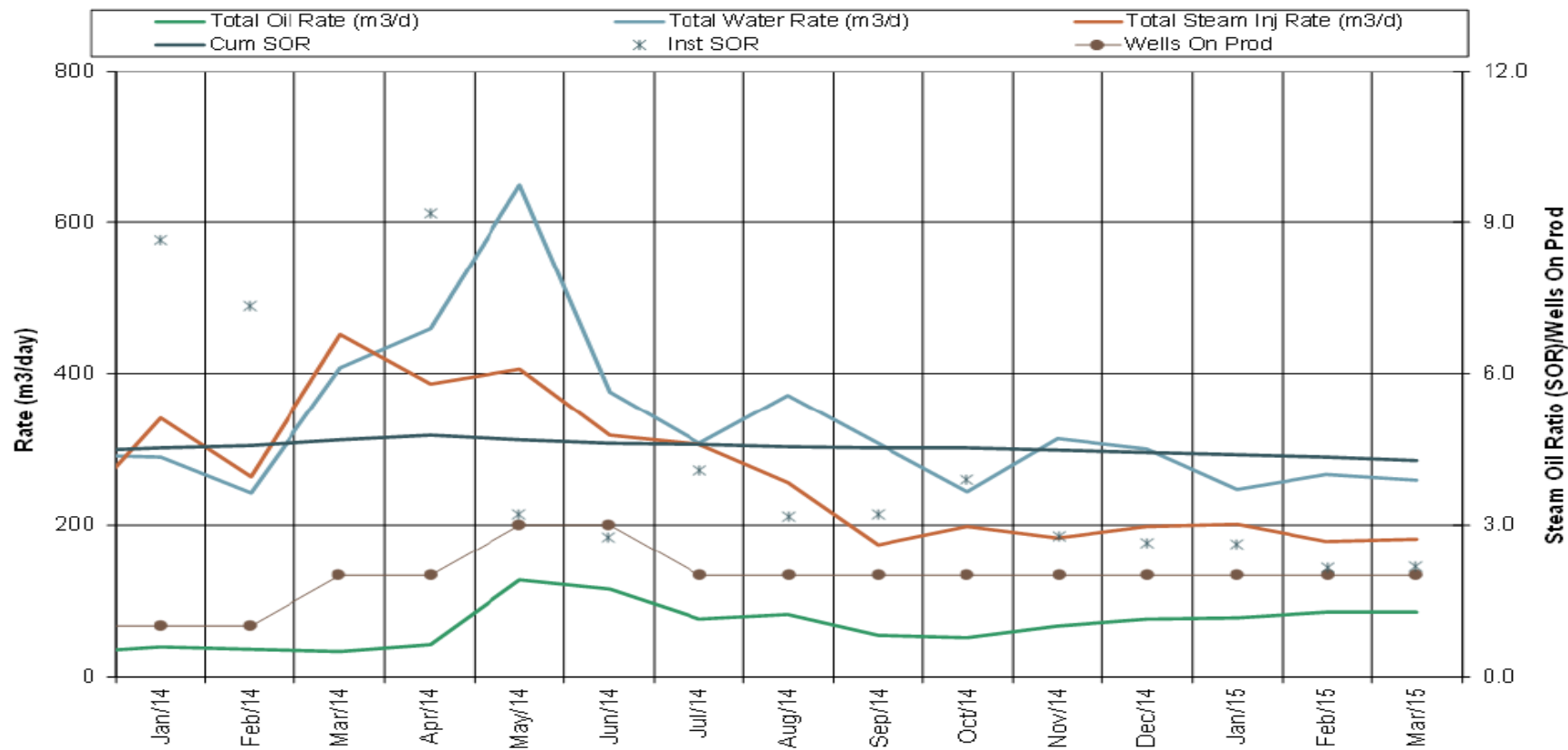
FOSTER CREEK G PAD & G Wedge Wells™ Performance



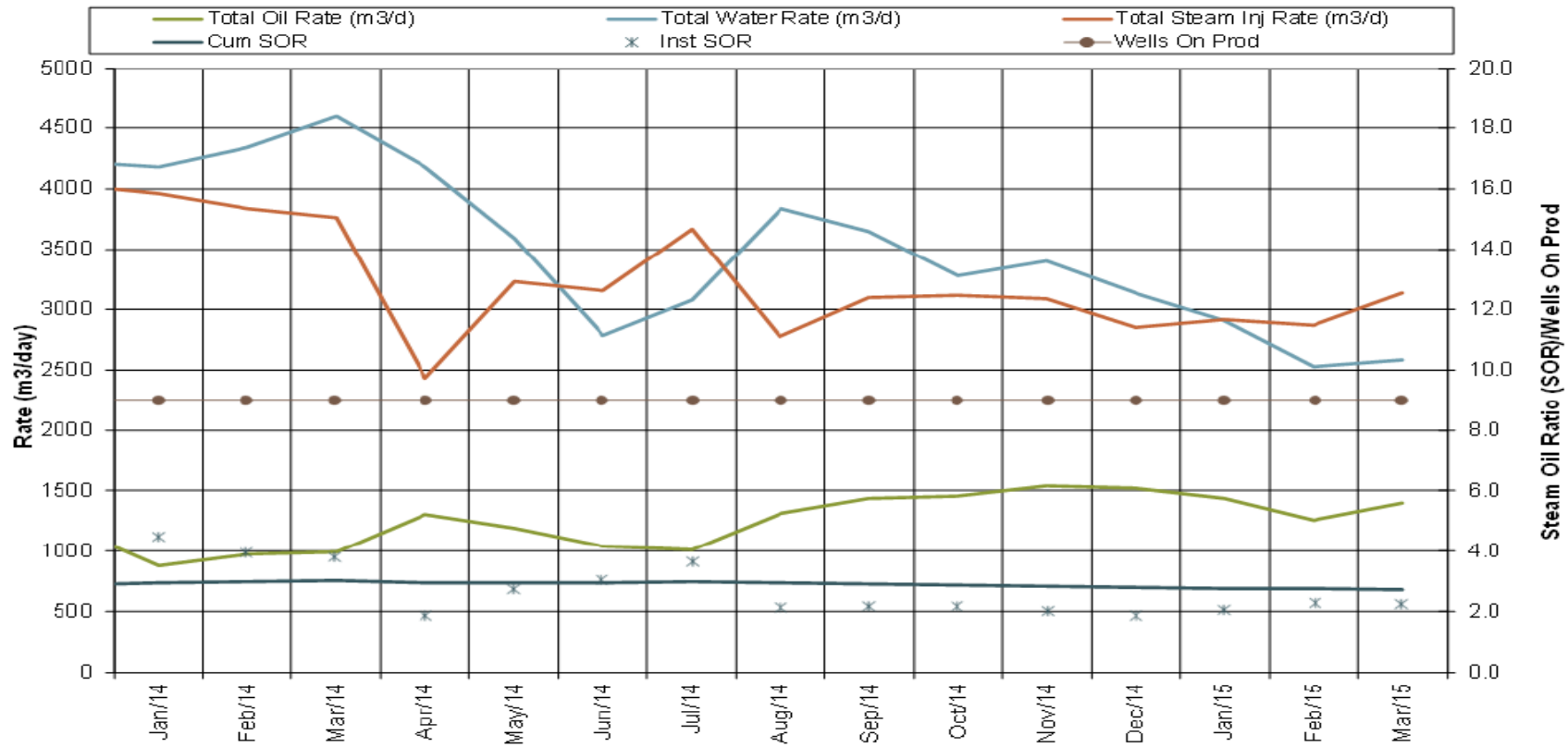
FOSTER CREEK H Pad Performance



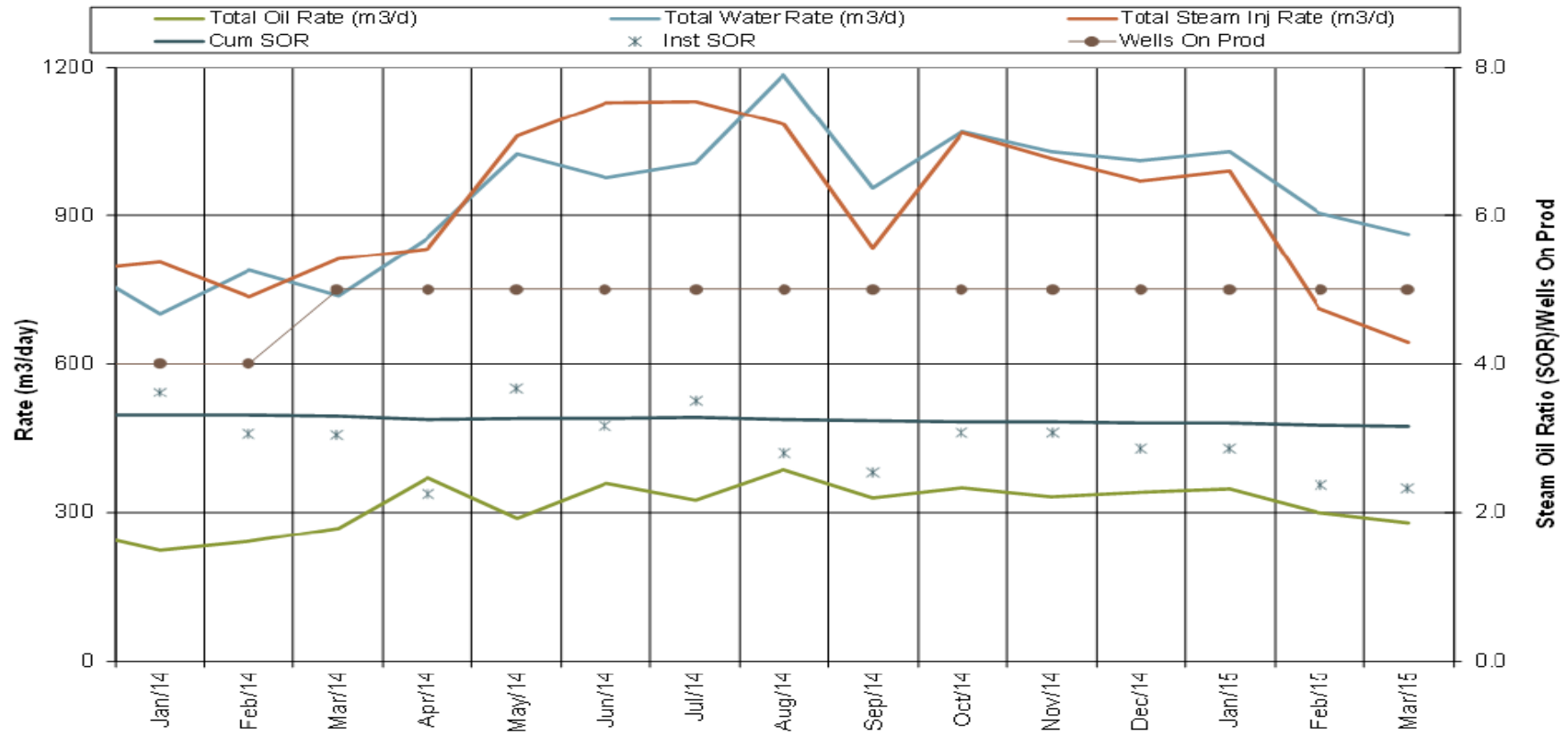
FOSTER CREEK H Pad Performance



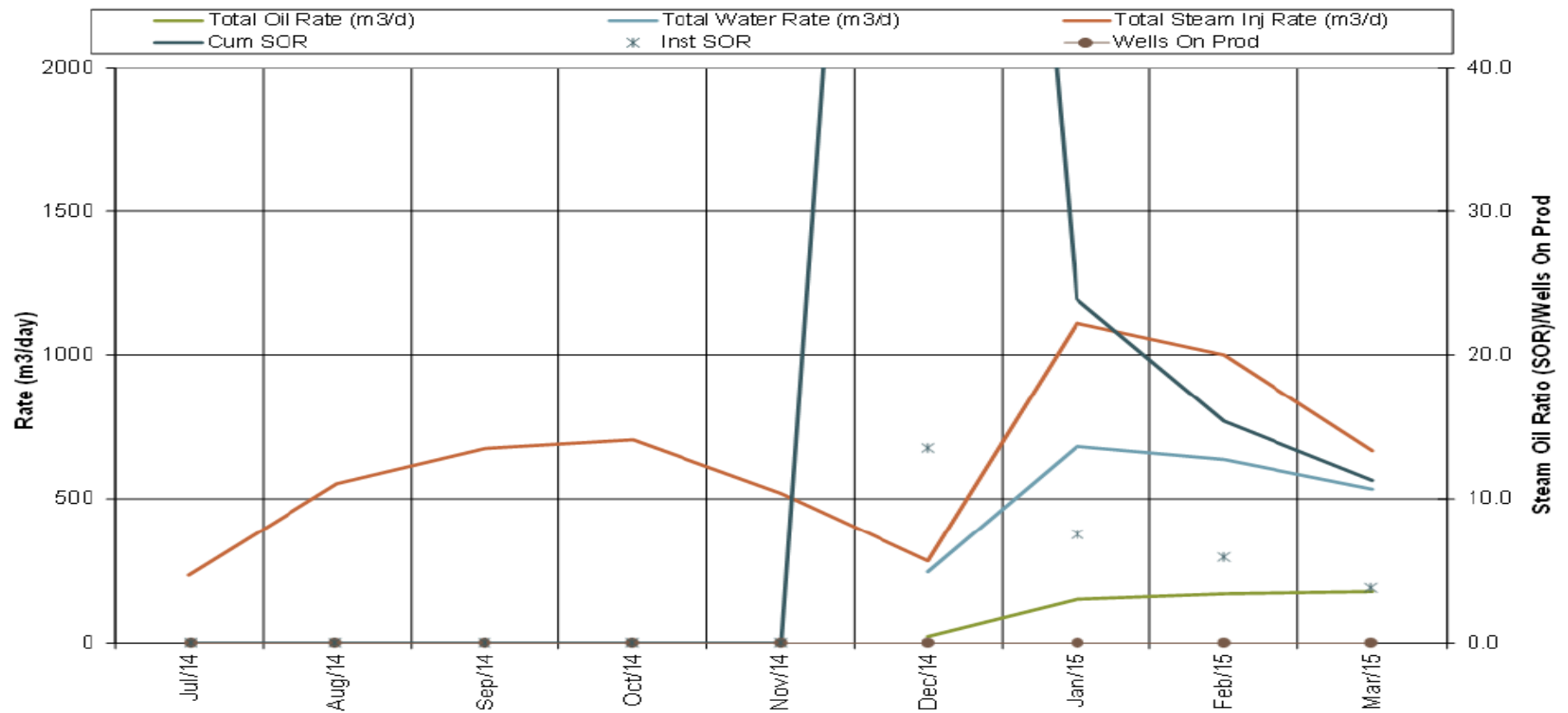
FOSTER CREEK W01 Pad Performance



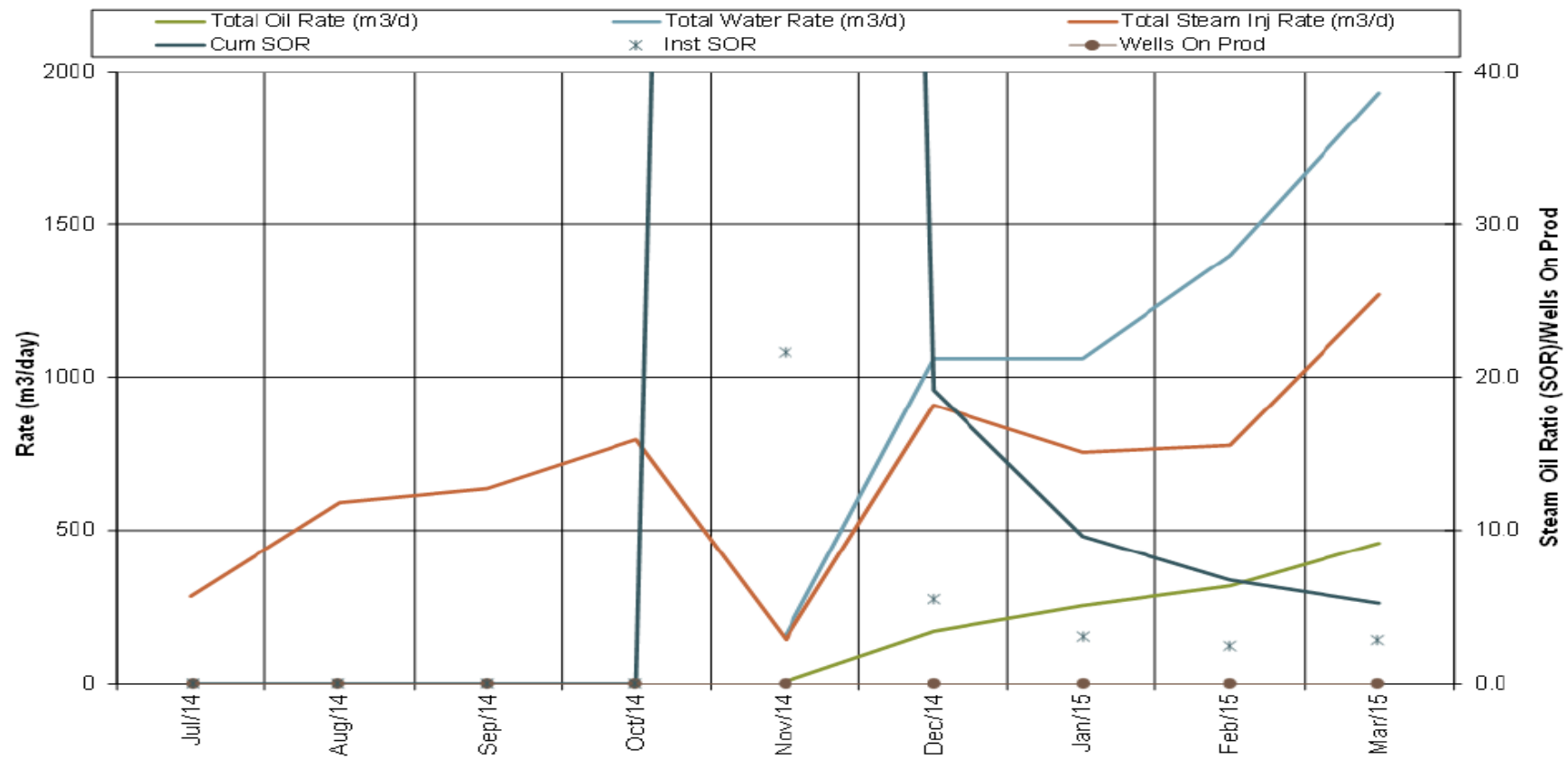
FOSTER CREEK W02 Pad Performance



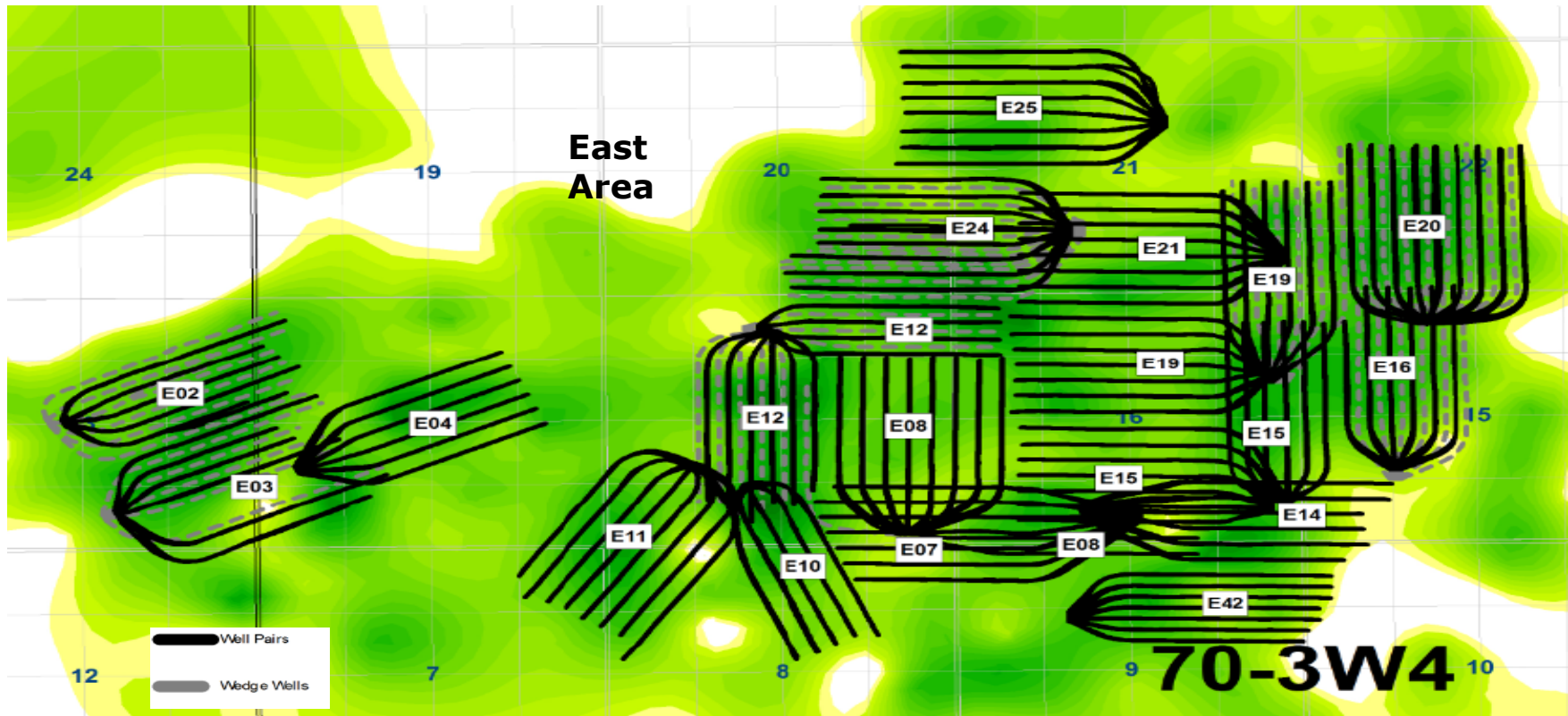
FOSTER CREEK W03 Pad Performance



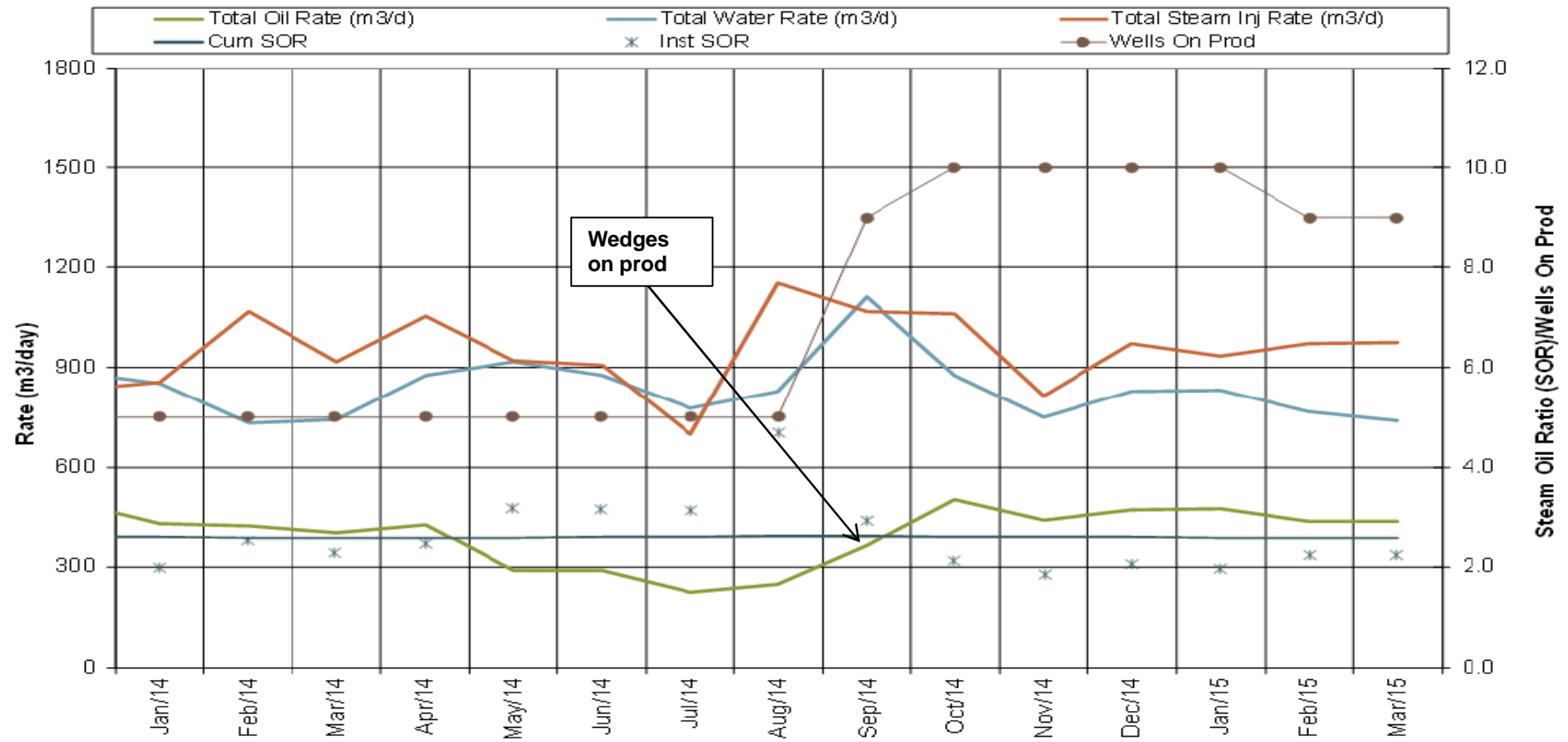
FOSTER CREEK W06 Pad Performance



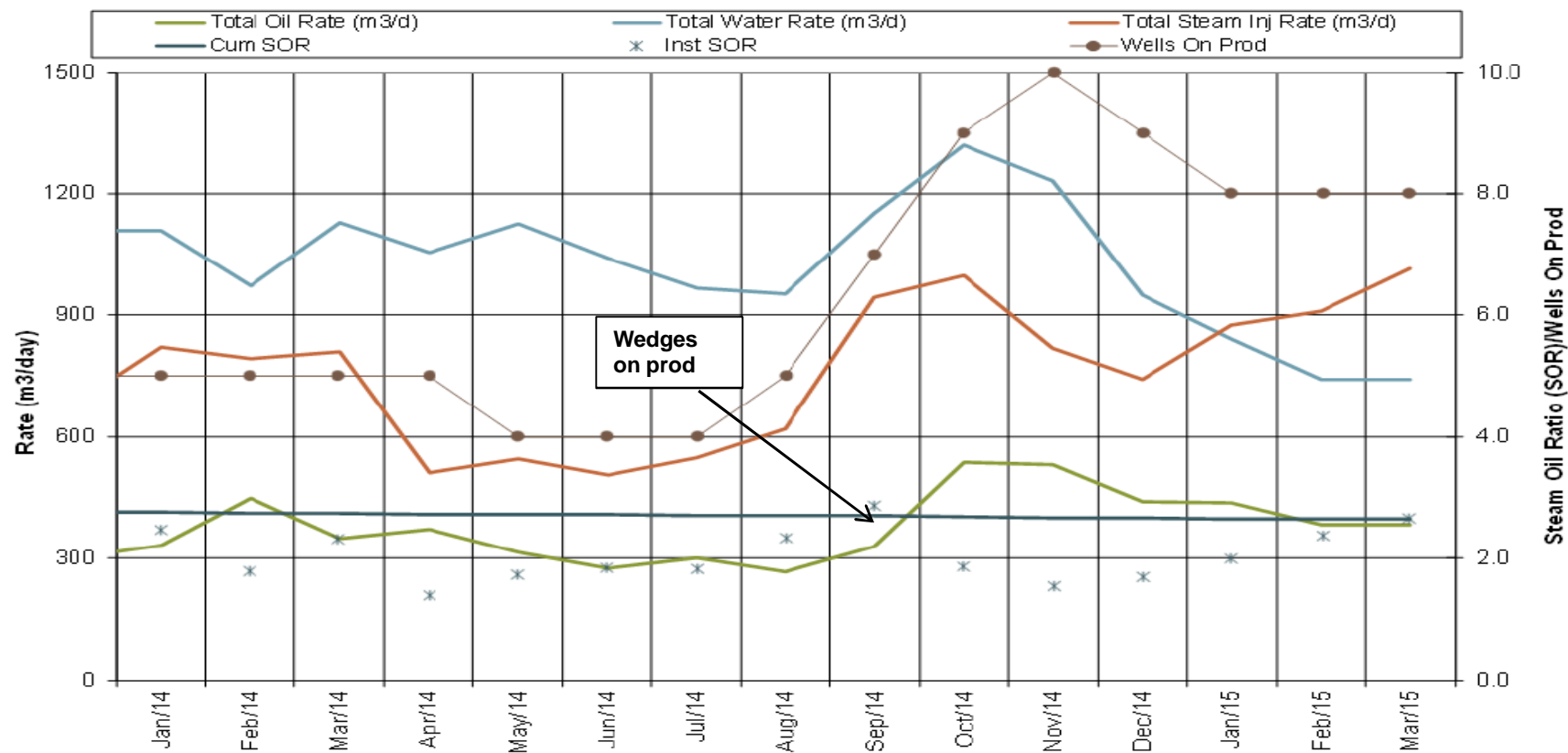
Foster Creek east area



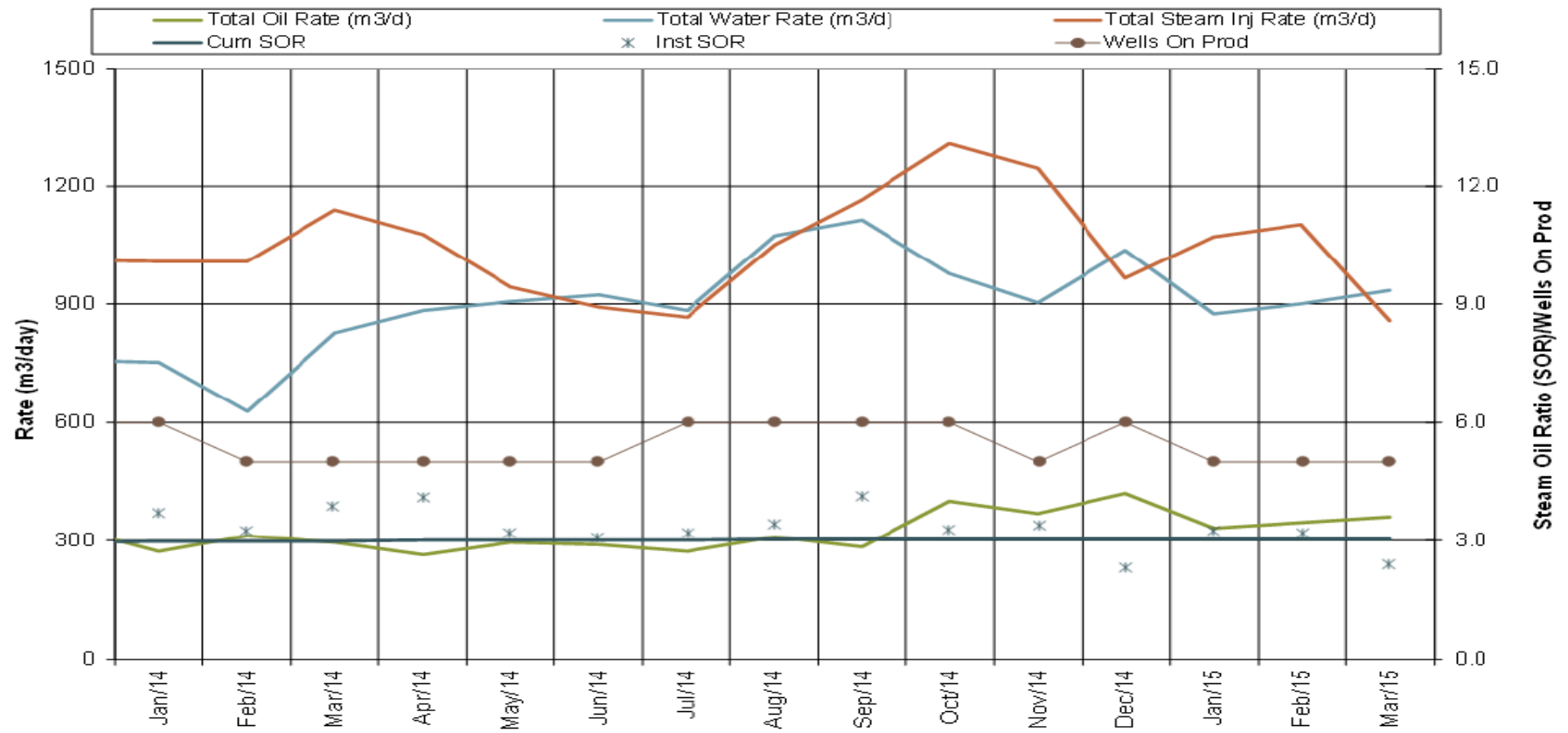
FOSTER CREEK E02 Pad & E02 Wedge Wells Performance



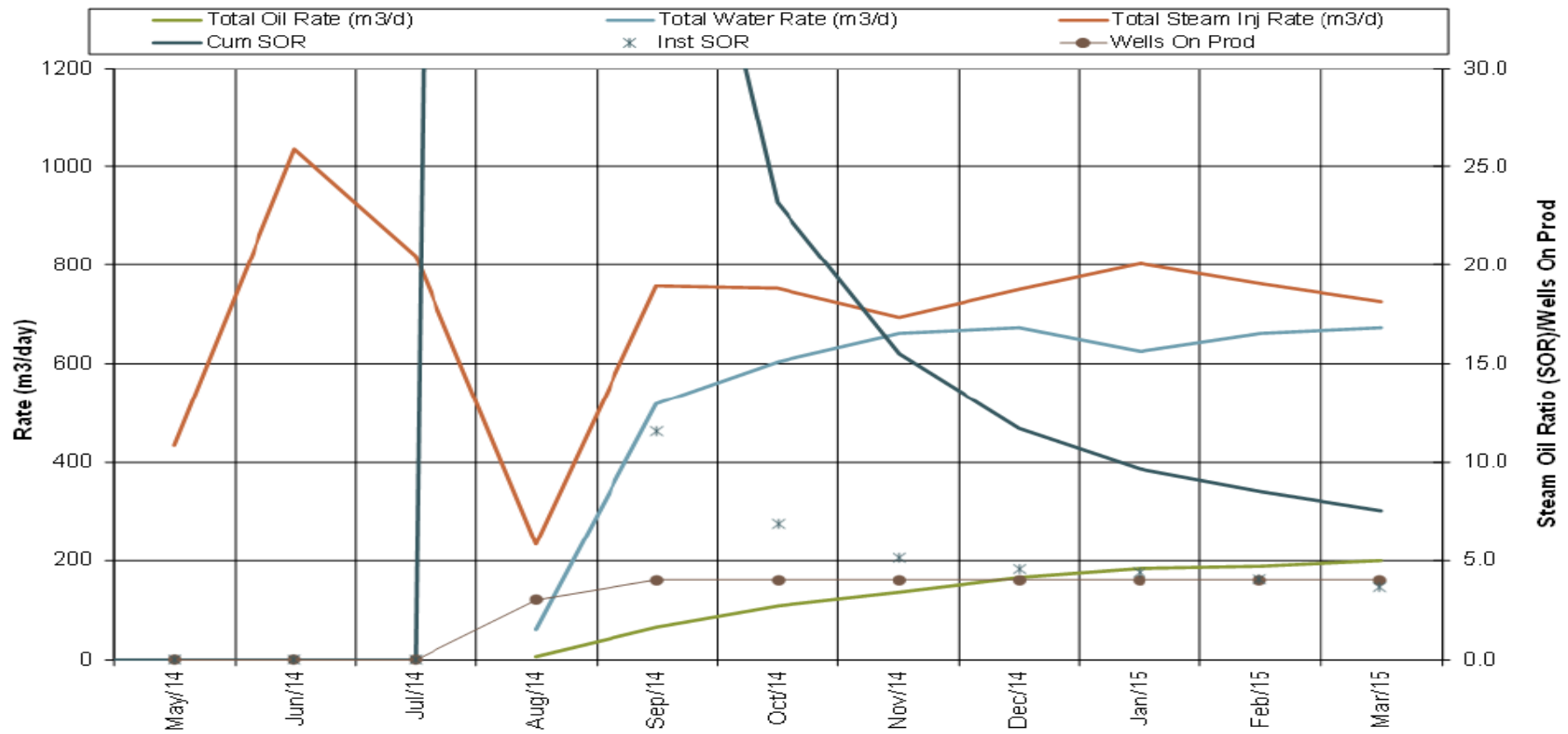
FOSTER CREEK E03 Pad & E03 Wedge Wells Performance



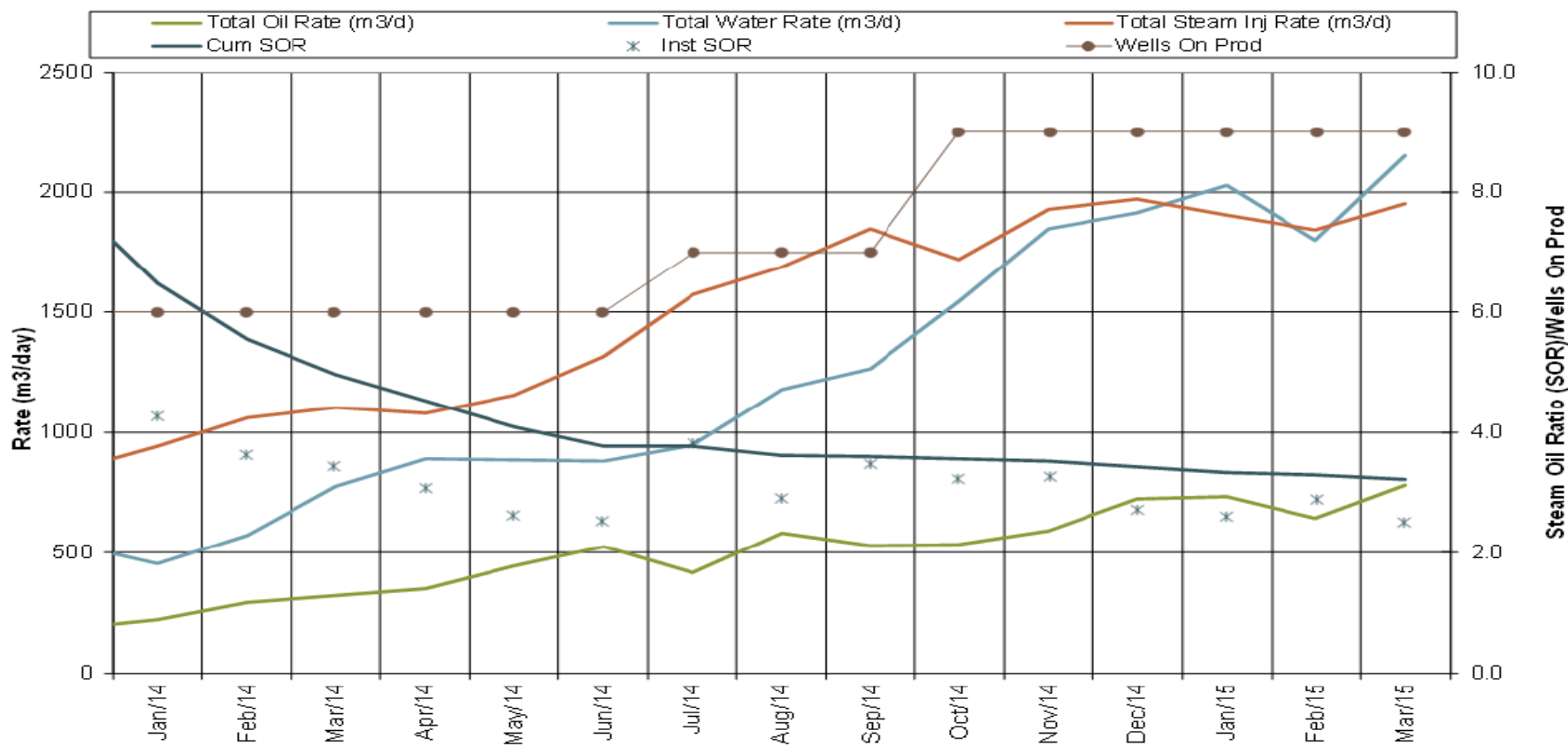
FOSTER CREEK E04 Pad Performance



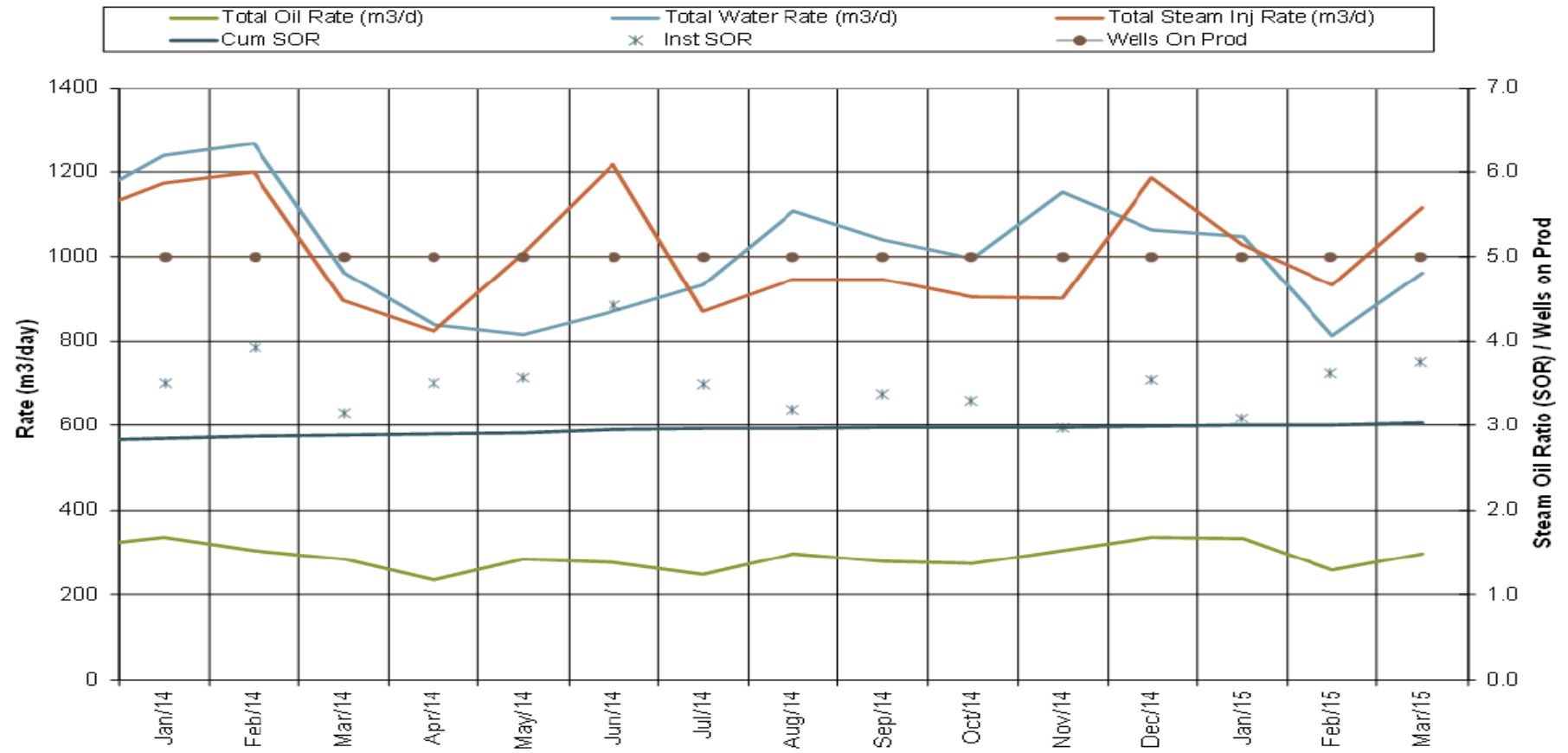
FOSTER CREEK E07 Pad Performance



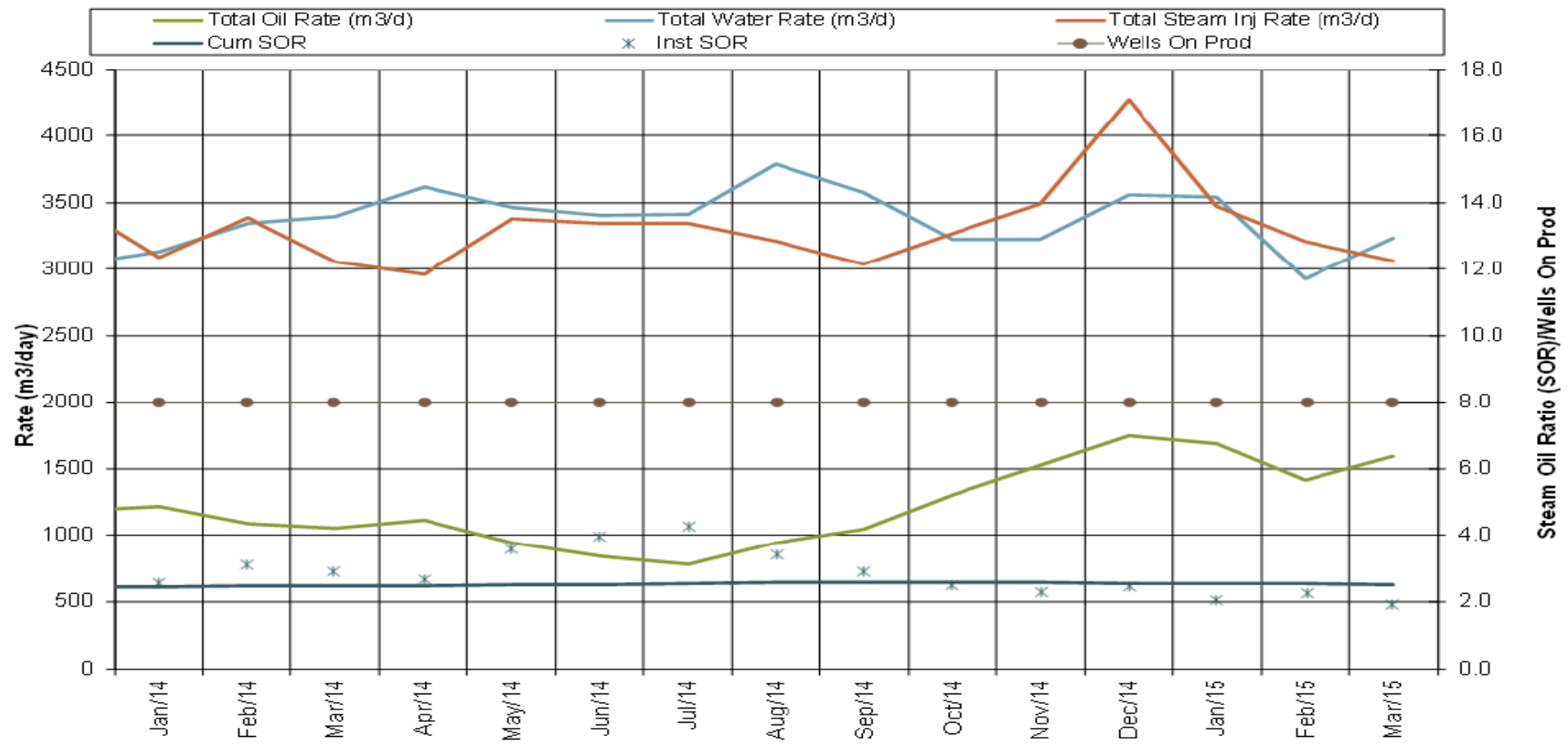
FOSTER CREEK E08 Pad Performance



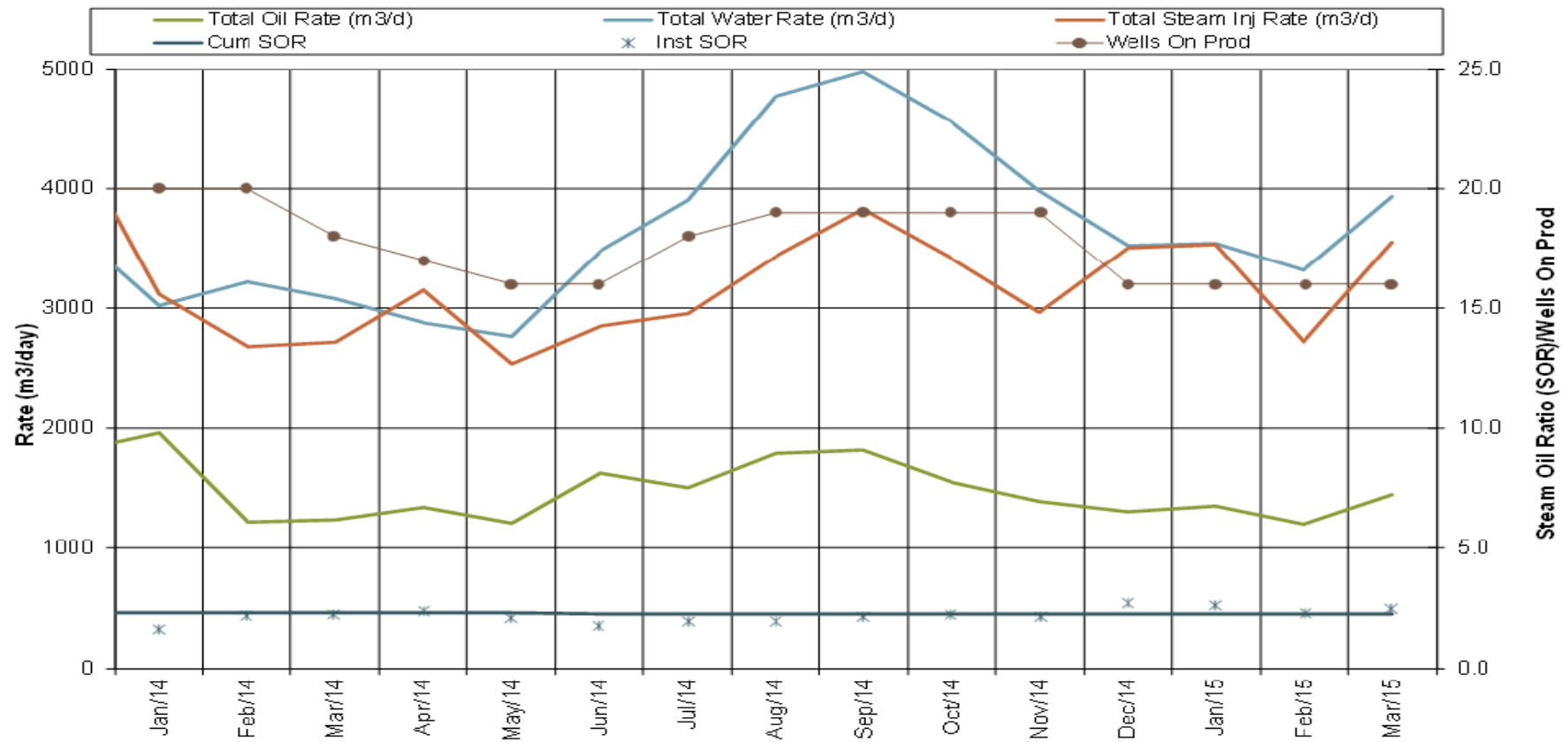
FOSTER CREEK E10 Pad Performance



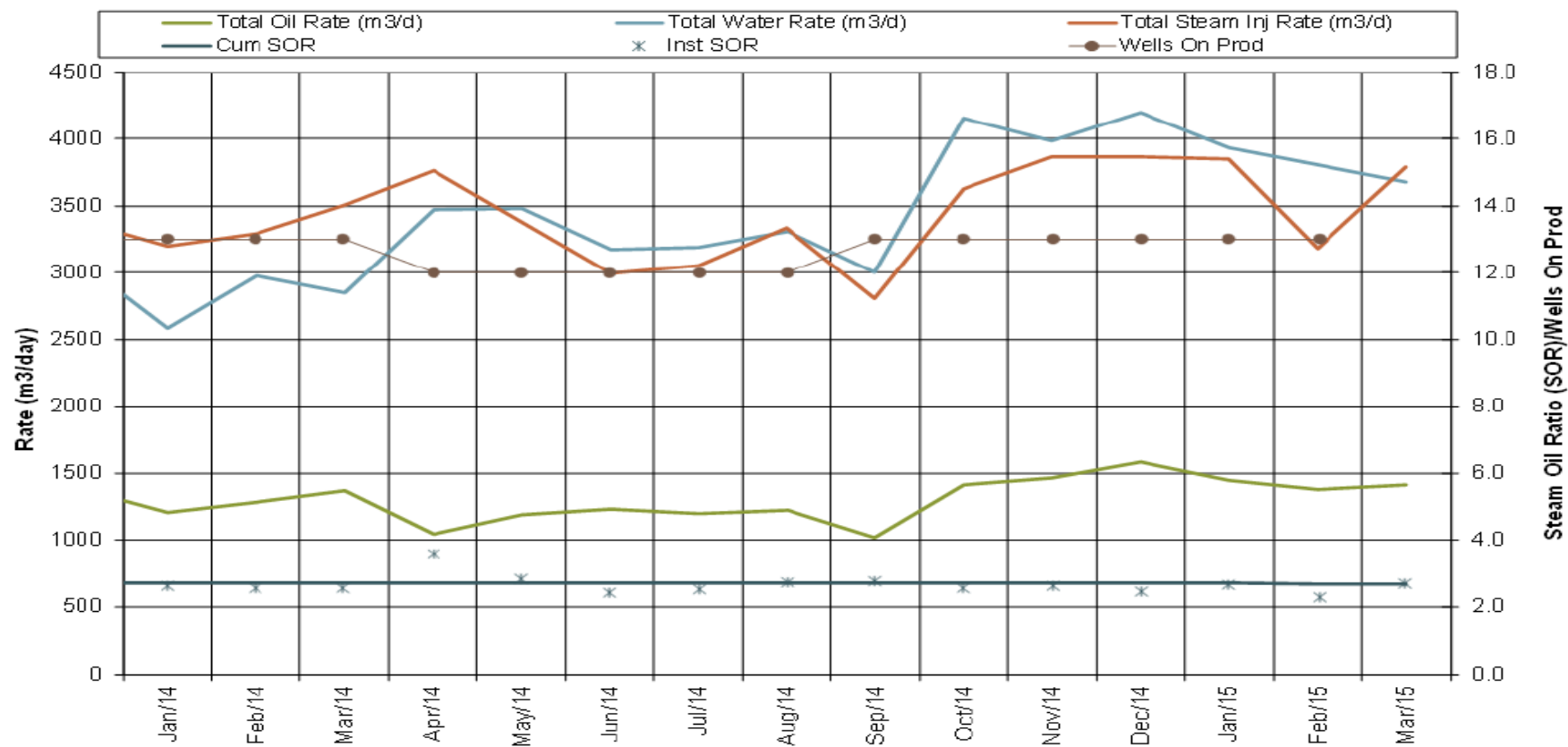
FOSTER CREEK E11 Pad Performance



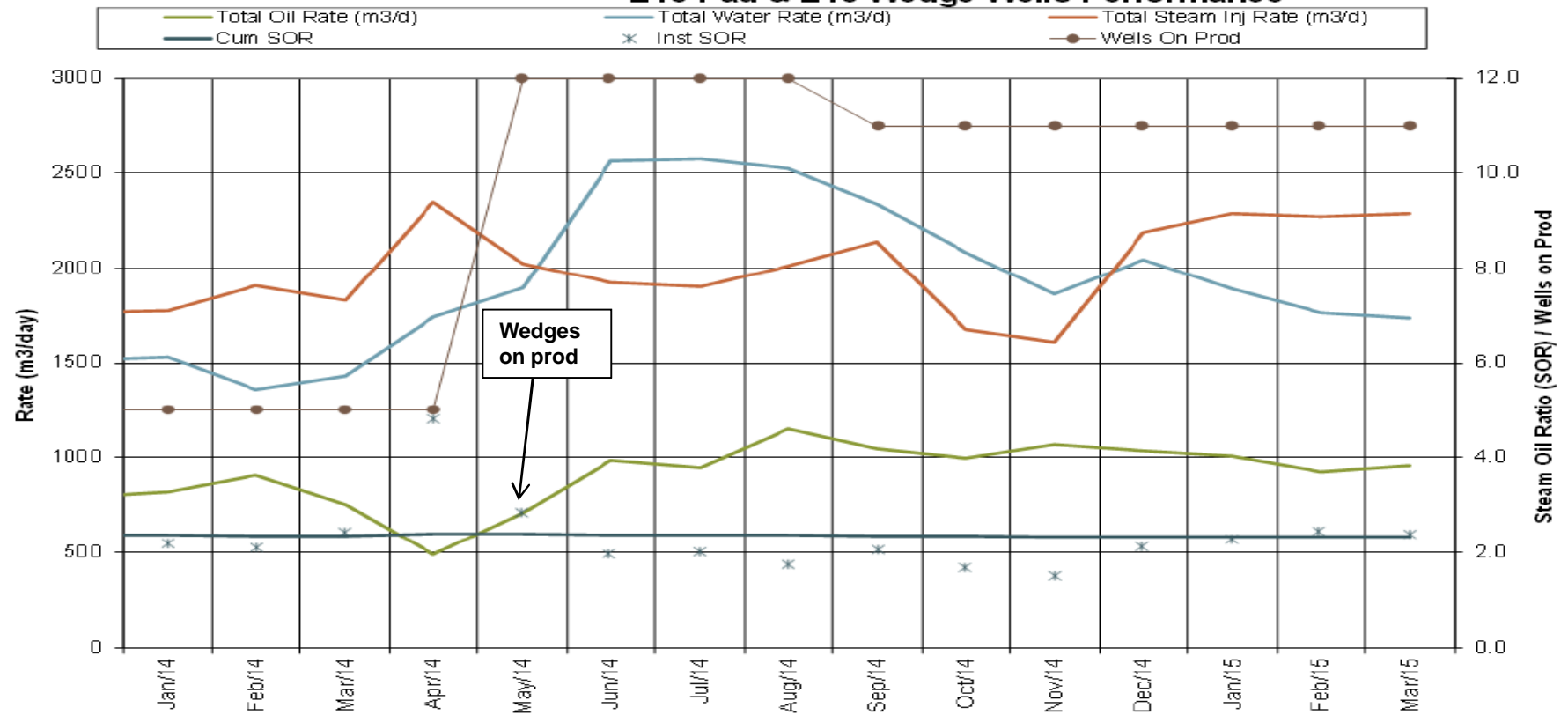
FOSTER CREEK E12 Pad Performance



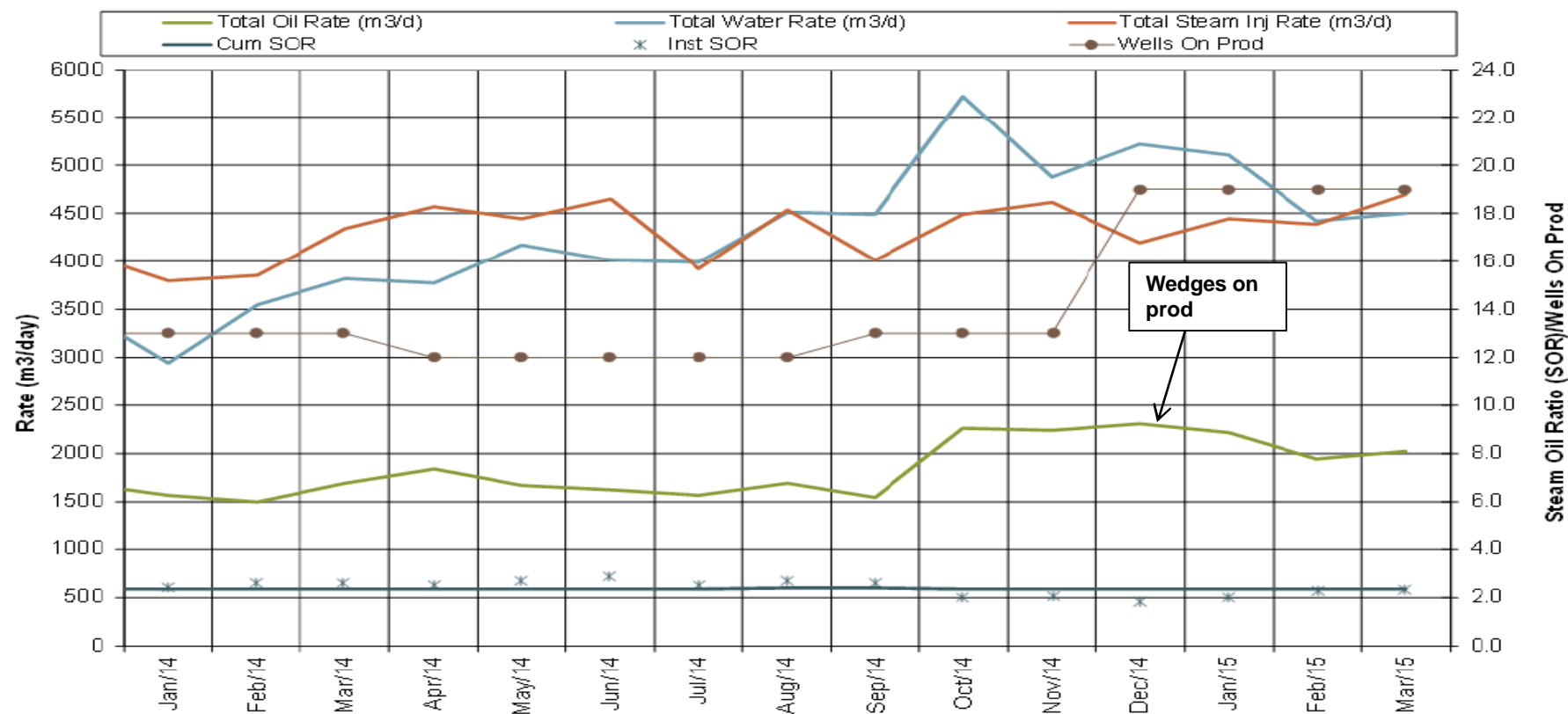
FOSTER CREEK E15 Pad Performance



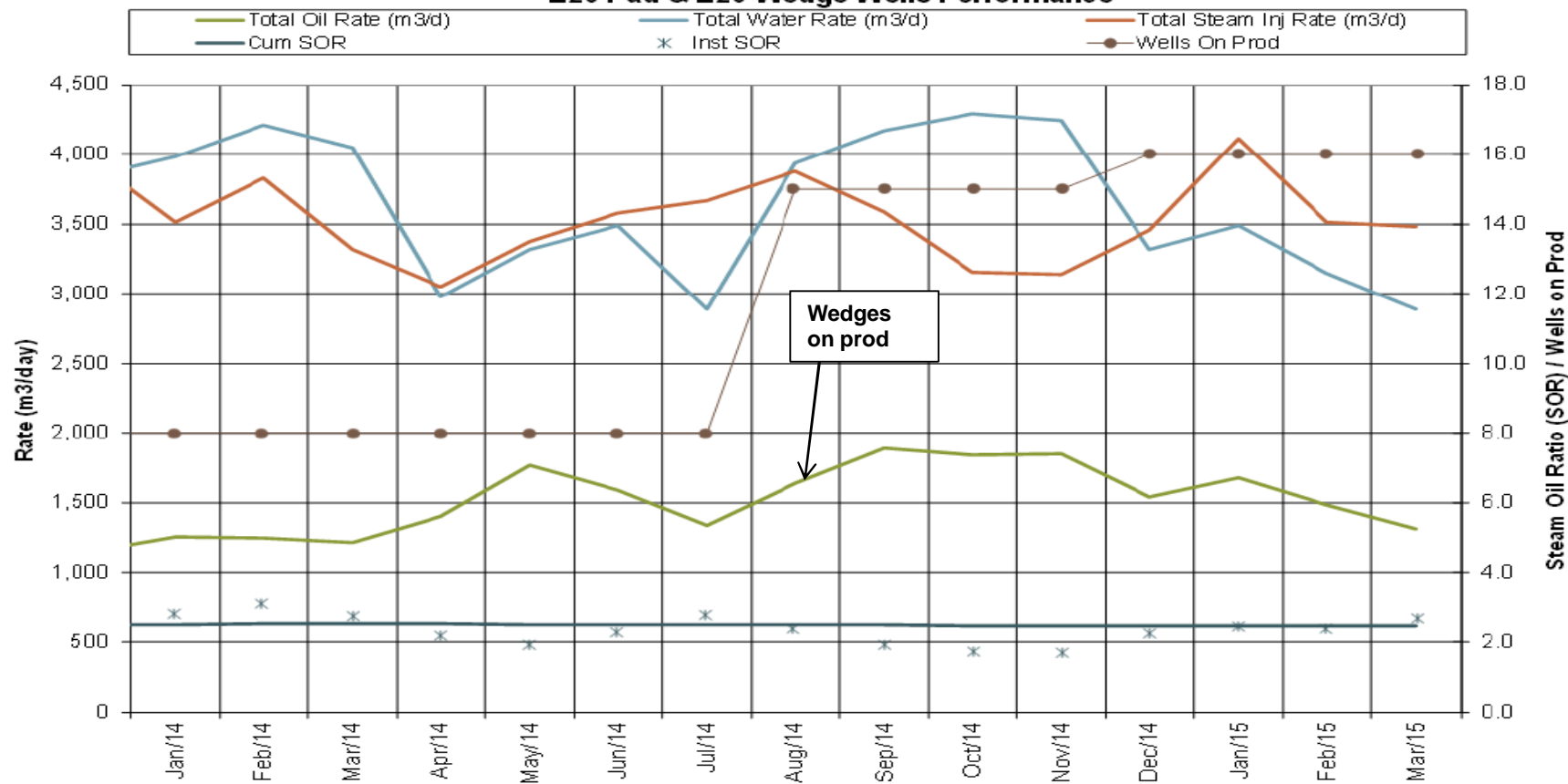
FOSTER CREEK E16 Pad & E16 Wedge Wells Performance



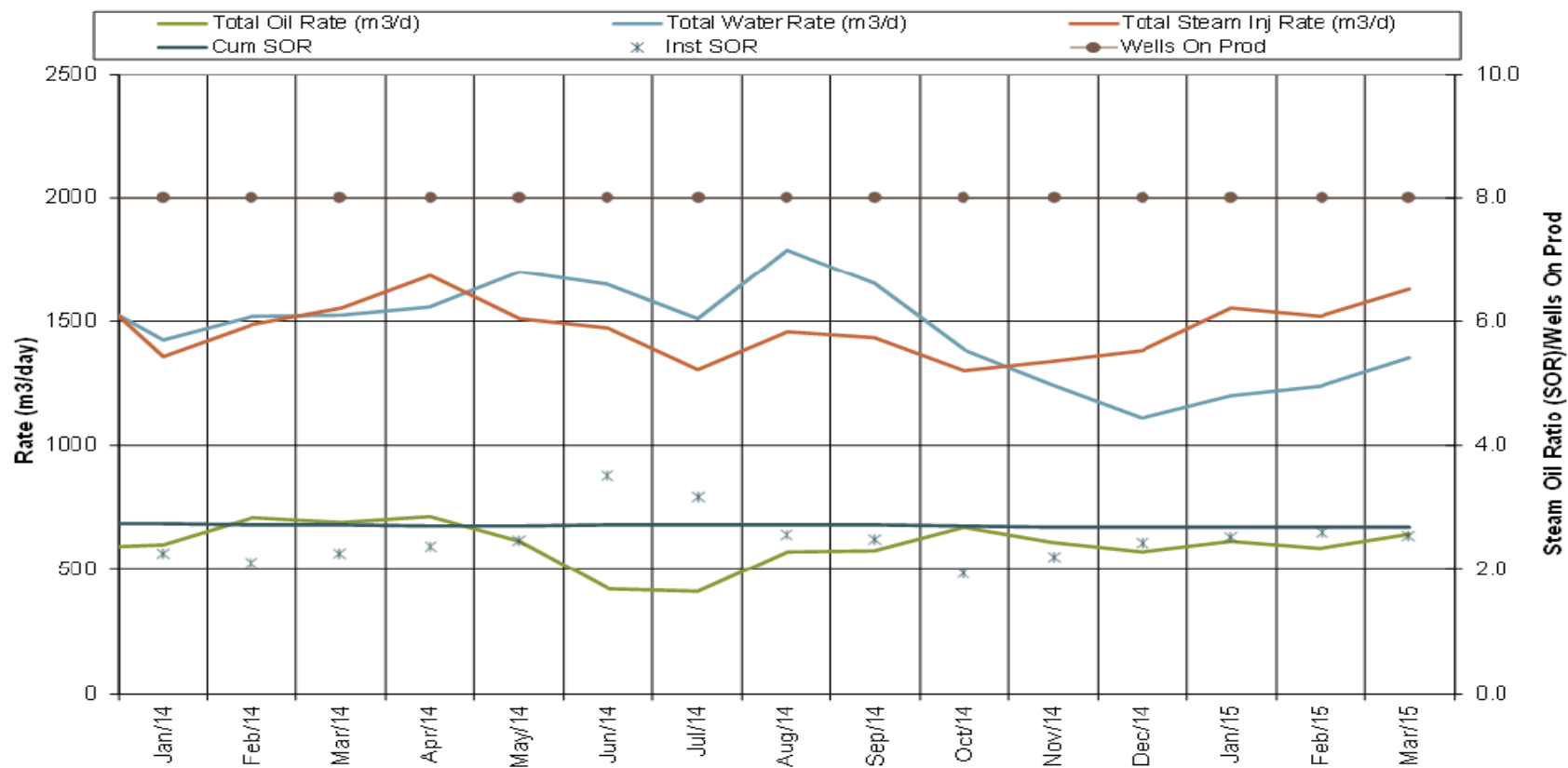
FOSTER CREEK E19 Pad & E19 Wedge Wells Performance



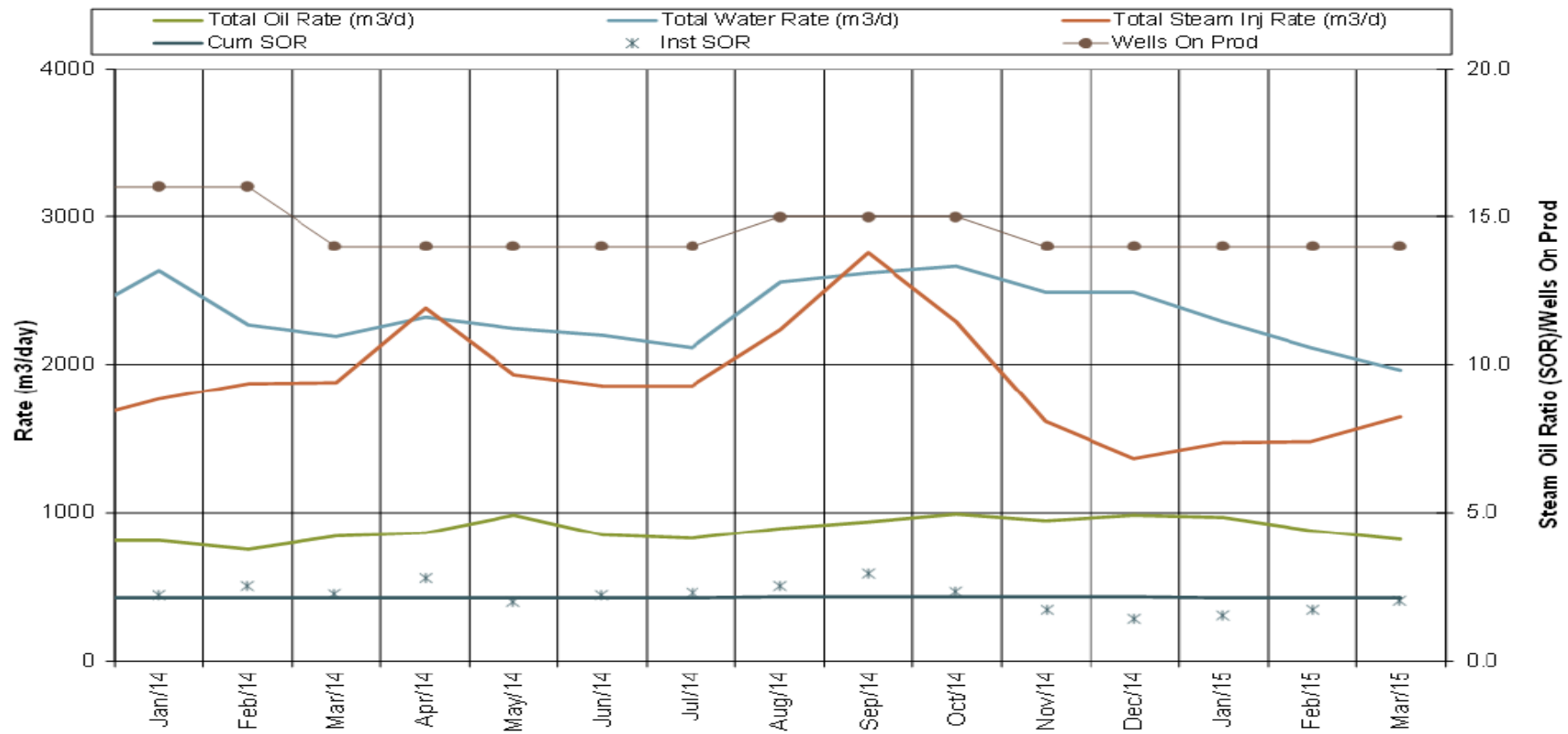
FOSTER CREEK E20 Pad & E20 Wedge Wells Performance



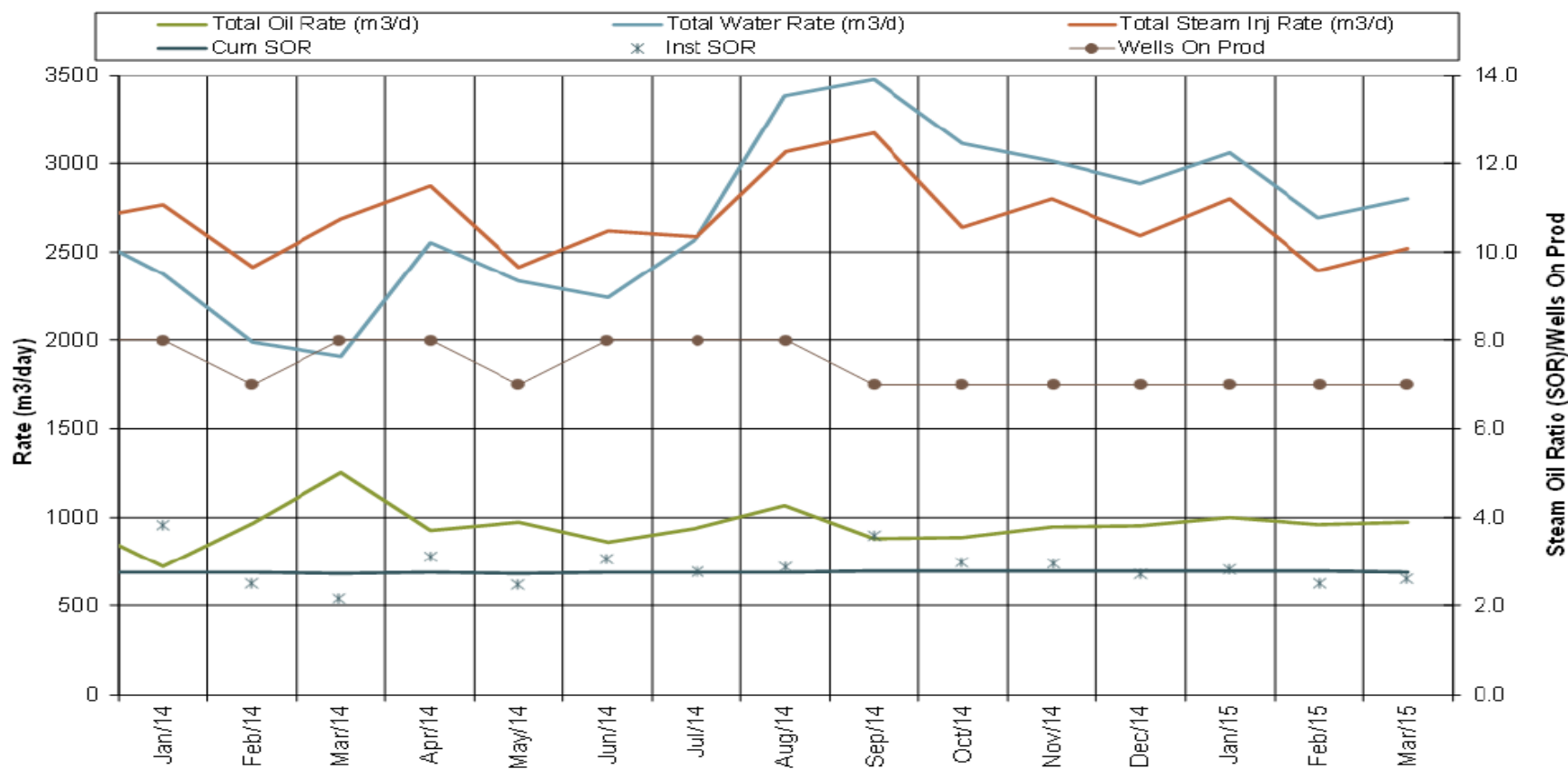
FOSTER CREEK E21 Pad Performance



FOSTER CREEK E24 PAD & E24 Wedge Wells™ Performance



FOSTER CREEK E25 Pad Performance



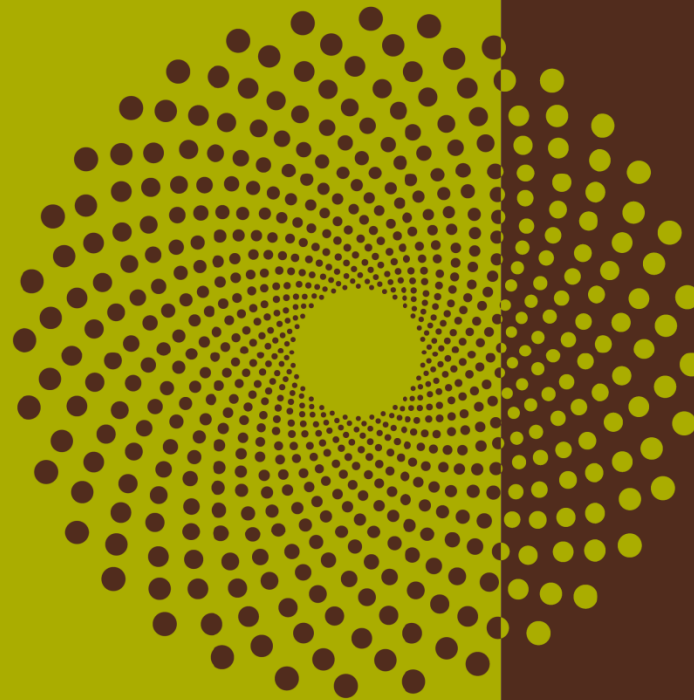
Instrumentation in wells

Subsection 3.1.1 – 5 c, d)

cenovus
ENERGY

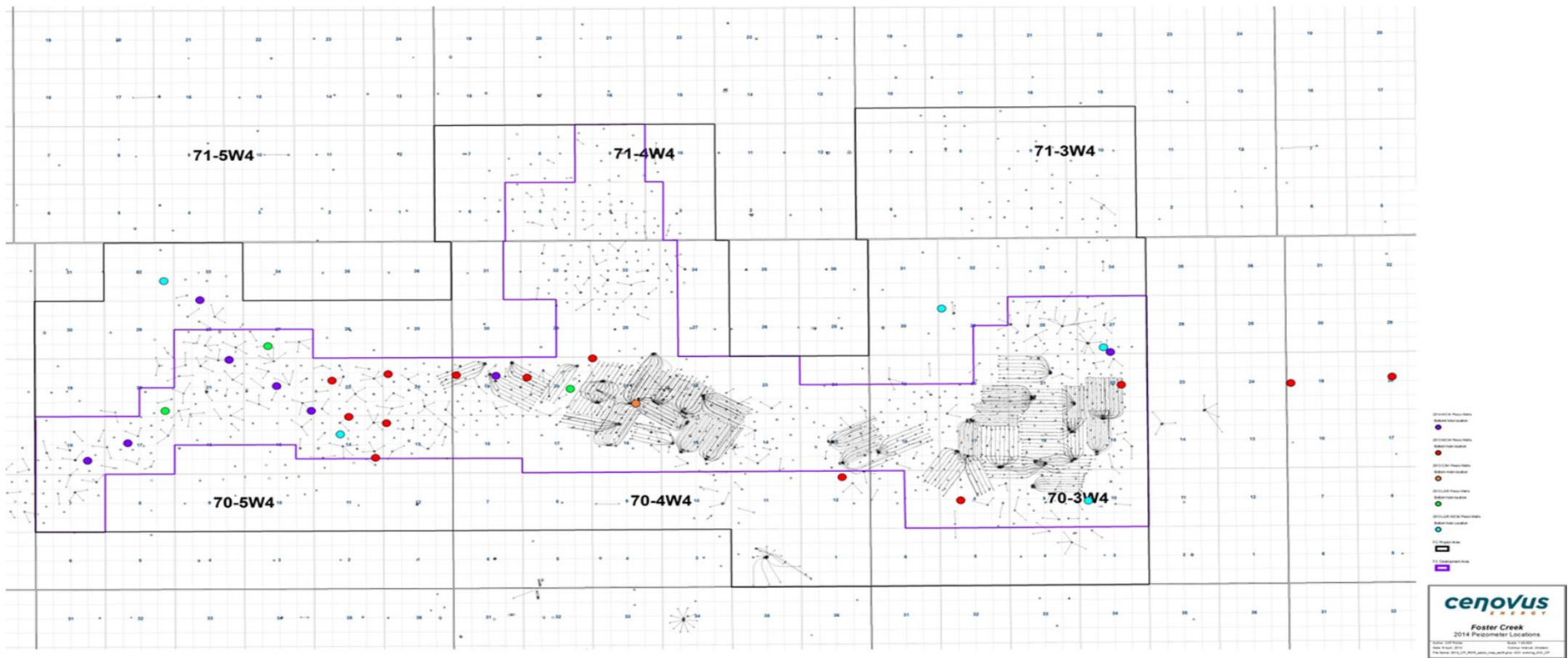


Piezometer data

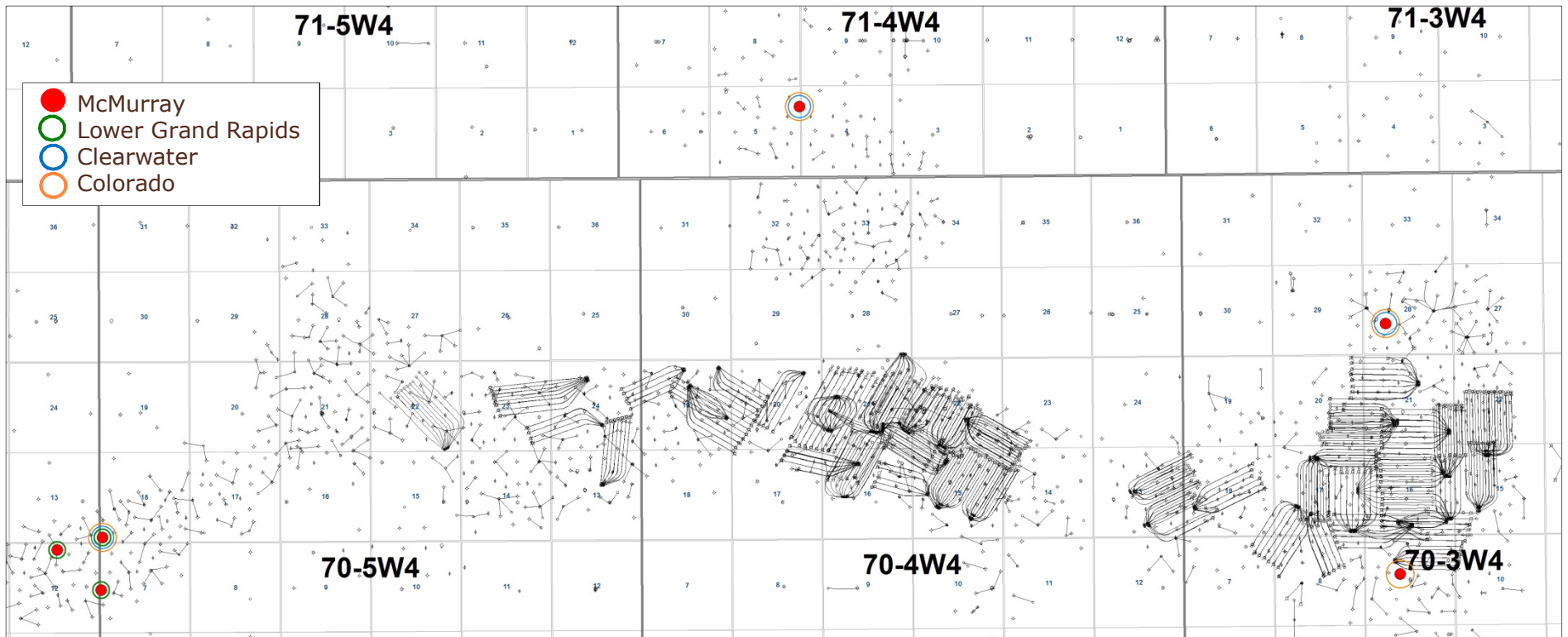


cenovus
ENERGY

Foster Creek piezometer locations



Foster Creek 2015 piezometer locations



Piezometer details

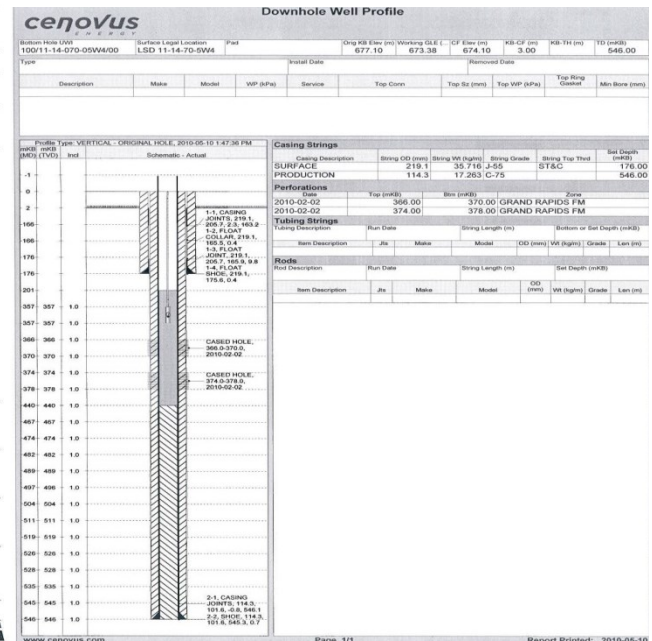
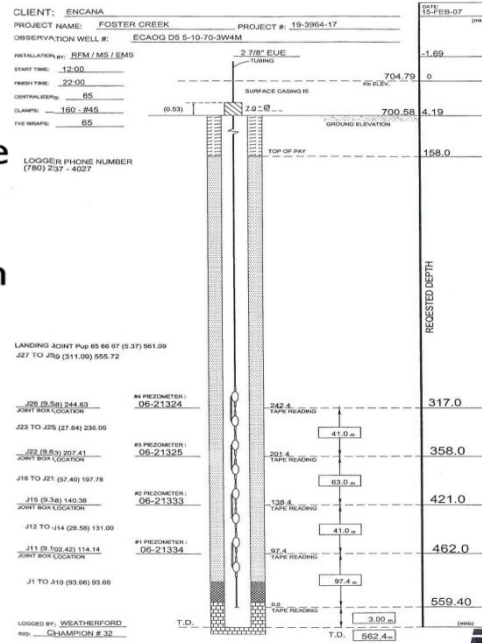
Three installation types:

Cemented tubing - vibrating wire piezometers mounted on tubulars and cemented in place (14 wells)

Hanging wire – pressure / temperature gauges hung from the wellhead to about 10-15m above perforations (9 wells)

Cemented casing – High temperature Optical pressure sensors strapped and cemented to the production casing (10 wells)

8 new McMurray piezometers
installed in Q1 2014



Piezometer details

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2307	kpa
2014-05-31	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2326	kpa
2014-06-30	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2339	kpa
2014-07-31	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2354	kpa
2014-08-31	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2385	kpa
2014-09-30	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2345	kpa
2014-10-31	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2336	kpa
2014-11-30	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2387	kpa
2014-12-31	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2342	kpa
2015-01-31	100/07-22-070-03W4/00	Basal McMurray	555.0	555.0	2376	kpa
2015-02-28	100/07-22-070-03W4/00	Basal McMurray	555	555.0	2408	kpa
2015-03-31	100/07-22-070-03W4/00	Basal McMurray	555	555.0	2406	kpa
2014-04-30	102/13-21-070-04W4/00	Basal McMurray	484.7	484.7	2888	kpa
2014-05-31	102/13-21-070-04W4/00	Basal McMurray	484.7	484.7	2870	kpa
2014-11-30	102/13-21-070-04W4/00	Basal McMurray	484.7	484.7	3305	kpa
2014-12-31	102/13-21-070-04W4/00	Basal McMurray	484.7	484.7	3152	kpa
2015-01-31	102/13-21-070-04W4/00	Basal McMurray	484.7	484.7	3171	kpa
2015-02-28	102/13-21-070-04W4/00	Basal McMurray	484.7	484.7	3141	kpa
2015-03-31	102/13-21-070-04W4/00	Basal McMurray	484.7	484.7	3082	kpa
2014-04-30	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2121	kpa
2014-05-31	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2130	kpa
2014-06-30	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2138	kpa
2014-07-31	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2148	kpa
2014-08-31	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2170	kpa
2014-09-30	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2150	kpa
2014-10-31	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2139	kpa
2014-11-30	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2168	kpa
2014-12-31	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2146	kpa
2015-01-31	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2158	kpa
2015-02-28	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2176	kpa
2015-03-31	1F1/05-19-070-02W4/00	Basal McMurray	544.6	544.6	2179	kpa
2014-04-30	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2783	kpa
2014-05-31	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2782	kpa
2014-06-30	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2779	kpa
2014-07-31	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2777	kpa
2014-08-31	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2775	kpa
2014-09-30	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2774	kpa
2014-10-31	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2771	kpa
2014-11-30	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2769	kpa
2014-12-31	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2768	kpa
2015-01-31	100/10-20-070-02W4/02	Basal McMurray	592.0	592.0	2767	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3348	kpa
2014-07-31	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3374	kpa
2014-08-31	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3330	kpa
2014-09-30	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3295	kpa
2014-10-31	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3310	kpa
2014-11-30	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3353	kpa
2014-12-31	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	2526	kpa
2015-01-31	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3320	kpa
2015-02-28	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3389	kpa
2015-03-31	100/15-12-070-04W4/00	Basal McMurray	517.9	517.9	3383	kpa
2014-04-30	100/08-08-070-03W4/00	Basal McMurray	529	529	3357	kpa
2014-04-30	100/08-32-070-05W4/00	L Grand Rapids	358	358	1783	kpa
2014-05-31	100/08-32-070-05W4/00	L Grand Rapids	358	358	1782	kpa
2014-06-30	100/08-32-070-05W4/00	L Grand Rapids	358	358	1780	kpa
2014-07-31	100/08-32-070-05W4/00	L Grand Rapids	358	358	1778	kpa
2014-08-31	100/08-32-070-05W4/00	L Grand Rapids	358	358	1777	kpa
2014-09-30	100/08-32-070-05W4/00	L Grand Rapids	358	358	1775	kpa
2014-10-31	100/08-32-070-05W4/00	L Grand Rapids	358	358	1773	kpa
2014-11-30	100/08-32-070-05W4/00	L Grand Rapids	358	358	1771	kpa
2014-12-31	100/08-32-070-05W4/00	L Grand Rapids	358	358	1770	kpa
2015-01-31	100/08-32-070-05W4/00	L Grand Rapids	358	358	1769	kpa
2015-02-28	100/08-32-070-05W4/00	L Grand Rapids	358	358	1767	kpa
2015-03-31	100/08-32-070-05W4/00	L Grand Rapids	358	358	1766	kpa
2014-04-30	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1553	kpa
2014-05-31	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1551	kpa
2014-06-30	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1549	kpa
2014-07-31	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1548	kpa
2014-08-31	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1546	kpa
2014-09-30	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1544	kpa
2014-10-31	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1543	kpa
2014-11-30	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1542	kpa
2014-12-31	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1541	kpa
2015-01-31	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1539	kpa
2015-02-28	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1539	kpa
2015-03-31	100/11-14-070-05W4/00	L Grand Rapids	357.2	357.2	1537	kpa
2014-04-30	1F1/03-27-070-03W4/03	Clearwater	462	462	2559	kpa
2014-05-31	1F1/03-27-070-03W4/03	Clearwater	462	462	2558	kpa
2014-06-30	1F1/03-27-070-03W4/03	Clearwater	462	462	2557	kpa
2014-07-31	1F1/03-27-070-03W4/03	Clearwater	462	462	2557	kpa
2014-08-31	1F1/03-27-070-03W4/03	Clearwater	462	462	2556	kpa
2014-09-30	1F1/03-27-070-03W4/03	Clearwater	462	462	2556	kpa
2014-10-31	1F1/03-27-070-03W4/03	Clearwater	462	462	2555	kpa
2014-11-30	1F1/03-27-070-03W4/03	Clearwater	462	462	2555	kpa
2014-12-31	1F1/03-27-070-03W4/03	Clearwater	462	462	2554	kpa
2015-01-31	1F1/03-27-070-03W4/03	Clearwater	462	462	2553	kpa
2015-02-28	1F1/03-27-070-03W4/03	Clearwater	462	462	2552	kpa
2015-03-31	1F1/03-27-070-03W4/03	Clearwater	462	462	2551	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1105	kpa
2014-05-31	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1158	kpa
2014-06-30	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1125	kpa
2014-07-31	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1108	kpa
2014-08-31	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1091	kpa
2014-09-30	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1093	kpa
2014-10-31	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1092	kpa
2014-11-30	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1111	kpa
2014-12-31	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1101	kpa
2015-01-31	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1071	kpa
2015-02-28	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1035	kpa
2015-03-31	1F1/03-27-070-03W4/02	L Grand Rapids	421	421	1038	kpa
2014-04-30	1F1/03-27-070-03W4/01	Colony	358	358	1429	kpa
2014-05-31	1F1/03-27-070-03W4/01	Colony	358	358	1428	kpa
2014-06-30	1F1/03-27-070-03W4/01	Colony	358	358	1426	kpa
2014-07-31	1F1/03-27-070-03W4/01	Colony	358	358	1423	kpa
2014-08-31	1F1/03-27-070-03W4/01	Colony	358	358	1422	kpa
2014-09-30	1F1/03-27-070-03W4/01	Colony	358	358	1421	kpa
2014-10-31	1F1/03-27-070-03W4/01	Colony	358	358	1421	kpa
2014-11-30	1F1/03-27-070-03W4/01	Colony	358	358	1419	kpa
2014-12-31	1F1/03-27-070-03W4/01	Colony	358	358	1419	kpa
2015-01-31	1F1/03-27-070-03W4/01	Colony	358	358	1417	kpa
2015-02-28	1F1/03-27-070-03W4/01	Colony	358	358	1414	kpa
2015-03-31	1F1/03-27-070-03W4/01	Colony	358	358	1413	kpa
2014-04-30	1F1/03-27-070-03W4/00	Viking	317	317	2149	kpa
2014-05-31	1F1/03-27-070-03W4/00	Viking	317	317	2155	kpa
2014-06-30	1F1/03-27-070-03W4/00	Viking	317	317	2164	kpa
2014-07-31	1F1/03-27-070-03W4/00	Viking	317	317	2176	kpa
2014-08-31	1F1/03-27-070-03W4/00	Viking	317	317	2191	kpa
2014-09-30	1F1/03-27-070-03W4/00	Viking	317	317	2200	kpa
2014-10-31	1F1/03-27-070-03W4/00	Viking	317	317	2208	kpa
2014-11-30	1F1/03-27-070-03W4/00	Viking	317	317	2216	kpa
2014-12-31	1F1/03-27-070-03W4/00	Viking	317	317	2222	kpa
2015-01-31	1F1/03-27-070-03W4/00	Viking	317	317	2230	kpa
2015-02-28	1F1/03-27-070-03W4/00	Viking	317	317	2240	kpa
2015-03-31	1F1/03-27-070-03W4/00	Viking	317	317	2245	kpa
2014-04-30	1F1/05-10-070-03W4/03	Cleanwater	458	458	2349	kpa
2014-05-31	1F1/05-10-070-03W4/03	Cleanwater	458	458	2349	kpa
2014-06-30	1F1/05-10-070-03W4/03	Cleanwater	458	458	2349	kpa
2014-07-31	1F1/05-10-070-03W4/03	Cleanwater	458	458	2348	kpa
2014-08-31	1F1/05-10-070-03W4/03	Cleanwater	458	458	2348	kpa
2014-09-30	1F1/05-10-070-03W4/03	Cleanwater	458	458	2348	kpa
2014-10-31	1F1/05-10-070-03W4/03	Cleanwater	458	458	2347	kpa
2014-11-30	1F1/05-10-070-03W4/03	Cleanwater	458	458	2347	kpa
2014-12-31	1F1/05-10-070-03W4/03	Cleanwater	458	458	2346	kpa
2015-01-31	1F1/05-10-070-03W4/03	Cleanwater	458	458	2346	kpa
2015-02-28	1F1/05-10-070-03W4/03	Cleanwater	458	458	2346	kpa
2015-03-31	1F1/05-10-070-03W4/03	Cleanwater	458	458	2345	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1514	kpa
2014-06-31	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1514	kpa
2014-08-30	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1517	kpa
2014-07-31	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1513	kpa
2014-08-31	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1510	kpa
2014-09-30	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1501	kpa
2014-10-31	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1499	kpa
2014-11-30	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1503	kpa
2014-12-31	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1493	kpa
2015-01-31	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1489	kpa
2015-02-28	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1484	kpa
2015-03-31	1F1/05-10-070-03W4/02	L Grand Rapids	425	425	1481	hpa
2014-04-30	1F1/05-10-070-03W4/01	Colony	360	360	56.4	kpa
2014-06-31	1F1/05-10-070-03W4/01	Colony	360	360	61.2	kpa
2014-08-30	1F1/05-10-070-03W4/01	Colony	360	360	298	kpa
2014-09-30	1F1/05-10-070-03W4/01	Colony	360	360	450	kpa
2014-10-31	1F1/05-10-070-03W4/01	Colony	360	360	545	kpa
2014-11-30	1F1/05-10-070-03W4/01	Colony	360	360	952	kpa
2014-12-31	1F1/05-10-070-03W4/01	Colony	360	360	1055	kpa
2015-01-31	1F1/05-10-070-03W4/01	Colony	360	360	969	kpa
2015-02-28	1F1/05-10-070-03W4/01	Colony	360	360	970	kpa
2015-03-31	1F1/05-10-070-03W4/01	Colony	360	360	235	hpa
2014-04-30	1F1/05-10-070-03W4/00	Viking	320	320	2144	kpa
2014-06-31	1F1/05-10-070-03W4/00	Viking	320	320	2149	kpa
2014-08-30	1F1/05-10-070-03W4/00	Viking	320	320	2153	kpa
2014-07-31	1F1/05-10-070-03W4/00	Viking	320	320	2158	kpa
2014-08-31	1F1/05-10-070-03W4/00	Viking	320	320	2161	kpa
2014-09-30	1F1/05-10-070-03W4/00	Viking	320	320	2163	kpa
2014-10-31	1F1/05-10-070-03W4/00	Viking	320	320	2168	kpa
2014-11-30	1F1/05-10-070-03W4/00	Viking	320	320	2172	kpa
2014-12-31	1F1/05-10-070-03W4/00	Viking	320	320	2176	kpa
2015-01-31	1F1/05-10-070-03W4/00	Viking	320	320	2180	kpa
2015-02-28	1F1/05-10-070-03W4/00	Viking	320	320	2183	kpa
2015-03-31	1F1/05-10-070-03W4/00	Viking	320	320	2188	kpa
2014-04-30	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1562	kpa
2014-06-31	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1563	kpa
2014-08-30	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1562	kpa
2014-07-31	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1558	kpa
2014-08-31	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1558	kpa
2014-09-30	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1558	kpa
2014-10-31	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1556	kpa
2014-11-30	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1561	kpa
2014-12-31	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1559	kpa
2015-01-31	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1557	kpa
2015-02-28	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1556	kpa
2015-03-31	1AA or 103 13-29-70-03W5	Cleanwater	403.6	403.6	1547	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1184	kpa
2014-05-31	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1191	kpa
2014-06-30	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1194	kpa
2014-07-31	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1184	kpa
2014-08-31	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1178	kpa
2014-09-30	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1183	kpa
2014-10-31	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1171	kpa
2014-11-30	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1177	kpa
2014-12-31	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1171	kpa
2015-01-31	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1159	kpa
2015-02-28	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1144	kpa
2015-03-31	1AA or 103 13-29-70-03W5	Grand Rapids	365	365	1138	kpa
2014-04-30	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3309	kpa
2014-05-31	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3310	kpa
2014-06-30	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3310	kpa
2014-07-31	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3311	kpa
2014-08-31	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3311	kpa
2014-09-30	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3311	kpa
2014-10-31	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3314	kpa
2014-11-30	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3317	kpa
2014-12-31	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3321	kpa
2015-01-31	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3320	kpa
2015-02-28	1AA/08-11-070-06W4/03	Basal McMurray	568	568	3330	kpa
2014-04-30	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2977	kpa
2014-05-31	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2978	kpa
2014-06-30	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2979	kpa
2014-07-31	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2980	kpa
2014-08-31	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2981	kpa
2014-09-30	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2981	kpa
2014-10-31	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2984	kpa
2014-11-30	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2988	kpa
2014-12-31	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2992	kpa
2015-01-31	1AA/08-11-070-06W4/02	Basal McMurray	540	540	2997	kpa
2015-02-28	1AA/08-11-070-06W4/02	Basal McMurray	540	540	3002	kpa
2014-04-30	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2951	kpa
2014-05-31	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2951	kpa
2014-06-30	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2951	kpa
2014-07-31	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2952	kpa
2014-08-31	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2953	kpa
2014-09-30	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2953	kpa
2014-10-31	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2955	kpa
2014-11-30	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2959	kpa
2014-12-31	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2964	kpa
2015-01-31	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2969	kpa
2015-02-28	1AA/08-11-070-06W4/01	Basal McMurray	533	533	2973	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2024	kpa
2014-05-31	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2023	kpa
2014-06-30	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2022	kpa
2014-07-31	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2020	kpa
2014-08-31	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2019	kpa
2014-09-30	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2017	kpa
2014-10-31	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2015	kpa
2014-11-30	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2014	kpa
2014-12-31	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2013	kpa
2015-01-31	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2011	kpa
2015-02-28	1AA/08-11-070-08W4/00	L Grand Rapids	404	404	2010	kpa
2014-04-30	100/02-21-070-04W4/00	Colorado Shale	241	241	3745	kpa
2014-05-31	100/02-21-070-04W4/00	Colorado Shale	241	241	3712	kpa
2014-06-30	100/02-21-070-04W4/00	Colorado Shale	241	241	3741	kpa
2014-07-31	100/02-21-070-04W4/00	Colorado Shale	241	241	3710	kpa
2014-08-31	100/02-21-070-04W4/00	Colorado Shale	241	241	3750	kpa
2014-09-30	100/02-21-070-04W4/00	Colorado Shale	241	241	3758	kpa
2014-10-31	100/02-21-070-04W4/00	Colorado Shale	241	241	3764	kpa
2014-11-30	100/02-21-070-04W4/00	Colorado Shale	241	241	3770	kpa
2014-12-31	100/02-21-070-04W4/00	Colorado Shale	241	241	3777	kpa
2015-01-31	100/02-21-070-04W4/00	Colorado Shale	241	241	3777	kpa
2015-02-28	100/02-21-070-04W4/00	Colorado Shale	241	241	3778	kpa
2015-03-31	100/02-21-070-04W4/00	Colorado Shale	241	241	3775	kpa
2014-04-30	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3168	kpa
2014-05-31	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3145	kpa
2014-06-30	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3142	kpa
2014-07-31	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3180	kpa
2014-08-31	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3447	kpa
2014-09-30	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3605	kpa
2014-10-31	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3687	kpa
2014-11-30	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3696	kpa
2014-12-31	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3426	kpa
2015-01-31	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3482	kpa
2015-02-28	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3447	kpa
2015-03-31	1AB/07-20-070-04W4/03	Basal McMurray	525	584.98	3375	kpa
2014-04-30	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3137	kpa
2014-05-31	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3099	kpa
2014-06-30	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3093	kpa
2014-07-31	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3175	kpa
2014-08-31	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3656	kpa
2014-09-30	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3769	kpa
2014-10-31	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3811	kpa
2014-11-30	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3770	kpa
2014-12-31	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3427	kpa
2015-01-31	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3509	kpa
2015-02-28	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3434	kpa
2015-03-31	1AB/07-20-070-04W4/02	Basal McMurray	508.73	565.97	3334	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3112	kpa
2014-05-31	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3065	kpa
2014-06-30	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3063	kpa
2014-07-31	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3110	kpa
2014-08-31	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3525	kpa
2014-09-30	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3667	kpa
2014-10-31	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3717	kpa
2014-11-30	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3721	kpa
2014-12-31	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3417	kpa
2015-01-31	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3448	kpa
2015-02-28	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3393	kpa
2015-03-31	1AB/07-20-070-04W4/01	Basal McMurray	492.14	556.79	3318	kpa
2014-04-30	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1616	kpa
2014-05-31	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1614	kpa
2014-06-30	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1613	kpa
2014-07-31	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1611	kpa
2014-08-31	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1609	kpa
2014-09-30	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1607	kpa
2014-10-31	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1605	kpa
2014-11-30	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1602	kpa
2014-12-31	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1602	kpa
2015-01-31	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1600	kpa
2015-02-28	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1599	kpa
2015-03-31	1AB/07-20-070-04W4/00	L Grand Rapids	355.15	389.67	1598	kpa
2014-04-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2753	kpa
2014-05-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2752	kpa
2014-06-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2753	kpa
2014-07-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2755	kpa
2014-08-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2824	kpa
2014-09-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2831	kpa
2014-10-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2874	kpa
2014-11-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2882	kpa
2014-12-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2876	kpa
2015-01-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2877	kpa
2015-02-28	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2874	kpa
2015-03-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2868	kpa
2014-04-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2810	kpa
2014-05-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2812	kpa
2014-06-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2814	kpa
2014-07-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2816	kpa
2014-08-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2825	kpa
2014-09-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2849	kpa
2014-10-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2872	kpa
2014-11-30	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2898	kpa
2014-12-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2919	kpa
2015-01-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2933	kpa
2015-02-28	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2940	kpa
2015-03-31	102/09-23-070-05W4/03	Basal McMurray	493.8	591	2937	kpa
2014-04-30	102/09-23-070-05W4/03	Basal McMurray	515	620	3051	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-05-31	102/09-23-070-05W4/03	Basal McMurray	515	620	3050	kpa
2014-06-30	102/09-23-070-05W4/03	Basal McMurray	515	620	3050	kpa
2014-07-31	102/09-23-070-05W4/03	Basal McMurray	515	620	3052	kpa
2014-08-31	102/09-23-070-05W4/03	Basal McMurray	515	620	3079	kpa
2014-09-30	102/09-23-070-05W4/03	Basal McMurray	515	620	3115	kpa
2014-10-31	102/09-23-070-05W4/03	Basal McMurray	515	620	3138	kpa
2014-11-30	102/09-23-070-05W4/03	Basal McMurray	515	620	3156	kpa
2014-12-31	102/09-23-070-05W4/03	Basal McMurray	515	620	3161	kpa
2015-01-31	102/09-23-070-05W4/03	Basal McMurray	515	620	3171	kpa
2015-02-28	102/09-23-070-05W4/03	Basal McMurray	515	620	3170	kpa
2015-03-31	102/09-23-070-05W4/03	Basal McMurray	515	620	3158	kpa
2014-04-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2589	kpa
2014-05-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2591	kpa
2014-06-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2593	kpa
2014-07-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2595	kpa
2014-08-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2597	kpa
2014-09-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2600	kpa
2014-10-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2606	kpa
2014-11-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2614	kpa
2014-12-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2626	kpa
2015-01-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2640	kpa
2015-02-28	102/11-23-070-05W4/00	Basal McMurray	480	560	2647	kpa
2015-03-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2654	kpa
2014-04-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2853	kpa
2014-05-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2855	kpa
2014-06-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2856	kpa
2014-07-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2857	kpa
2014-08-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2873	kpa
2014-09-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2905	kpa
2014-10-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2940	kpa
2014-11-30	102/11-23-070-05W4/00	Basal McMurray	480	560	2991	kpa
2014-12-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2986	kpa
2015-01-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2978	kpa
2015-02-28	102/11-23-070-05W4/00	Basal McMurray	480	560	2975	kpa
2015-03-31	102/11-23-070-05W4/00	Basal McMurray	480	560	2972	kpa
2014-04-30	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3217	kpa
2014-05-31	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3220	kpa
2014-06-30	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3222	kpa
2014-07-31	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3226	kpa
2014-08-31	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3244	kpa
2014-09-30	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3276	kpa
2014-10-31	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3298	kpa
2014-11-30	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3319	kpa
2014-12-31	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3332	kpa
2015-01-31	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3345	kpa
2015-02-28	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3356	kpa
2015-03-31	102/11-23-070-05W4/00	Basal McMurray	522.3	622	3361	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	102/12-19-070-04W4/00	Basal McMurray	484.1	573	2783	kpa
2014-05-31	102/12-19-070-04W4/00	Basal McMurray	484.1	573	2784	kpa
2014-06-30	102/12-19-070-04W4/00	Basal McMurray	484.1	573	2786	kpa
2014-07-31	102/12-19-070-04W4/00	Basal McMurray	484.1	573	2798	kpa
2014-08-31	102/12-19-070-04W4/00	Basal McMurray	484.1	573	3017	kpa
2014-09-30	102/12-19-070-04W4/00	Basal McMurray	484.1	573	3264	kpa
2014-10-31	102/12-19-070-04W4/00	Basal McMurray	484.1	573	3379	kpa
2014-11-30	102/12-19-070-04W4/00	Basal McMurray	484.1	573	4722	kpa
2014-12-31	102/12-19-070-04W4/00	Basal McMurray	484.1	573	6001	kpa
2015-01-31	102/12-19-070-04W4/00	Basal McMurray	484.1	573	5705	kpa
2015-02-28	102/12-19-070-04W4/00	Basal McMurray	484.1	573	5171	kpa
2015-03-31	102/12-19-070-04W4/00	Basal McMurray	484.1	573	4398	kpa
2014-04-30	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	2925	kpa
2014-05-31	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	2925	kpa
2014-06-30	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	2927	kpa
2014-07-31	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	2938	kpa
2014-08-31	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	3168	kpa
2014-09-30	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	3409	kpa
2014-10-31	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	3521	kpa
2014-11-30	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	4958	kpa
2014-12-31	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	6217	kpa
2015-01-31	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	5759	kpa
2015-02-28	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	5258	kpa
2015-03-31	102/12-19-070-04W4/00	Basal McMurray	494.4	587.3	4498	kpa
2014-04-30	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3073	kpa
2014-05-31	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3074	kpa
2014-06-30	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3076	kpa
2014-07-31	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3084	kpa
2014-08-31	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3159	kpa
2014-09-30	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3227	kpa
2014-10-31	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3241	kpa
2014-11-30	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3262	kpa
2014-12-31	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3288	kpa
2015-01-31	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3269	kpa
2015-02-28	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3238	kpa
2015-03-31	102/12-19-070-04W4/00	Basal McMurray	504.5	601.25	3211	kpa
2014-04-30	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2880	kpa
2014-05-31	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2881	kpa
2014-06-30	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2881	kpa
2014-07-31	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2882	kpa
2014-08-31	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2884	kpa
2014-09-30	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2870	kpa
2014-10-31	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2878	kpa
2014-11-30	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2887	kpa
2014-12-31	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2895	kpa
2015-01-31	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2903	kpa
2015-02-28	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2909	kpa
2015-03-31	102/05-13-070-05W4/04	Basal McMurray	504.5	601	2913	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	102/05-13-070-05W4/04	Basal McMurray	510	609	2912	kpa
2014-06-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2913	kpa
2014-08-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2914	kpa
2014-07-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2915	kpa
2014-08-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2919	kpa
2014-09-30	102/05-13-070-05W4/04	Basal McMurray	510	609	2930	kpa
2014-10-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2940	kpa
2014-11-30	102/05-13-070-05W4/04	Basal McMurray	510	609	2951	kpa
2014-12-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2959	kpa
2015-01-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2966	kpa
2015-02-28	102/05-13-070-05W4/04	Basal McMurray	510	609	2972	kpa
2015-03-31	102/05-13-070-05W4/04	Basal McMurray	510	609	2977	kpa
2014-04-30	102/05-13-070-05W4/04	Basal McMurray	520	624	3102	kpa
2014-05-31	102/05-13-070-05W4/04	Basal McMurray	520	624	3105	kpa
2014-06-30	102/05-13-070-05W4/04	Basal McMurray	520	624	3110	kpa
2014-07-31	102/05-13-070-05W4/04	Basal McMurray	520	624	3114	kpa
2014-08-31	102/05-13-070-05W4/04	Basal McMurray	520	624	3142	kpa
2014-09-30	102/05-13-070-05W4/04	Basal McMurray	520	624	3167	kpa
2014-10-31	102/05-13-070-05W4/04	Basal McMurray	520	624	3185	kpa
2014-11-30	102/05-13-070-05W4/04	Basal McMurray	520	624	3207	kpa
2014-12-31	102/05-13-070-05W4/04	Basal McMurray	520	624	3212	kpa
2015-01-31	102/05-13-070-05W4/04	Basal McMurray	520	624	3217	kpa
2015-02-28	102/05-13-070-05W4/04	Basal McMurray	520	624	3217	kpa
2015-03-31	102/05-13-070-05W4/04	Basal McMurray	520	624	3209	kpa
2014-04-30	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	2900	kpa
2014-05-31	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	2896	kpa
2014-06-30	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	2895	kpa
2014-07-31	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	2898	kpa
2014-08-31	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3021	kpa
2014-09-30	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3215	kpa
2014-10-31	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3331	kpa
2014-11-30	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3380	kpa
2014-12-31	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3307	kpa
2015-01-31	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3268	kpa
2015-02-28	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3269	kpa
2015-03-31	104/12-20-070-04W4/02	Basal McMurray	487.2	608.3	3237	kpa
2014-04-30	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3048	kpa
2014-05-31	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3036	kpa
2014-06-30	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3035	kpa
2014-07-31	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3057	kpa
2014-08-31	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3301	kpa
2014-09-30	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3477	kpa
2014-10-31	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3554	kpa
2014-11-30	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3544	kpa
2014-12-31	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3379	kpa
2015-01-31	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3377	kpa
2015-02-28	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3373	kpa
2015-03-31	104/12-20-070-04W4/02	Basal McMurray	494.3	619.4	3303	kpa
2014-04-30	104/12-20-070-04W4/02	Basal McMurray	499.2	627.35	3057	kpa
2014-05-31	104/12-20-070-04W4/02	Basal McMurray	499.2	627.35	3047	kpa
2014-06-30	104/12-20-070-04W4/02	Basal McMurray	499.2	627.35	3050	kpa
2014-07-31	104/12-20-070-04W4/02	Basal McMurray	499.2	627.35	3093	kpa

Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2771	kpa
2014-05-31	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2773	kpa
2014-06-30	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2774	kpa
2014-07-31	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2776	kpa
2014-08-31	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2776	kpa
2014-09-30	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2780	kpa
2014-10-31	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2789	kpa
2014-11-30	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2796	kpa
2014-12-31	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2809	kpa
2015-01-31	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2827	kpa
2015-02-28	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2833	kpa
2015-03-31	100/13-13-070-05W4/03	Basal McMurray	494.6	603.5	2871	kpa
2014-04-30	100/13-13-070-05W4/03	Basal McMurray	502.1	615	2996	kpa
2014-05-31	100/13-13-070-05W4/03	Basal McMurray	502.1	615	2999	kpa
2014-06-30	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3000	kpa
2014-07-31	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3002	kpa
2014-08-31	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3032	kpa
2014-09-30	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3070	kpa
2014-10-31	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3093	kpa
2014-11-30	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3110	kpa
2014-12-31	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3113	kpa
2015-01-31	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3118	kpa
2015-02-28	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3114	kpa
2015-03-31	100/13-13-070-05W4/03	Basal McMurray	502.1	615	3106	kpa
2014-04-30	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2846	kpa
2014-05-31	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2849	kpa
2014-06-30	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2851	kpa
2014-07-31	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2852	kpa
2014-08-31	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2856	kpa
2014-09-30	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2868	kpa
2014-10-31	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2883	kpa
2014-11-30	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2896	kpa
2014-12-31	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2910	kpa
2015-01-31	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2927	kpa
2015-02-28	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2931	kpa
2015-03-31	100/13-13-070-05W4/03	Basal McMurray	516.4	637	2938	kpa
2014-04-30	102/10-14-070-05W4/02	Basal McMurray	500	614.5	2928	kpa
2014-05-31	102/10-14-070-05W4/02	Basal McMurray	500	614.5	2929	kpa
2014-06-30	102/10-14-070-05W4/02	Basal McMurray	500	614.5	2930	kpa
2014-07-31	102/10-14-070-05W4/02	Basal McMurray	500	614.5	2932	kpa
2014-08-31	102/10-14-070-05W4/02	Basal McMurray	500	614.5	2942	kpa
2014-09-30	102/10-14-070-05W4/02	Basal McMurray	500	614.5	2967	kpa
2014-10-31	102/10-14-070-05W4/02	Basal McMurray	500	614.5	2988	kpa
2014-11-30	102/10-14-070-05W4/02	Basal McMurray	500	614.5	3004	kpa
2014-12-31	102/10-14-070-05W4/02	Basal McMurray	500	614.5	3015	kpa
2015-01-31	102/10-14-070-05W4/02	Basal McMurray	500	614.5	3021	kpa
2015-02-28	102/10-14-070-05W4/02	Basal McMurray	500	614.5	3026	kpa

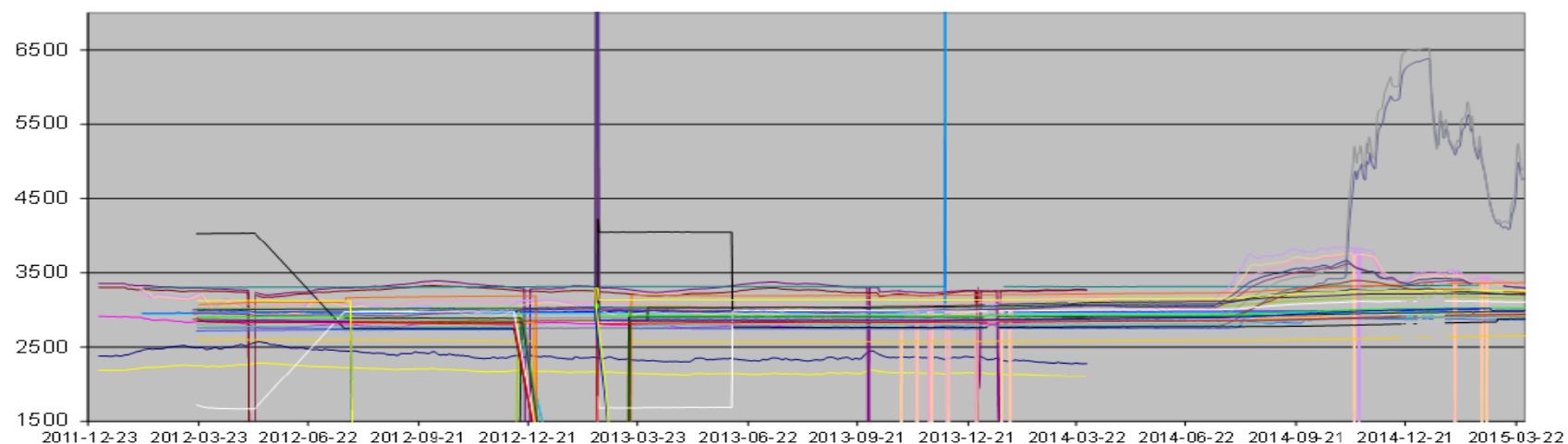
Piezometer details continued

Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2015-03-31	102/10-14-070-05W4/02	Basal McMurray	500	614.5	3025	kpa
2014-04-30	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2852	kpa
2014-05-31	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2857	kpa
2014-06-30	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2851	kpa
2014-07-31	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2857	kpa
2014-08-31	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2910	kpa
2014-09-30	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2937	kpa
2014-10-31	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2962	kpa
2014-11-30	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2983	kpa
2014-12-31	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2997	kpa
2015-01-31	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	3007	kpa
2015-02-28	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	3015	kpa
2015-03-31	102/10-14-070-05W4/02	Basal McMurray	505.7	623.5	2993	kpa
2014-04-30	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3147	kpa
2014-05-31	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3149	kpa
2014-06-30	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3151	kpa
2014-07-31	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3154	kpa
2014-08-31	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3178	kpa
2014-09-30	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3212	kpa
2014-10-31	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3234	kpa
2014-11-30	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3250	kpa
2014-12-31	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3255	kpa
2015-01-31	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3261	kpa
2015-02-28	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3262	kpa
2015-03-31	102/10-14-070-05W4/02	Basal McMurray	526.5	680	3258	kpa
2014-04-30	102/01-20-070-05W4/02	Basal McMurray	526	526	3108	kpa
2014-05-31	102/01-20-070-05W4/02	Basal McMurray	526	526	3107	kpa
2014-06-30	102/01-20-070-05W4/02	Basal McMurray	526	526	3108	kpa
2014-07-31	102/01-20-070-05W4/02	Basal McMurray	526	526	3109	kpa
2014-08-31	102/01-20-070-05W4/02	Basal McMurray	526	526	3112	kpa
2014-09-30	102/01-20-070-05W4/02	Basal McMurray	526	526	3119	kpa
2014-10-31	102/01-20-070-05W4/02	Basal McMurray	526	526	3128	kpa
2014-11-30	102/01-20-070-05W4/02	Basal McMurray	526	526	3139	kpa
2014-12-31	102/01-20-070-05W4/02	Basal McMurray	526	526	3147	kpa
2015-01-31	102/01-20-070-05W4/02	Basal McMurray	526	526	3154	kpa
2015-02-28	102/01-20-070-05W4/02	Basal McMurray	526	526	3159	kpa
2015-03-31	102/01-20-070-05W4/02	Basal McMurray	526	526	3160	kpa
2014-04-30	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3017	kpa
2014-05-31	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3017	kpa
2014-06-30	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3018	kpa
2014-07-31	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3018	kpa
2014-08-31	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3021	kpa
2014-09-30	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3029	kpa
2014-10-31	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3035	kpa
2014-11-30	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3052	kpa
2014-12-31	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3060	kpa
2015-01-31	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3067	kpa
2015-02-28	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3072	kpa
2015-03-31	102/01-20-070-05W4/01	Basal McMurray	516.5	516.5	3073	kpa

Piezometer details continued

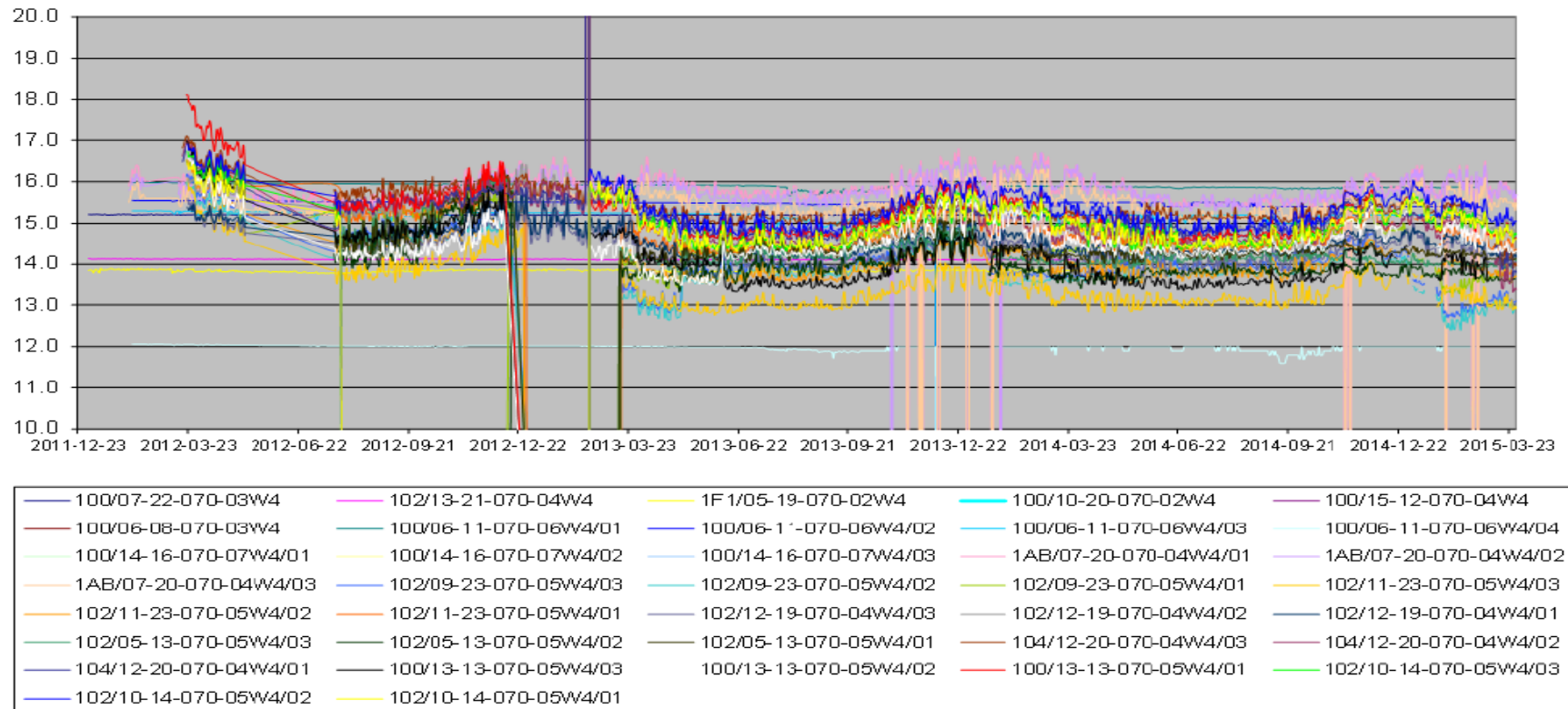
Date	UWI	Fluids / Zones	TVD (mKB)	MD (mKB)	Reported Value	Units
2014-04-30	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2730	kpa
2014-05-31	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2731	kpa
2014-06-30	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2732	kpa
2014-07-31	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2731	kpa
2014-08-31	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2737	kpa
2014-09-30	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2742	kpa
2014-10-31	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2745	kpa
2014-11-30	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2753	kpa
2014-12-31	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2757	kpa
2015-01-31	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2761	kpa
2015-02-28	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2765	kpa
2015-03-31	102/01-20-070-05W4/00	Basal McMurray	491.8	491.8	2764	kpa
2014-04-30	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3139	kpa
2014-05-31	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3139	kpa
2014-06-30	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3139	kpa
2014-07-31	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3140	kpa
2014-08-31	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3147	kpa
2014-09-30	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3164	kpa
2014-10-31	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3177	kpa
2014-11-30	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3192	kpa
2014-12-31	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3201	kpa
2015-01-31	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3207	kpa
2015-02-28	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3210	kpa
2015-03-31	1AB/03-27-070-05W4/02	Basal McMurray	526.8	526.8	3208	kpa
2014-04-30	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2929	kpa
2014-05-31	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2929	kpa
2014-06-30	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2929	kpa
2014-07-31	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2929	kpa
2014-08-31	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2936	kpa
2014-09-30	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2953	kpa
2014-10-31	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2969	kpa
2014-11-30	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2965	kpa
2014-12-31	1AB/03-27-070-05W4/01	Basal McMurray	512	512	2994	kpa
2015-01-31	1AB/03-27-070-05W4/01	Basal McMurray	512	512	3000	kpa
2015-02-28	1AB/03-27-070-05W4/01	Basal McMurray	512	512	3003	kpa
2015-03-31	1AB/03-27-070-05W4/01	Basal McMurray	512	512	3000	kpa
2014-04-30	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2819	kpa
2014-05-31	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2820	kpa
2014-06-30	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2818	kpa
2014-07-31	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2818	kpa
2014-08-31	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2820	kpa
2014-09-30	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2826	kpa
2014-10-31	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2836	kpa
2014-11-30	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2848	kpa
2014-12-31	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2857	kpa
2015-01-31	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2864	kpa
2015-02-28	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2870	kpa
2015-03-31	1AB/03-27-070-05W4/00	Basal McMurray	495.2	495.2	2872	kpa

Foster Creek McMurray Pressures
Observation Well Piezometer Data

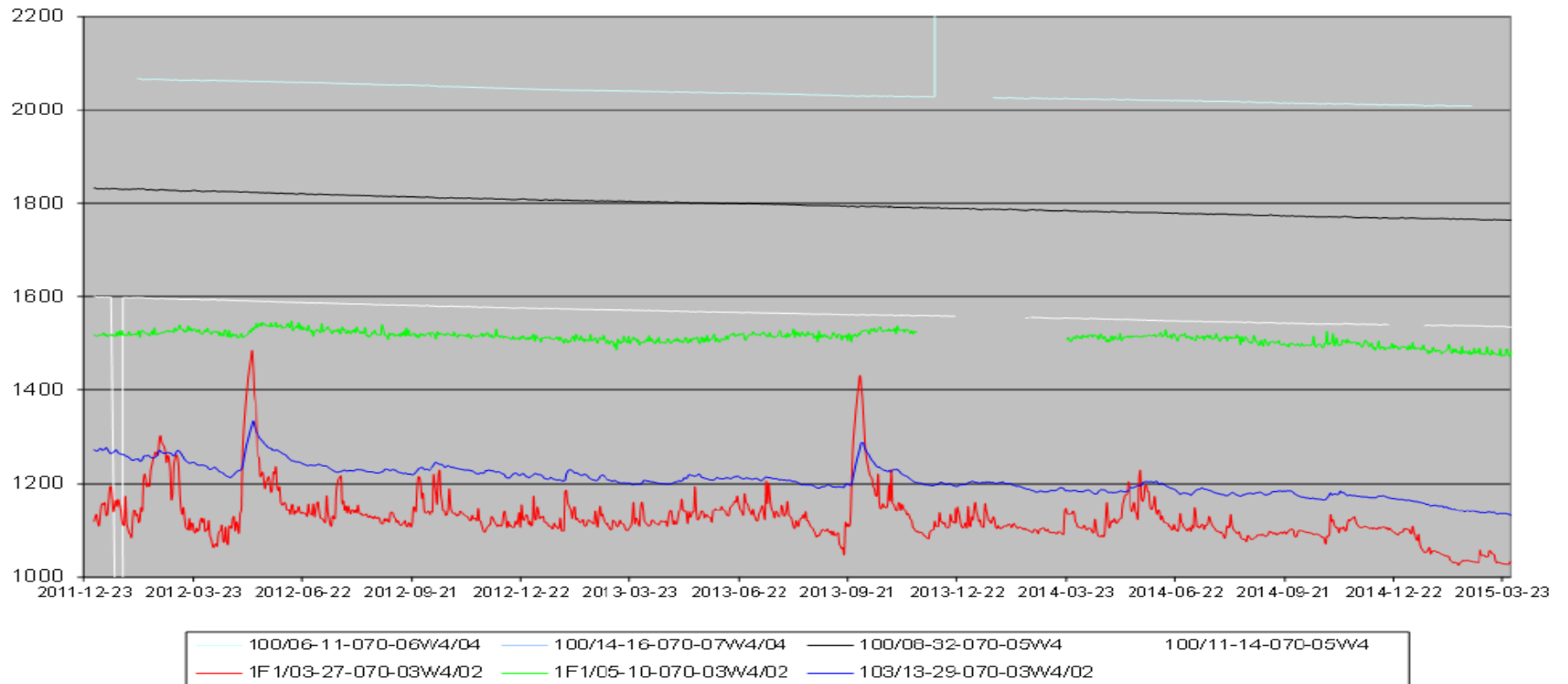


100/07-22-070-03W4	102/13-21-070-04W4	1F1/05-19-070-02W4	100/10-20-070-02W4	100/15-12-070-04W4
100/06-08-070-03W4	100/06-11-070-06W4/01	100/06-11-070-06W4/02	100/06-11-070-06W4/03	100/14-16-070-07W4/01
100/14-16-070-07W4/02	100/14-16-070-07W4/03	1AB/07-20-070-04W4/01	1AB/07-20-070-04W4/02	1AB/07-20-070-04W4/03
102/09-23-070-05W4/03	102/09-23-070-05W4/02	102/09-23-070-05W4/01	102/11-23-070-05W4/03	102/11-23-070-05W4/02
102/11-23-070-05W4/01	102/12-19-070-04W4/03	102/12-19-070-04W4/02	102/12-19-070-04W4/01	102/05-13-070-05W4/03
102/05-13-070-05W4/02	102/05-13-070-05W4/01	104/12-20-070-04W4/03	104/12-20-070-04W4/02	104/12-20-070-04W4/01
100/13-13-070-05W4/03	100/13-13-070-05W4/02	100/13-13-070-05W4/01	102/10-14-070-05W4/03	102/10-14-070-05W4/02
102/10-14-070-05W4/01				

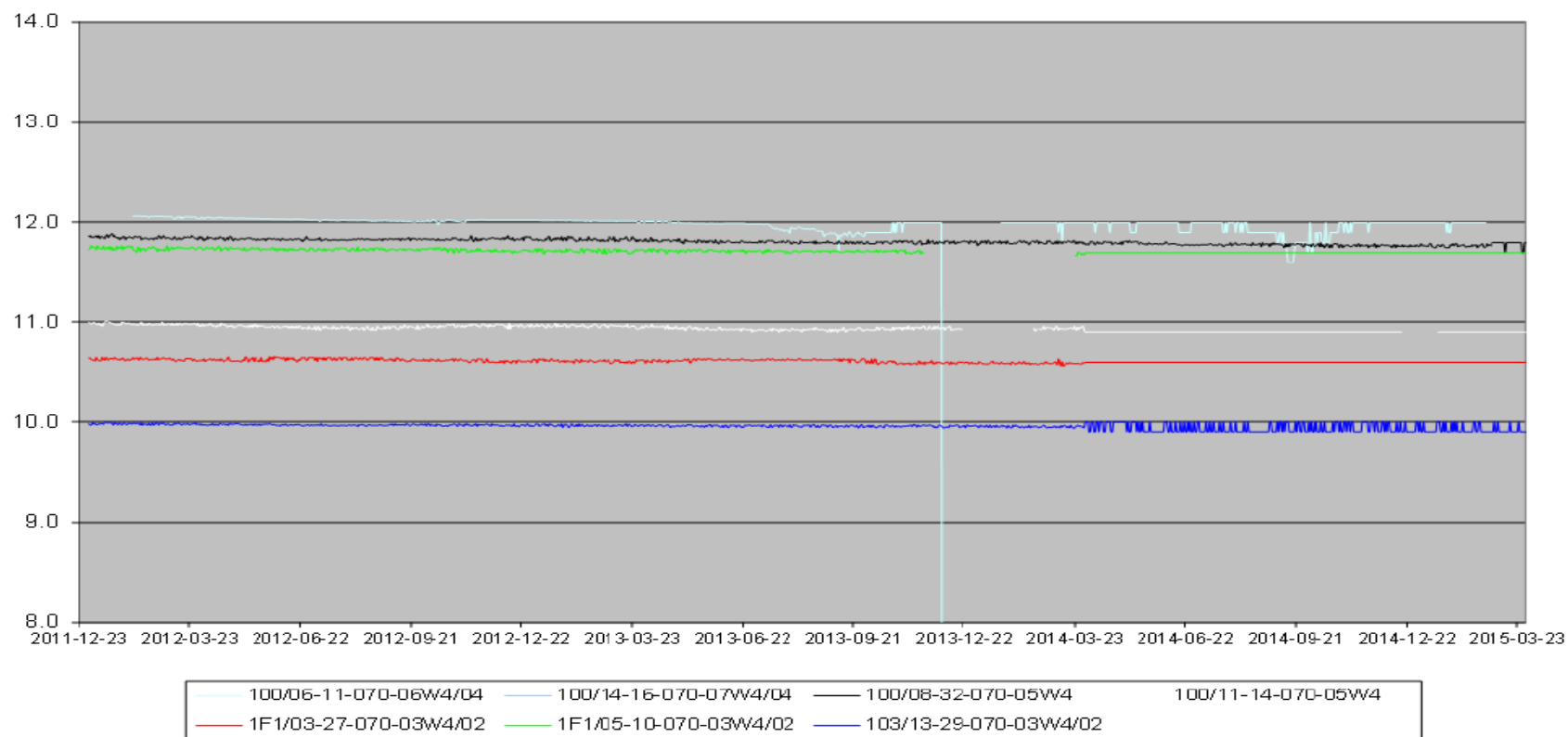
Foster Creek McMurray Temperatures
Observation Well Piezometer Data



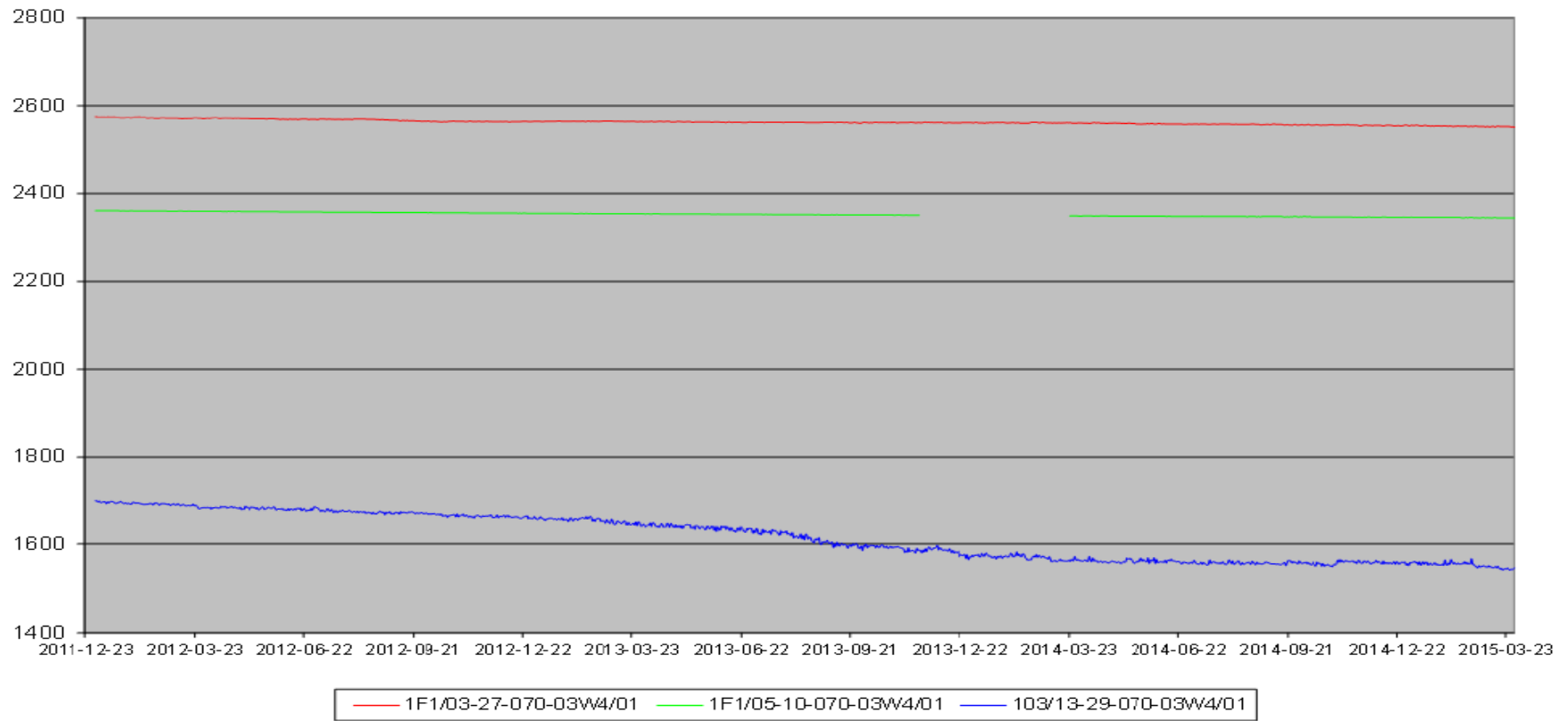
Foster Creek Grand Rapids Pressures Observation Well Piezometer Data



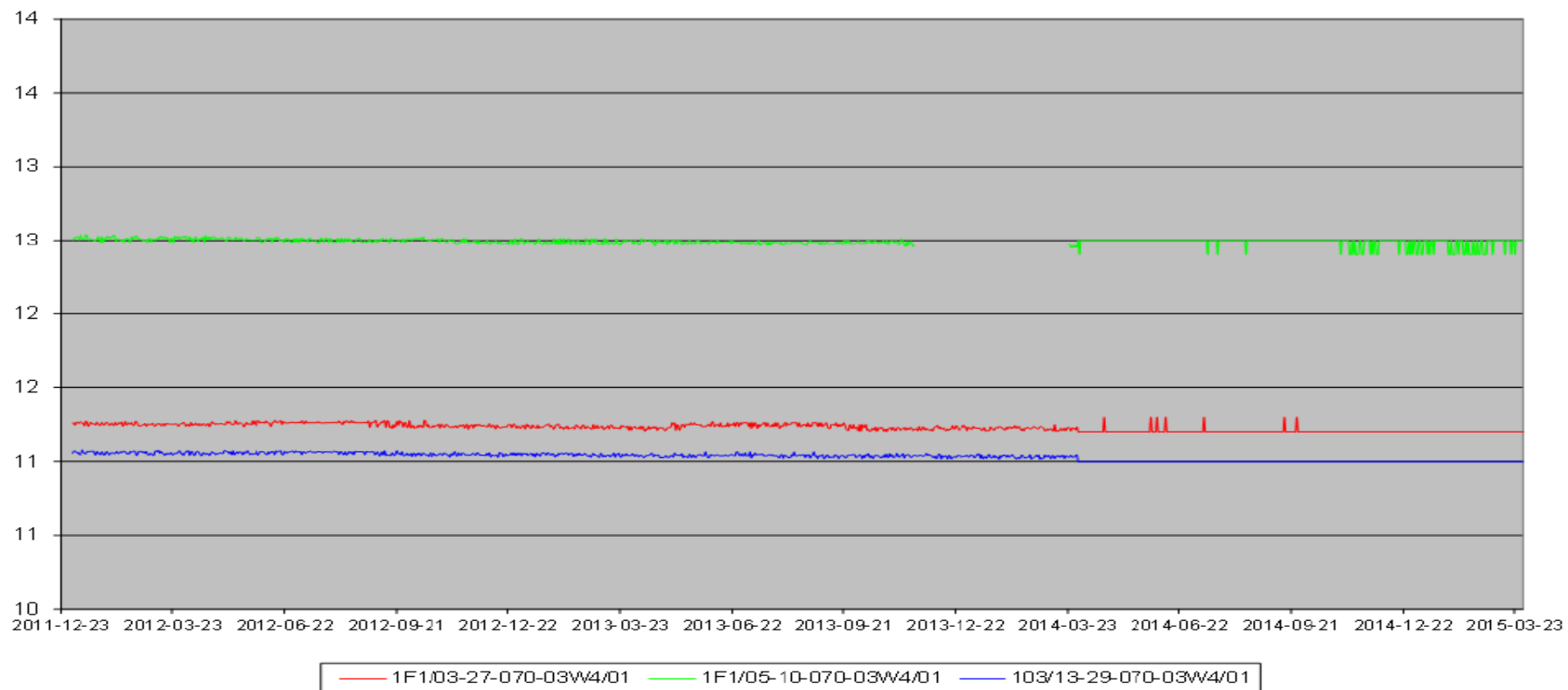
Foster Creek Grand Rapids Temperatures
Observation Well Piezometer Data



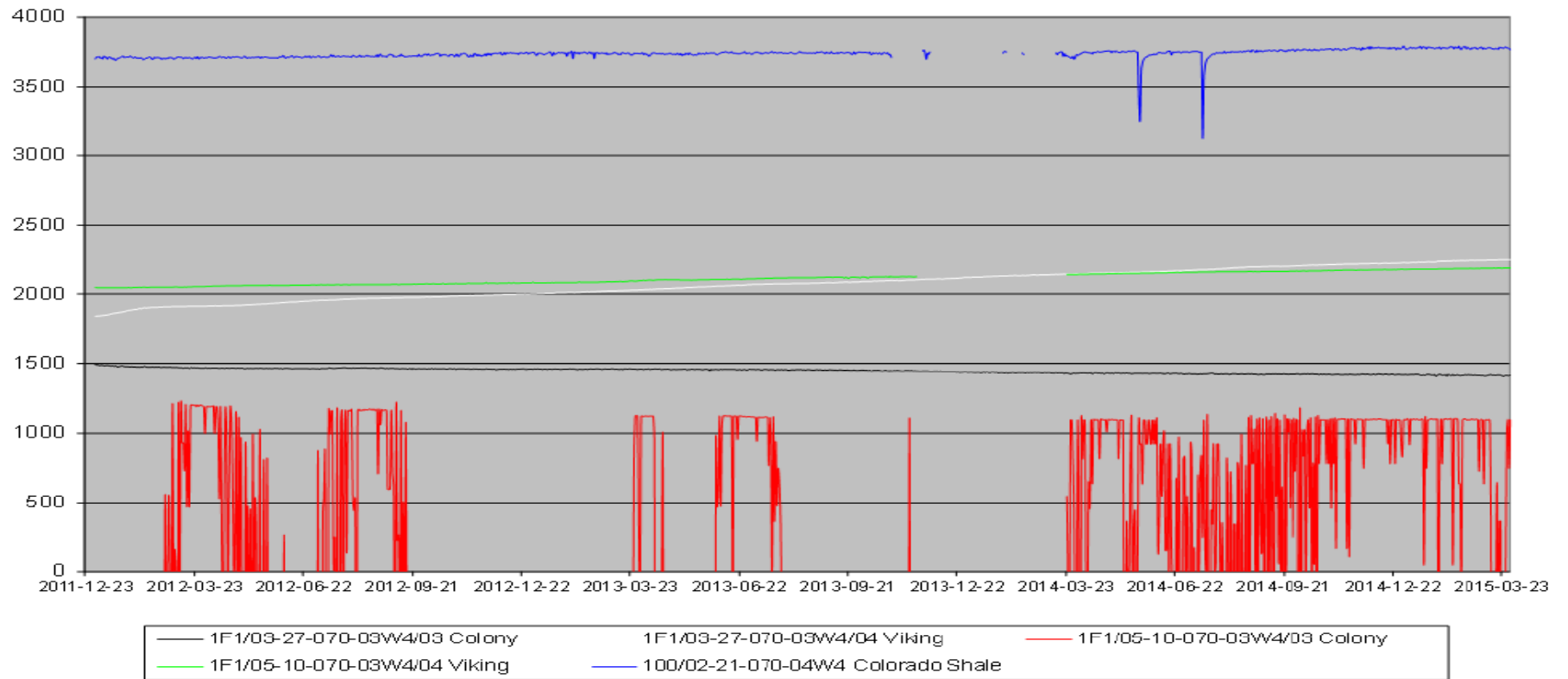
Foster Creek Clear Water Pressures
Observation Well Piezometer Data



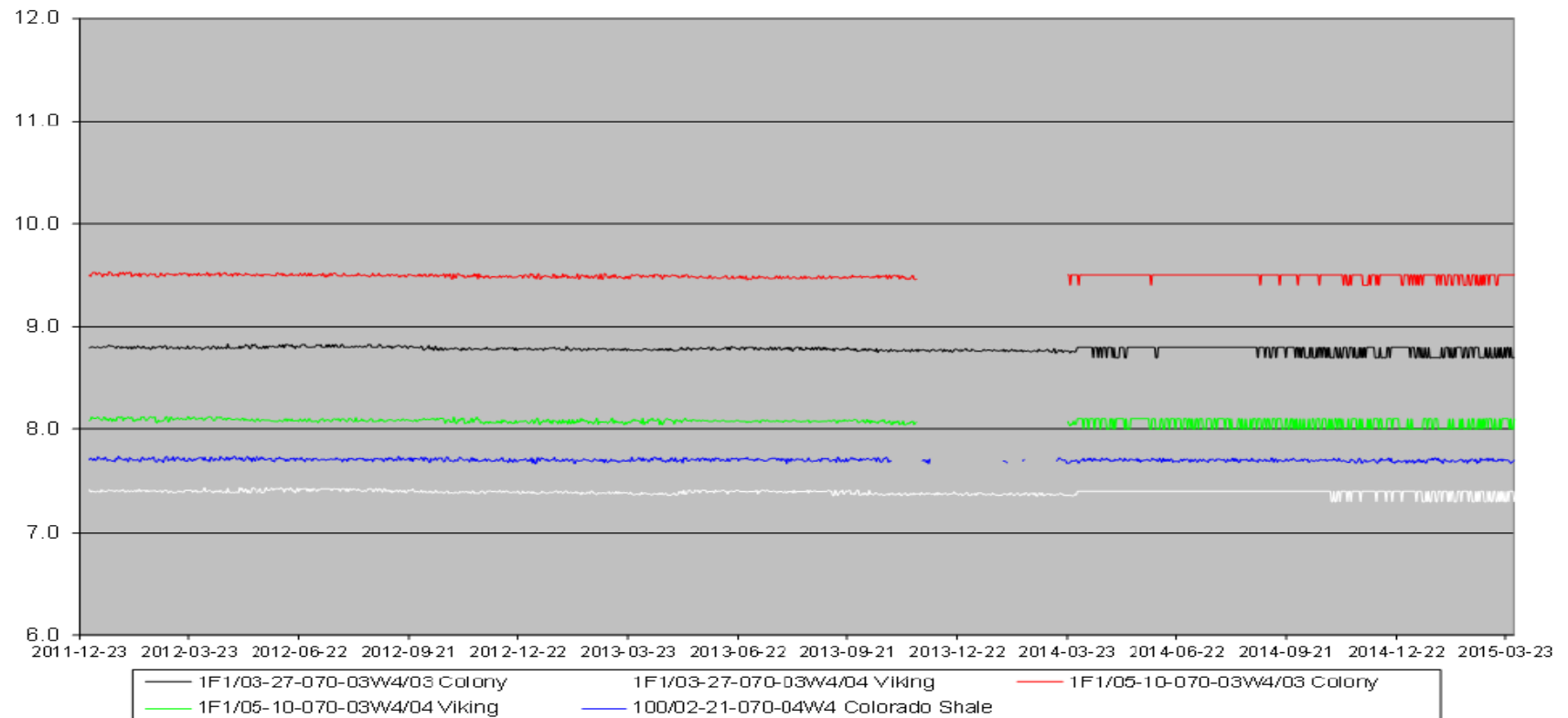
Foster Creek Clear Water Temperatures
Observation Well Piezometer Data



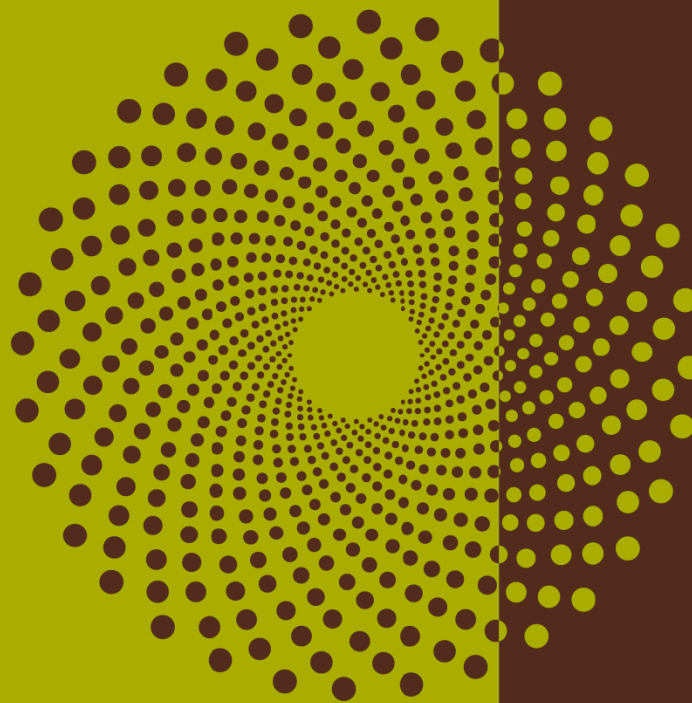
Foster Creek Misc Zones Pressures
Observation Well Piezometer Data



Foster Creek Misc Zones Temperatures
Observation Well Piezometer Data



Temperature data

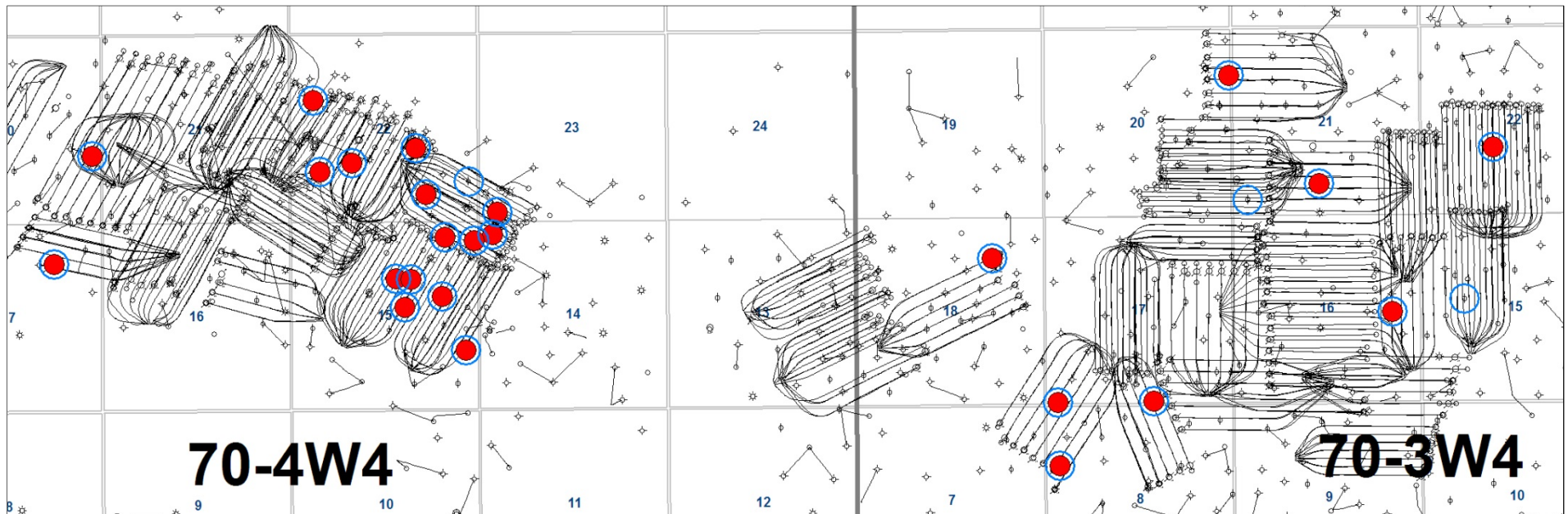


cenovus
ENERGY

Foster Creek temperature and RST data

24 observation wells logged to acquire temperature data

27 observation wells logged to acquire RST data



- Wells selected for Temperature logging
- Wells selected for RST logging

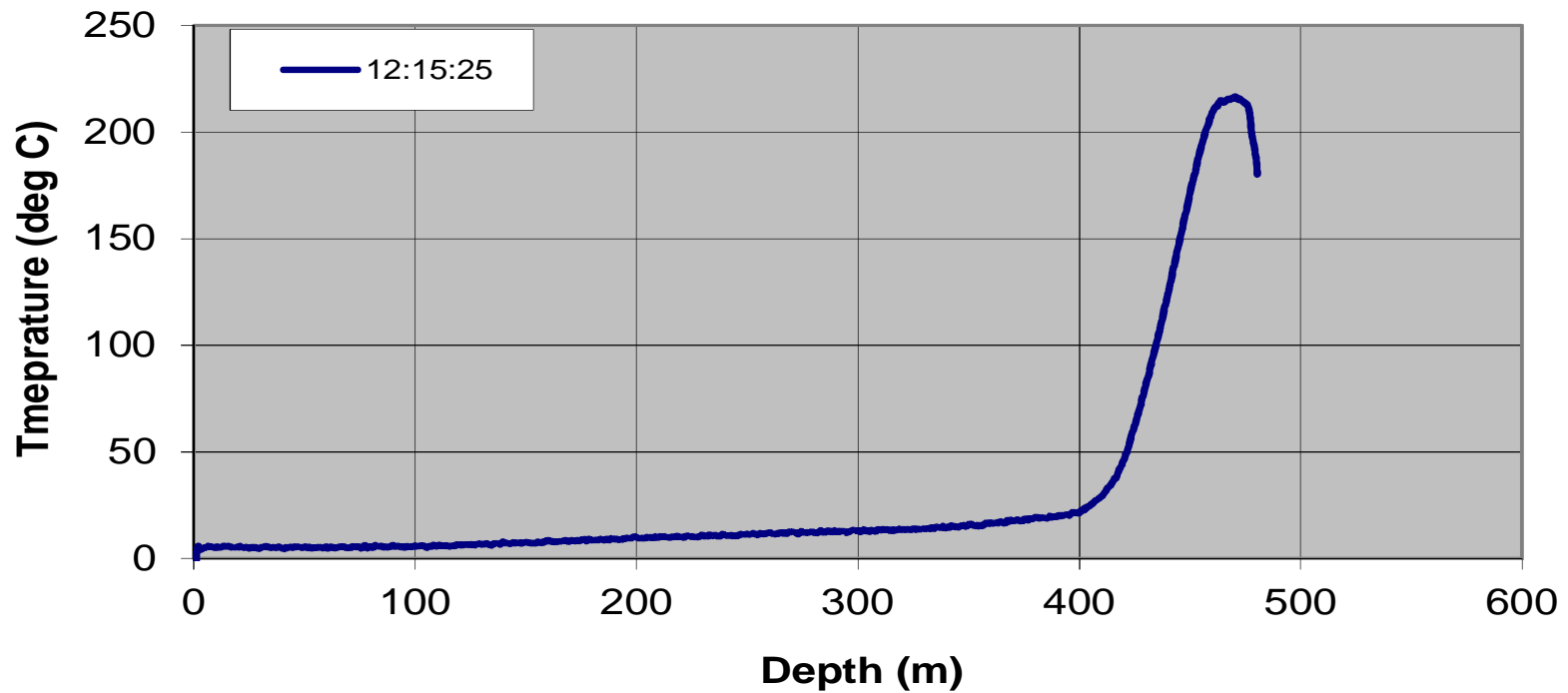
Observation well temperature data

Pad	Well Name	UWI	Location
A PAD	CVE FCCL 12C FISHER 12-22-70-4	103/12-22-070-04W4/00	AP4 TOE
A PAD	CVE FCCL 5-22 FISHER 5-22-70-4	111/05-22-070-04W4/00	AP3 HEEL
B PAD	CVE FCCL 3-21 FISHER 3-21-70-4	103/03-21-070-04W4/00	BP31 HEEL
C PAD	CVE FCCL A7 FISHER 7-22-70-4	100/07-22-070-04W4/00	CP15 TOE
C PAD	CVE FCCL B6 FISHER 6-22-70-4	102/06-22-070-04W4/00	CP11 HEEL
D PAD	CVE FCCL B4 FISHER 4-23-70-4	102/04-23-070-04W4/00	DP19 TOE
D PAD	CVE FCCL C13 FISHER 13-14-70-4	100/13-14-070-04W4/00	DP21 TOE
D PAD	CVE FCCL C16 FISHER 16-15-70-4	103/16-15-070-04W4/00	DP34 MID/GP1 TOE
D PAD	CVE FCCL D16 FISHER 16-15-70-4	102/16-15-070-04W4/00	DP22-1 MID
D PAD	CVE FCCL D2 FISHER 2-22-70-4	100/02-22-070-04W4/00	DP21 HEEL
E PAD	CVE FCCL C13 FISHER 13-15-70-4	102/13-15-070-04W4/00	EP27 MID
E02 PAD	CVE FCCL A15 FISHER 15-13-70-4	102/15-13-070-04W4/00	E02P05/E02W06 MID
E02 PAD	CVE FCCL D7 FISHER 7-13-70-4	102/07-13-070-04W4/00	E02P01 HEEL
E03 PAD	CVE FCCL C4 FISHER 4-18-70-4	102/04-18-070-03W4/00	E03W05 MID
E04 PAD	CVE FCCL A10 FISHER 10-18-70-3	100/10-18-070-03W4/00	E04P04 TOE
E04 PAD	CVE FCCL A15 FISHER 15-18-70-3	100/15-18-070-03W4/00	EP04P06 TOE
E10 PAD	CVE FCCL B2 FISHER 2-17-70-3	100/02-17-070-03W4/00	E10P02 HEEL
E12 PAD	CVE FCCL FISHER 3-17-70-3	100/03-17-070-03W4/00	E12W03 TOE
E11 PAD	CVE FCCL B4 FISHER 4-17-70-3	100/04-17-070-03W4/00	E11P04 MID
E11 PAD	CVE FCCL C12 FISHER 12-8-70-3	100/12-08-070-03W4/00	E11P07/E11P08 TOE
E12 PAD	CVE FCCL 2A15 FISHER 15-17-70-3	102/15-17-070-03W4/00	E12P09/E12W07 HEEL
E12 PAD	CVE FCCL B6 FISHER 6-17-70-3	103/06-17-070-03W4/00	E12P02/E12W03 TOE
E12 PAD	CVE FCCL B7 FISHER 7-17-70-3	102/07-17-070-03W4/00	E12P06 TOE
E12 PAD	CVE FCCL C11 FISHER 11-17-70-3	102/11-17-070-03W4/00	E12W04 HEEL
E15 PAD	CVE FCCL C8 FISHER 8-16-70-3	102/08-16-070-03W4/00	E15I02 MID
E16 PAD	CVE FCCL A12 FISHER 12-15-70-3	102/12-15-070-03W4/00	E16W02 HEEL
E16 PAD	CVE FCCL D11 FISHER 11-15-70-3	100/11-15-070-03W4/00	E16W06 MID
E19 PAD	CVE FCCL B5 FISHER 5-22-70-3	103/05-22-070-03W4/00	E19P06 TOE
E19 PAD	CVE FCCL B8 FISHER 8-21-70-3	103/08-21-070-03W4/00	E19P13 TOE
E19 PAD	CVE FCCL D14 FISHER 14-16-70-3	102/14-16-070-03W4/00	E19P11 MID
E20 PAD	CVE FCCL A6 FISHER 6-22-70-3	103/06-22-070-03W4/00	E20P05 MID
E20 PAD	CVE FCCL B7 FISHER 7-22-70-3	102/07-22-070-03W4/00	E20P08 MID
E20 PAD	CVE FCCL D2 FISHER 2-22-70-3	102/02-22-070-03W4/00	E20W08/E20P09 HEEL
E21 PAD	CVE FCCL D3 FISHER 3-21-70-3	102/03-21-070-03W4/00	E21P04/E21P05 MID
E24 PAD	CVE FCCL B1 FISHER 1-20-70-3	102/01-20-070-03W4/00	E24W03 MID
E24 PAD	CVE FCCL B4 FISHER 4-21-70-3	103/04-21-070-03W4/00	E24I02 HEEL
E24 PAD	CVE FCCL D2 FISHER 2-20-70-3	102/02-20-070-03W4/00	E24W05/E24P03 TOE
E24 PAD	CVE FCCL D7 FISHER 7-20-70-3	100/07-20-070-03W4/00	E24P07/E24W10 TOE
E25 PAD	CVE FCCL A16 FISHER 16-20-70-3	100/16-20-070-03W4/00	E25P04/E25P05 TOE
F PAD	CVE FCCL A8 FISHER 8-15-70-4	103/08-15-070-04W4/00	FP1 HEEL
F PAD	CVE FCCL B9 FISHER 9-15-70-4	102/09-15-070-04W4/00	FP4/FW5 MID
G PAD	CVE FCCL B10 FISHER 10-15-70-4	104/10-15-070-04W4/00	GP1 MID
G PAD	CVE FCCL C10 FISHER 10-15-70-4	100/10-15-070-04W4/00	GW03/GP3 MID
G PAD	CVE FCCL D10 FISHER 10-15-70-4	103/10-15-070-04W4/00	GW02 MID
G PAD	CVE FCCL C7 FISHER 7-15-70-4	102/07-15-070-04W4/00	GP1 HEEL
W01 PAD	CVE FCCL A8 FISHER 8-20-70-4	100/08-20-070-04W4/00	W01P03 HEEL
W02 PAD	CVE FCCL 9-17 FISHER 16-17-70-4	100/16-17-070-04W4/00	W02P03 MID
W02 PAD	CVE FCCL A15 FISHER 15-17-70-4	102/15-17-070-04W4/00	W02P05 TOE

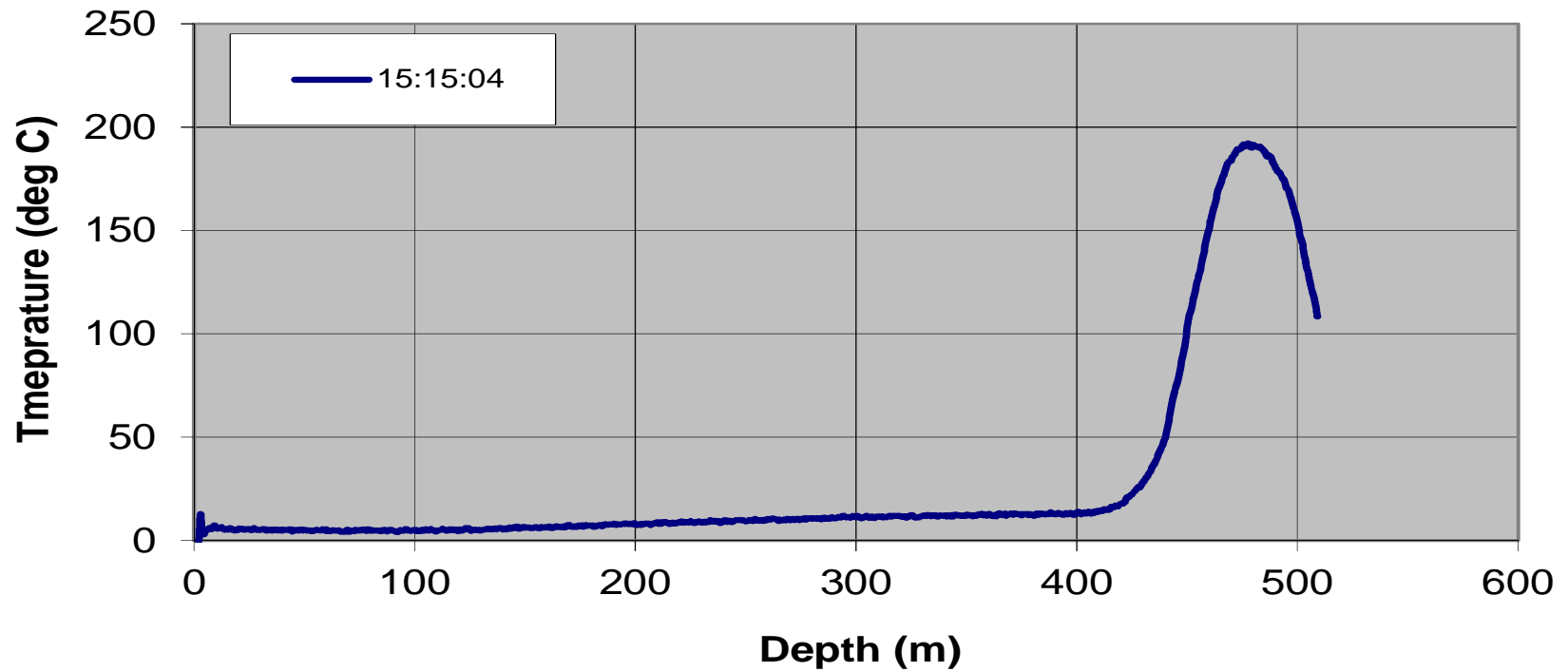
49 observation wells were logged with temperature fiber between January 2014 and March 2015

Some wells were logged 2-3 times between January 2014 March 2015.

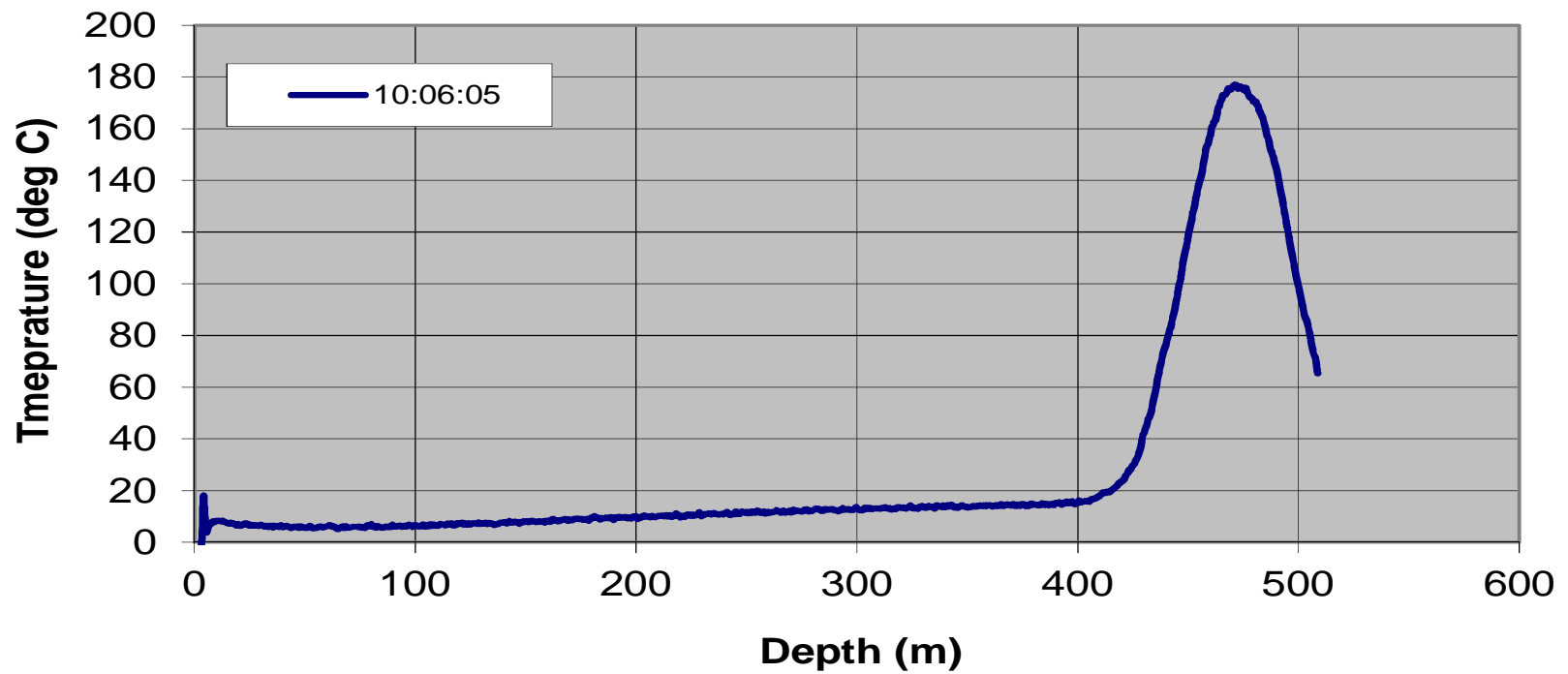
**Foster Creek Obs Well Temperature Data
D Pad D2 FISHER 2-22-70-4 Dec-18-2014**



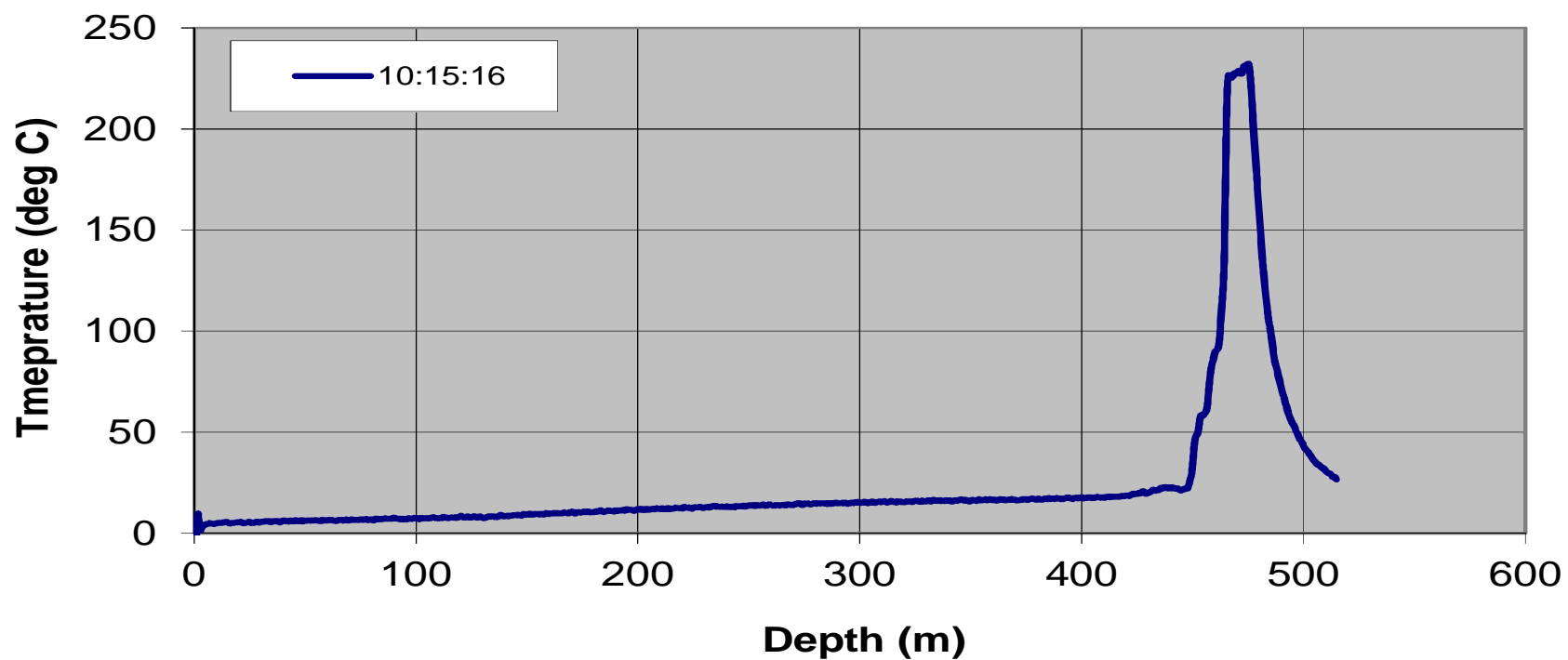
**Foster Creek Obs Well Temperature Data
C Pad B6 FISHER 6-22-70-4 Dec-15-2014**



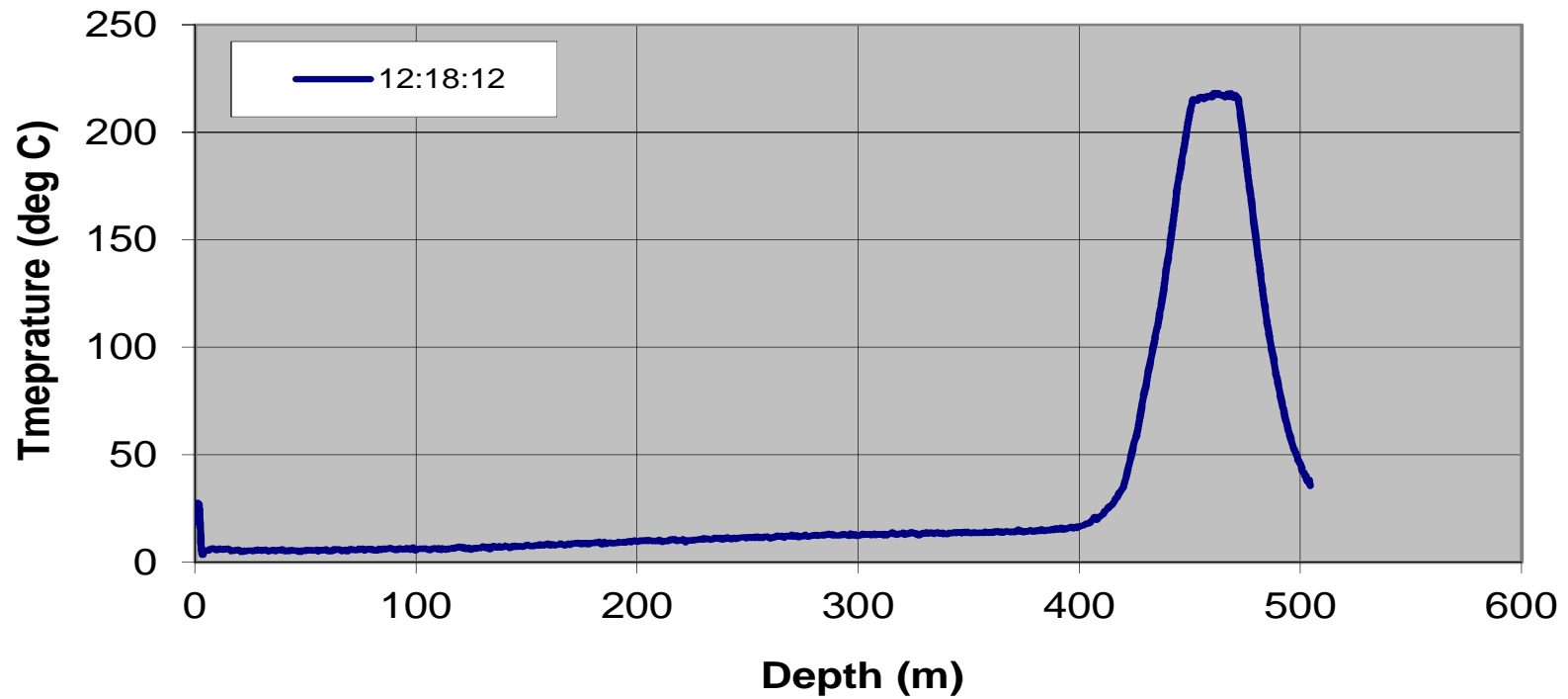
**Foster Creek Obs Well Temperature Data
C Pad A7 FISHER 7-22-70-4 Dec-18-2014**



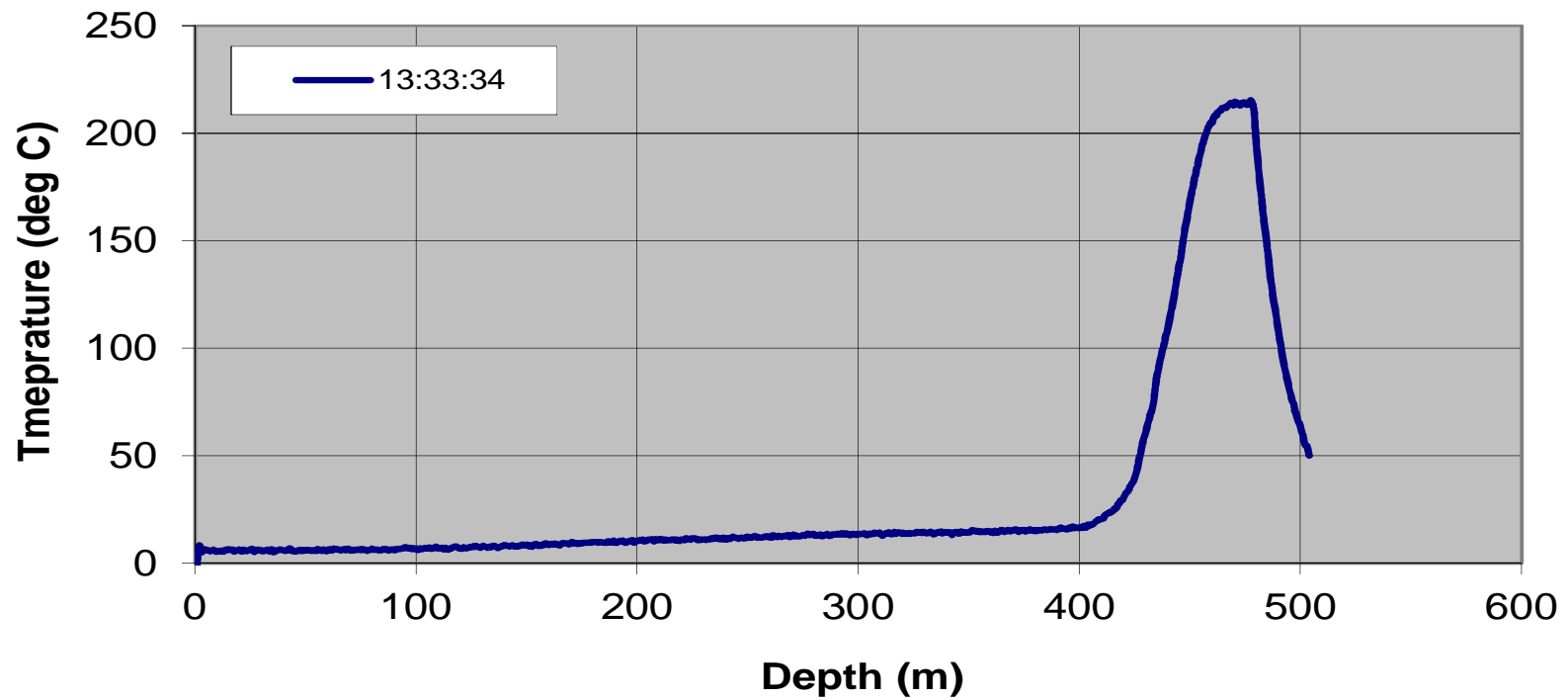
**Foster Creek Obs Well Temperature Data
W01 Pad A8 FISHER 8-20-70-4 Jan-06-2014**



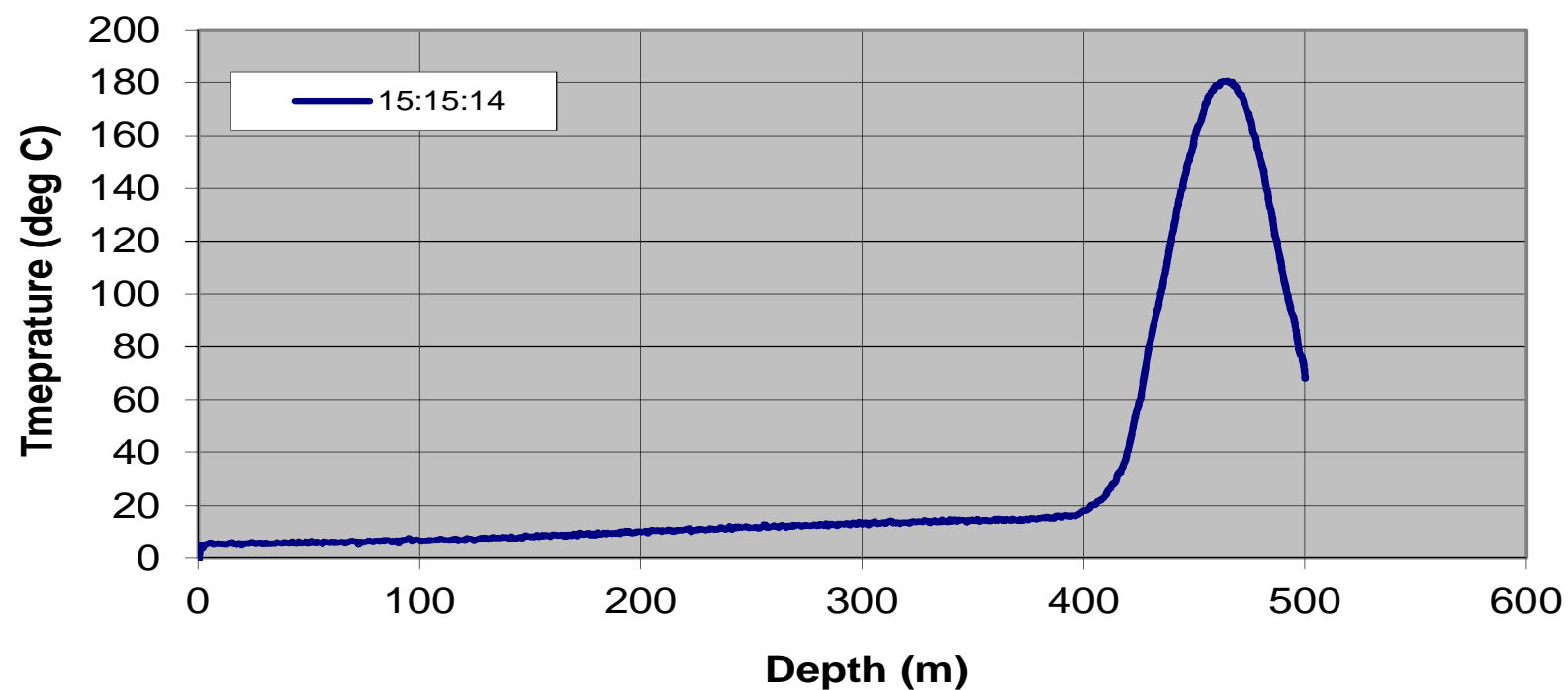
**Foster Creek Obs Well Temperature Data
G Pad C10 FISHER 10-15-70-4 Dec-18-2014**



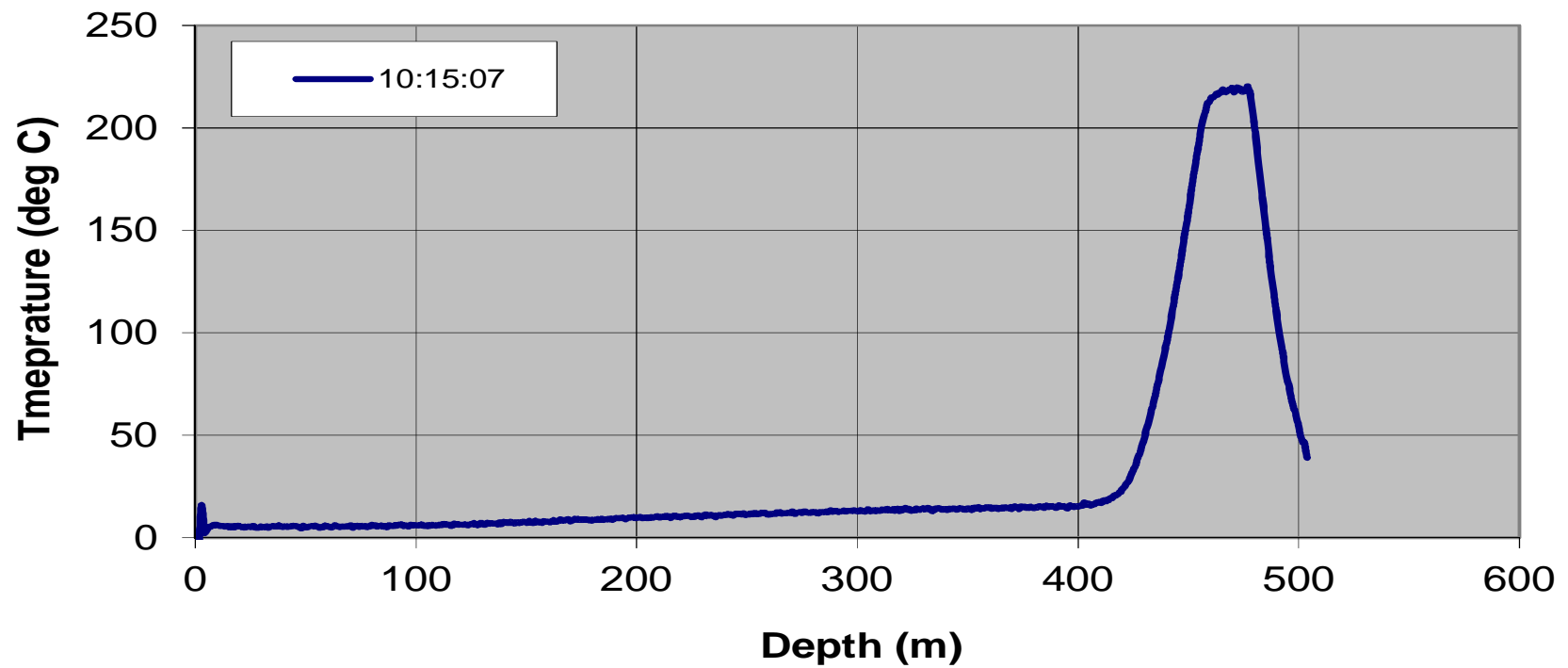
**Foster Creek Obs Well Temperature Data
D Pad C13 FISHER 13-14-70-4 Dec-16-2014**



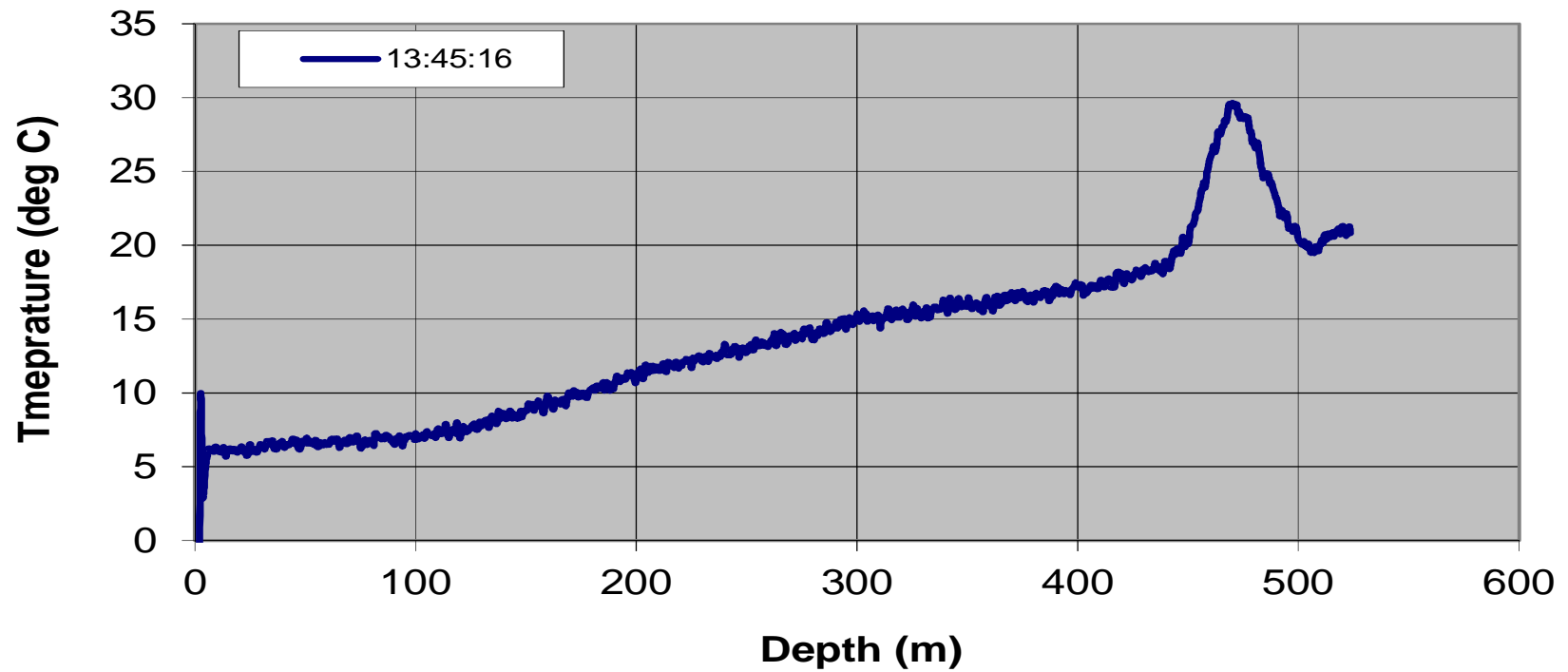
**Foster Creek Obs Well Temperature Data
D Pad B4 FISHER 4-23-70-4 Dec-16-2014**



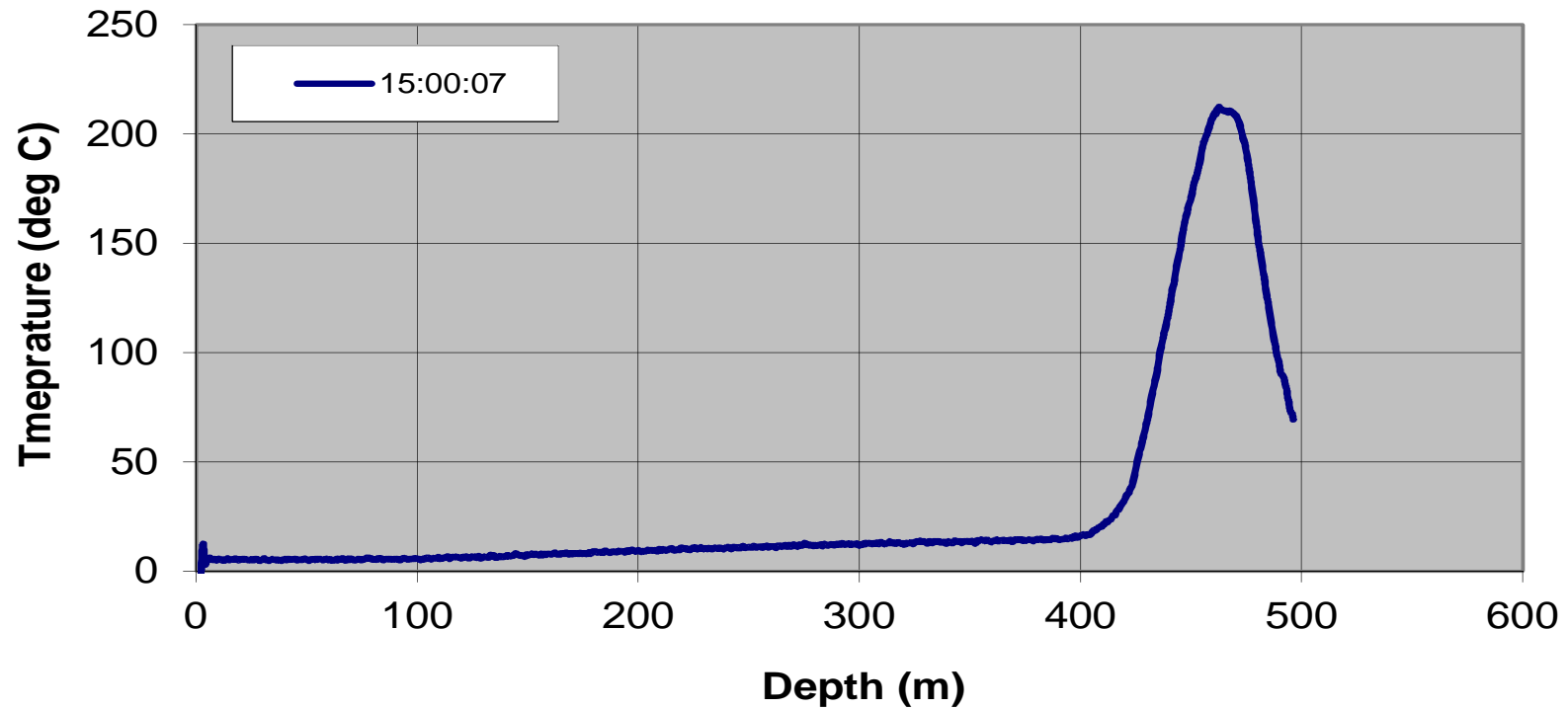
**Foster Creek Obs Well Temperature Data
F PAD B9 FISHER 9-15-70-4 Dec-17-2014**



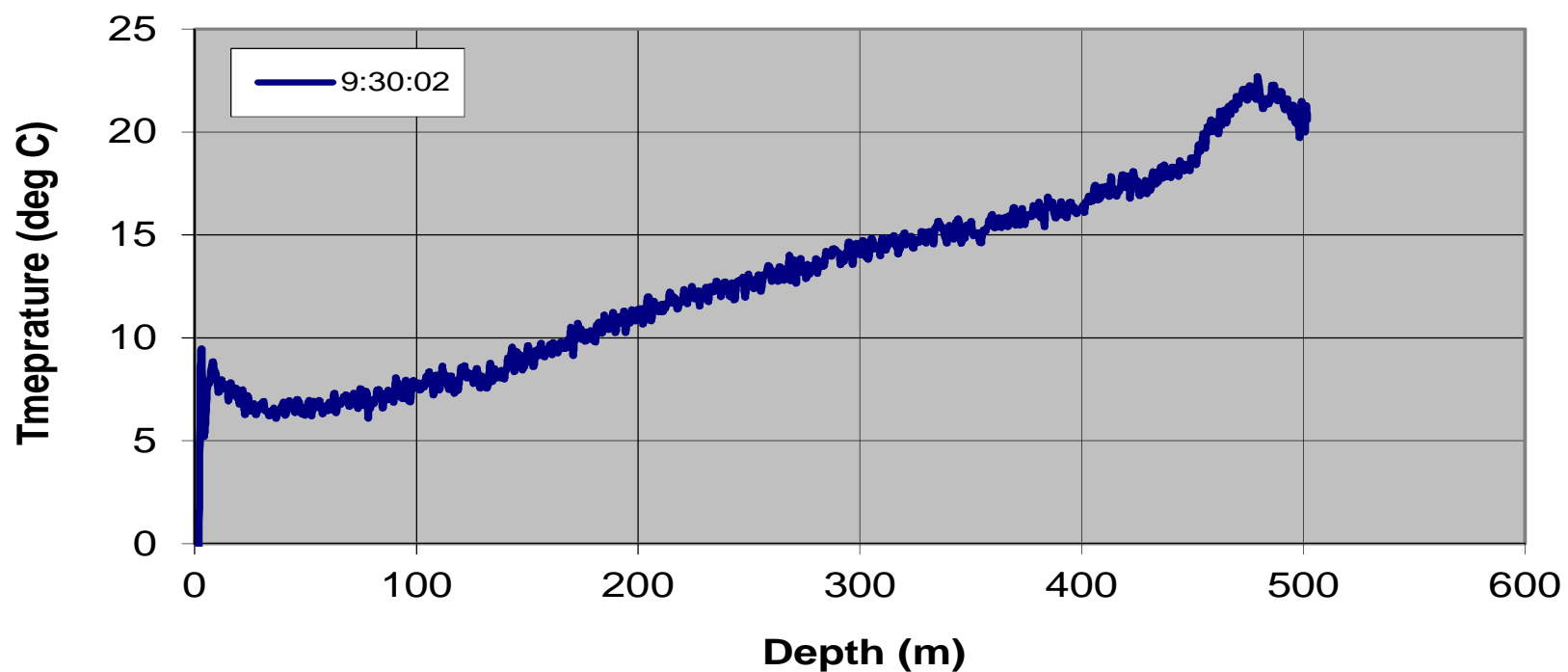
**Foster Creek Obs Well Temperature Data
W02 Pad A15 FISHER 15-17-70-4 Jan-06-2015**



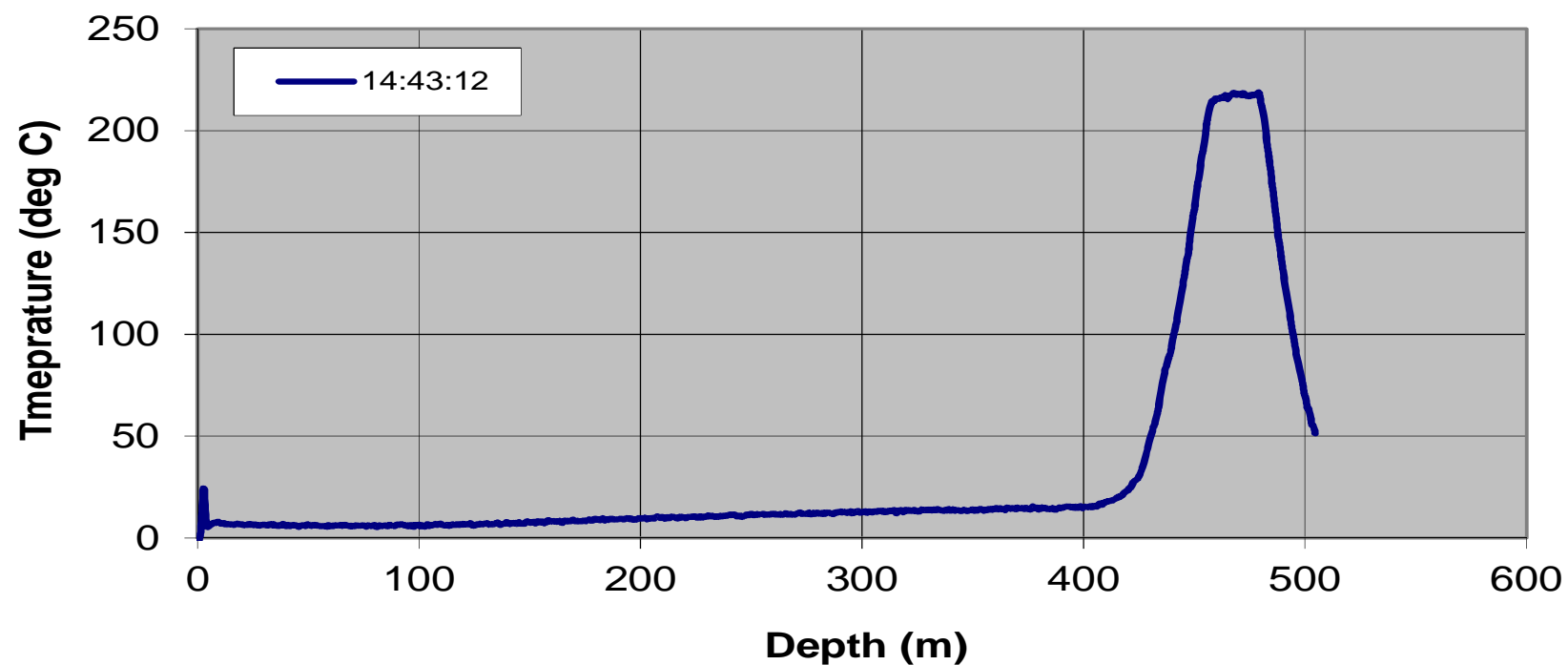
**Foster Creek Obs Well Temperature Data
D Pad D16 FISHER 16-15-70-4 Dec-17-2014**



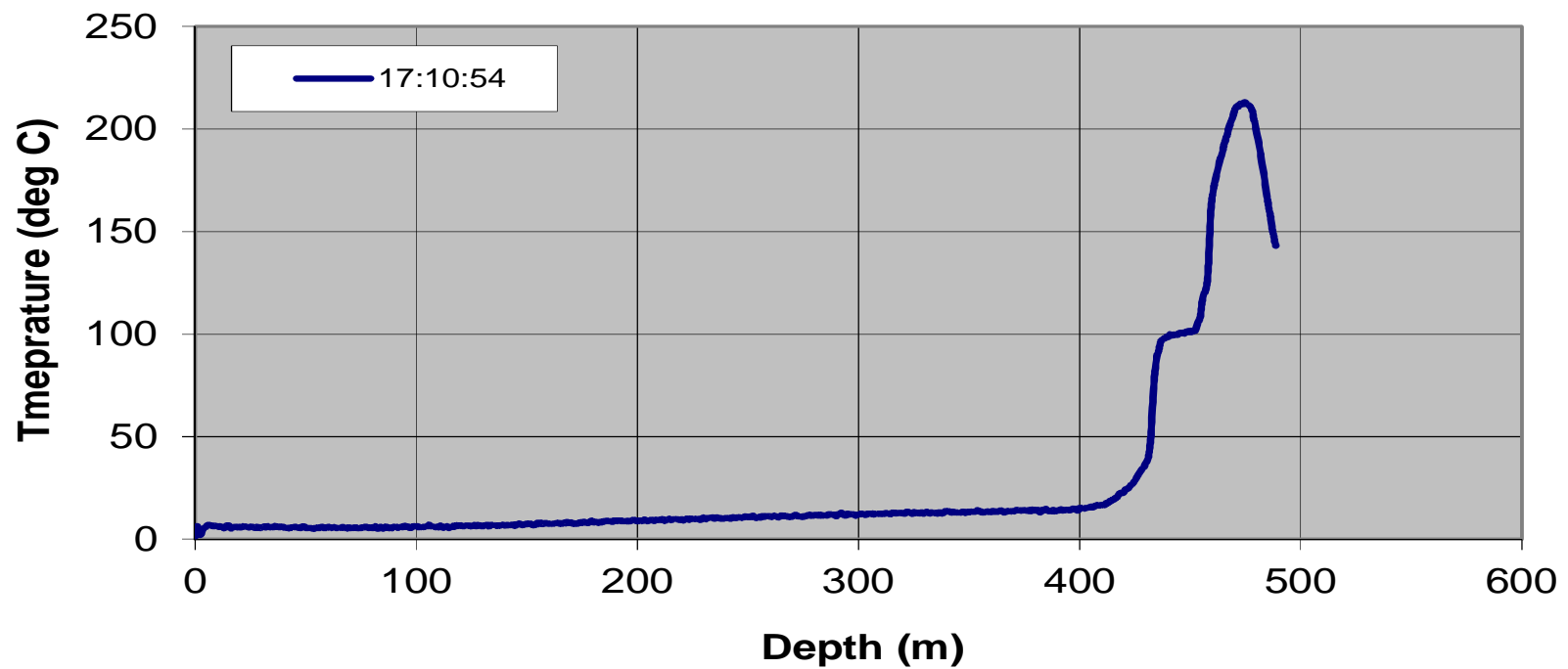
**Foster Creek Obs Well Temperature Data
F Pad A8 FISHER 8-15-70-4 Dec-20-2014**



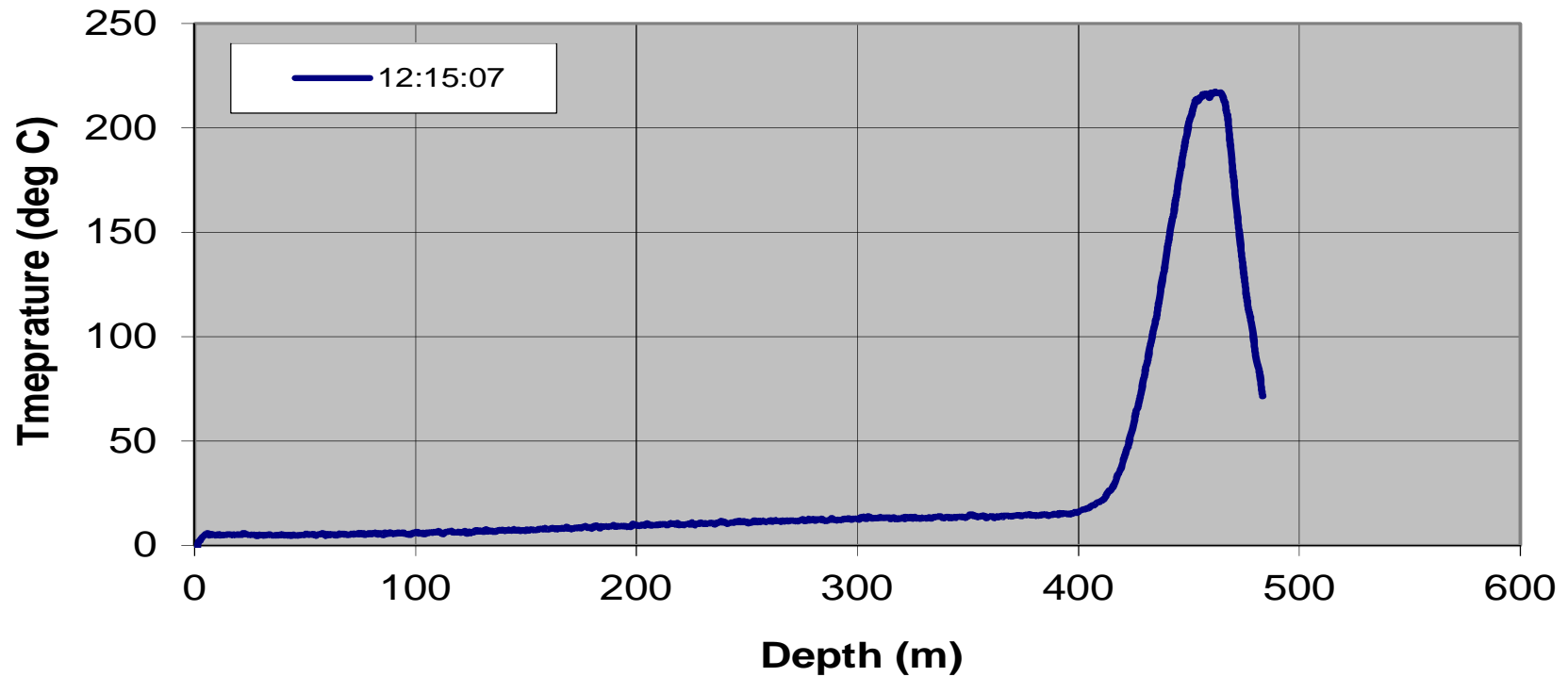
**Foster Creek Obs Well Temperature Data
G Pad D10 FISHER 10-15-70-4 Dec-19-2014**



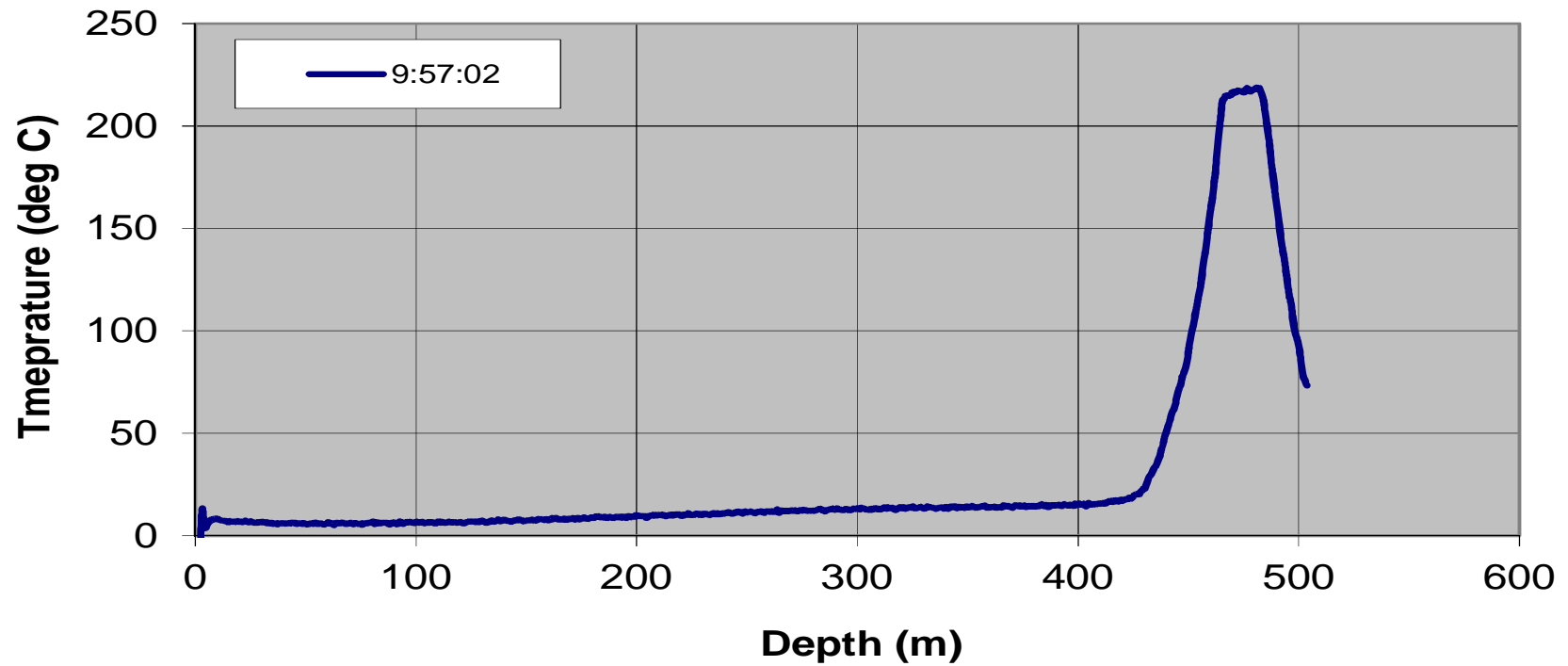
**Foster Creek Obs Well Temperature Data
A Pad 12C FISHER 12-22-70-4 Dec-15-2014**



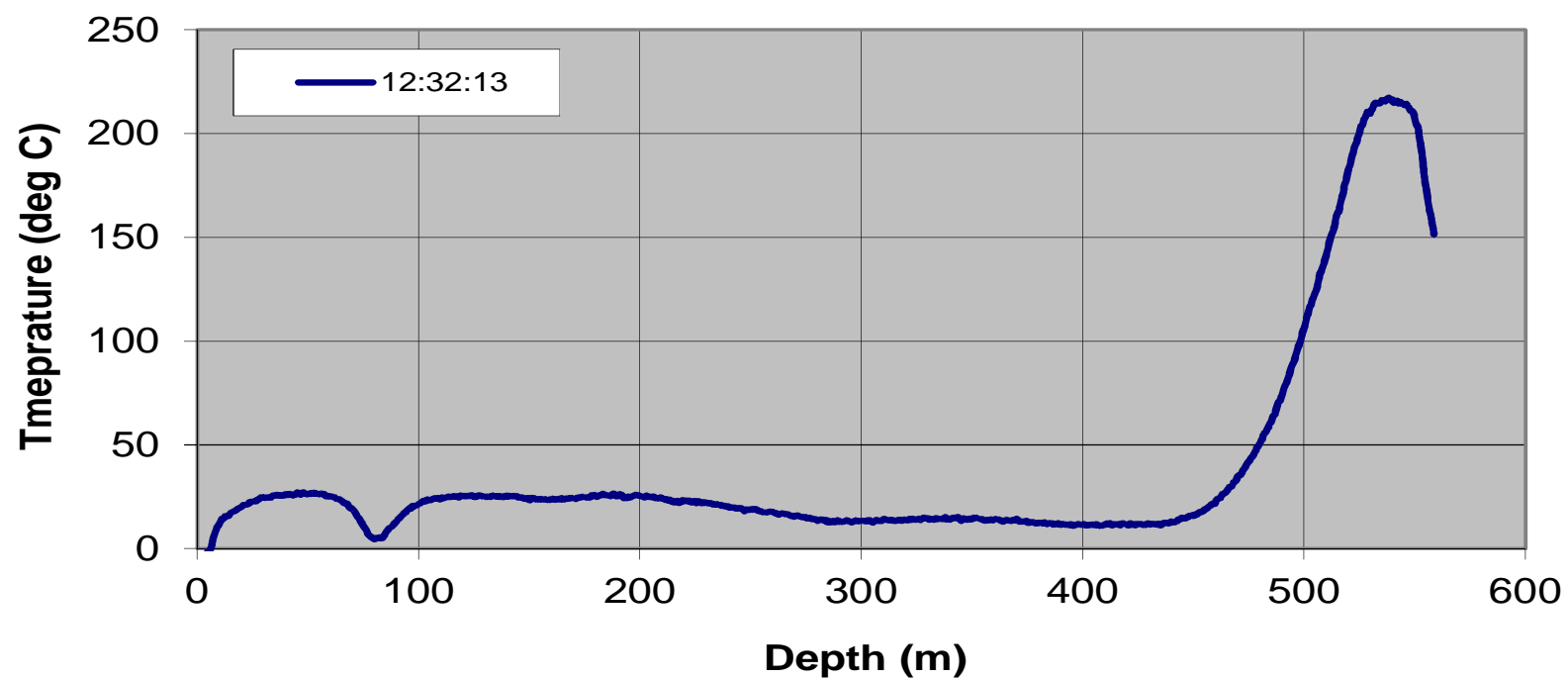
**Foster Creek Obs Well Temperature Data
D Pad C16 FISHER 16-15-70-4 Dec-17-2014**



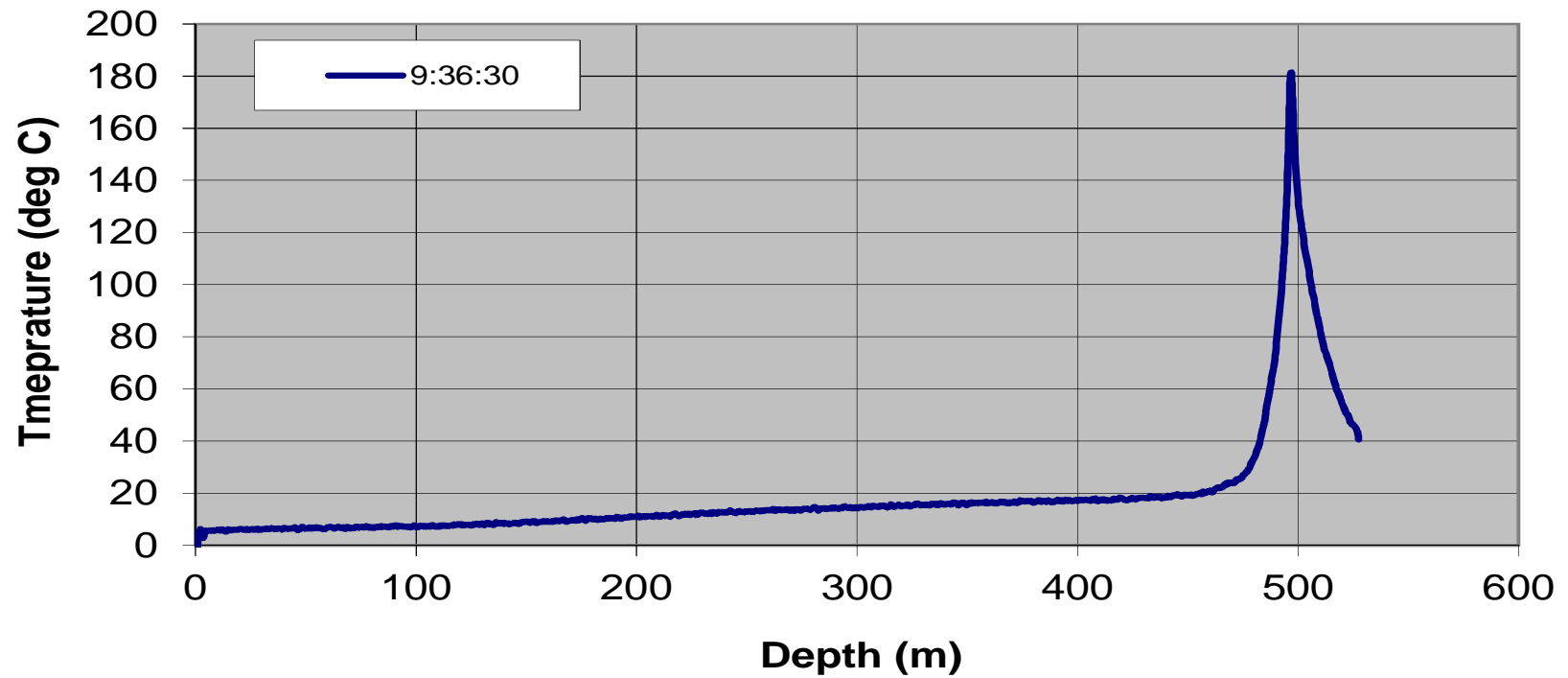
**Foster Creek Obs Well Temperature Data
G Pad B10 FISHER 10-15-70-4 Dec-18-2014**



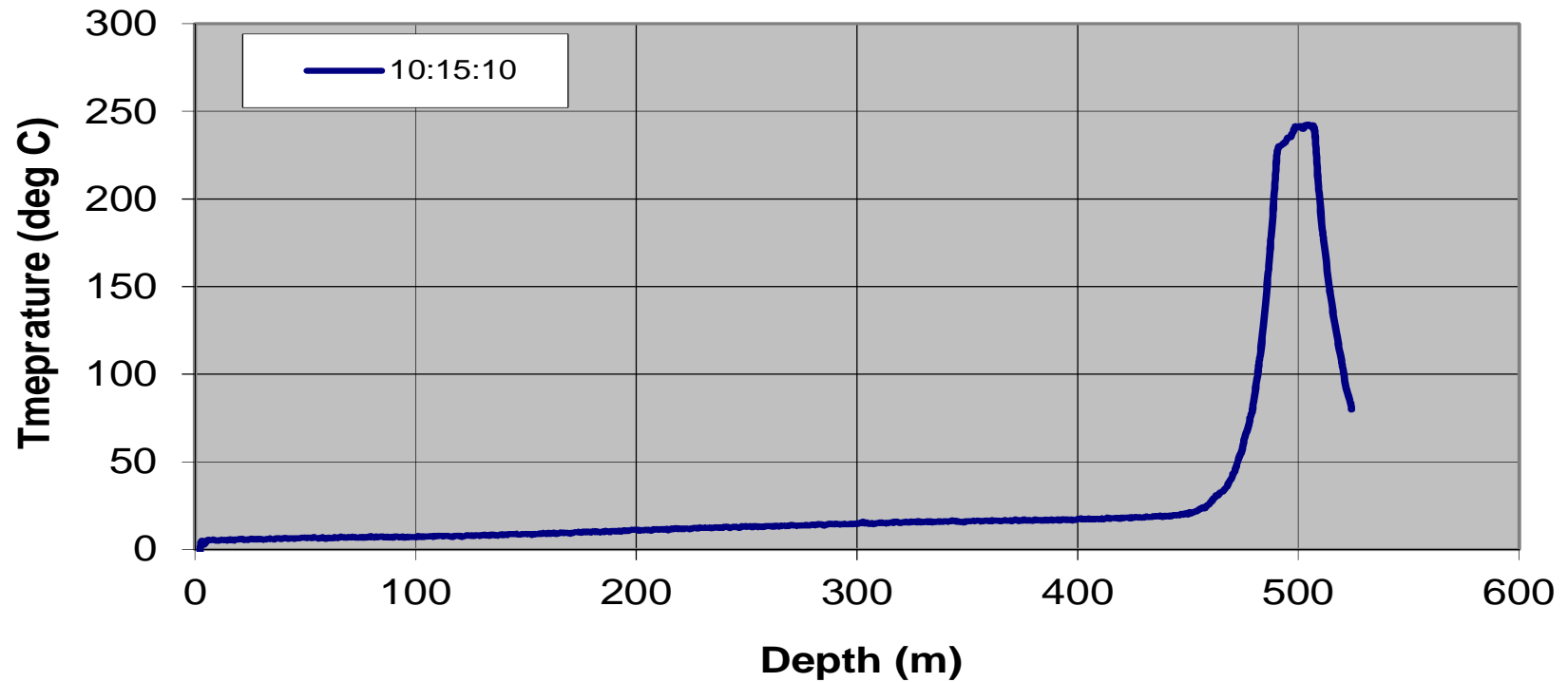
**Foster Creek Obs Well Temperature Data
A Pad 5-22 FISHER 5-22-70-4 Dec-15-2014**



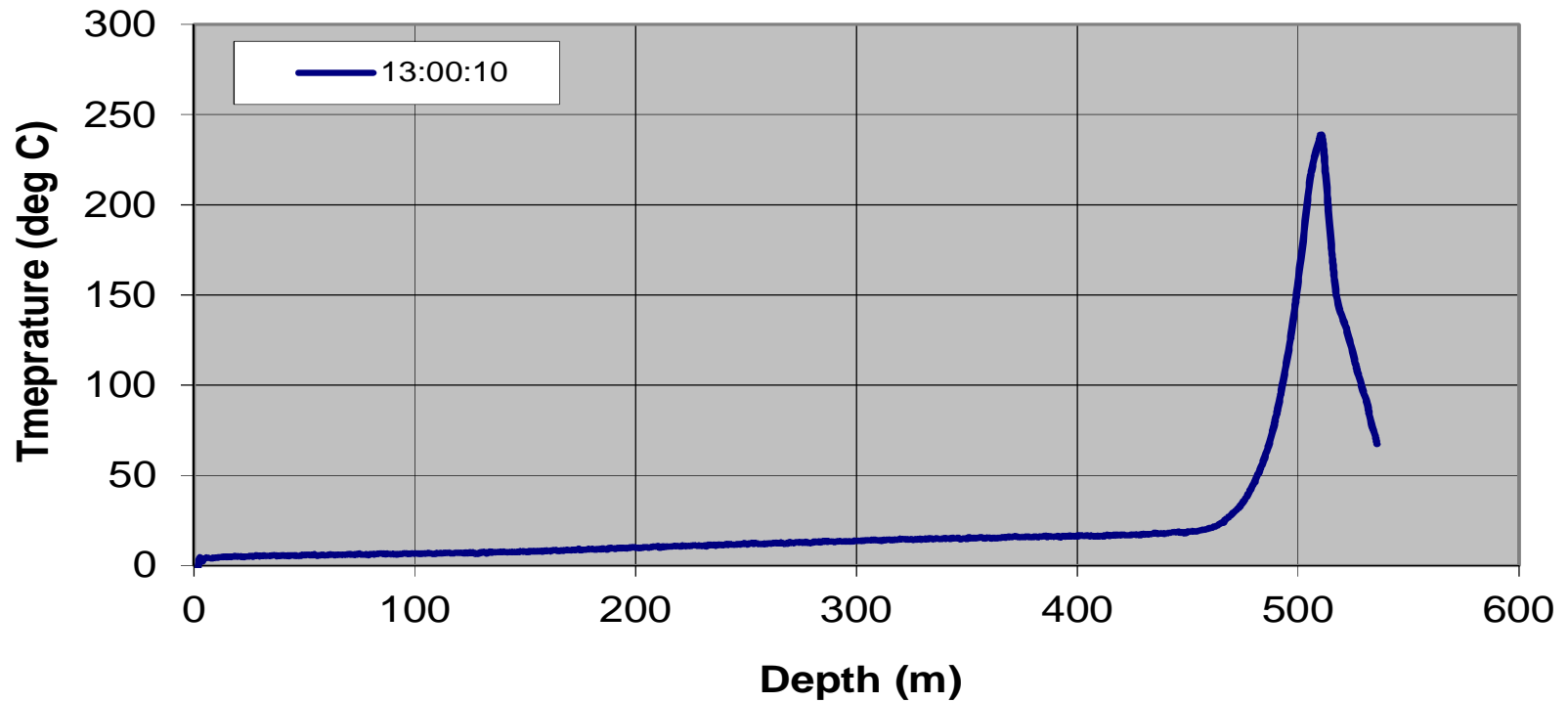
**Foster Creek Obs Well Temperature Data
E10 Pad B2 FISHER 2-17-70-3 Jan-08-2015**



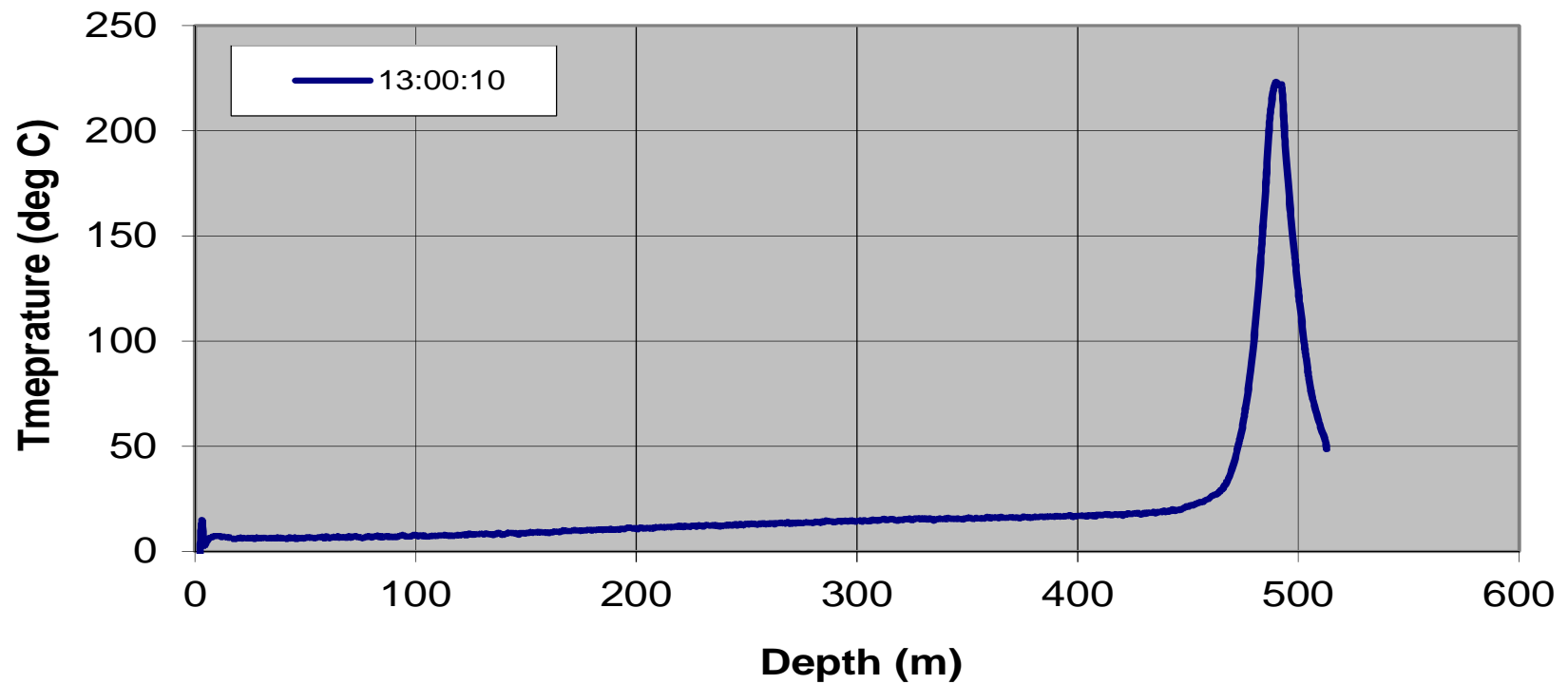
**Foster Creek Obs Well Temperature Data
E11 Pad B4 FISHER 4-17-70-3 Jan-07-2015**



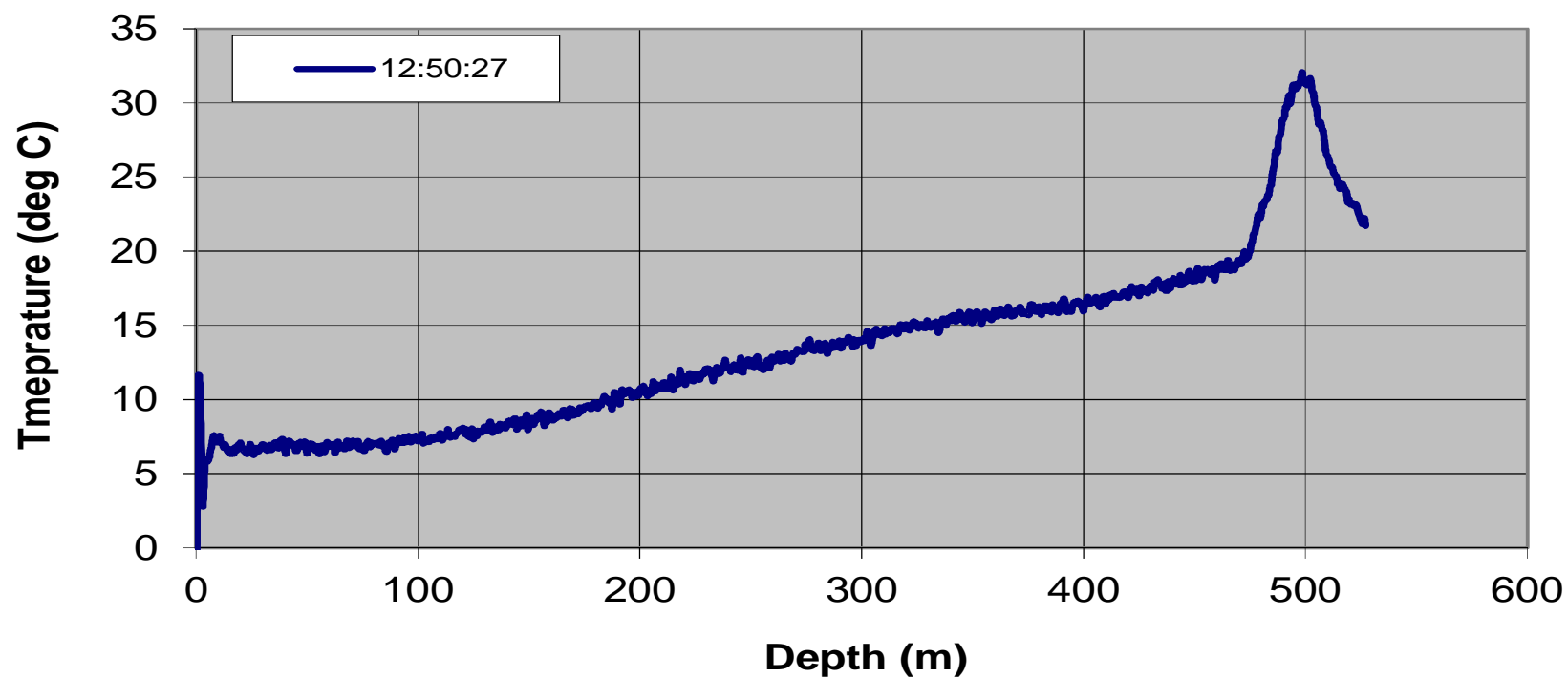
**Foster Creek Obs Well Temperature Data
E11 Pad C12 FISHER 12-08-70-3 Jan-07-2015**



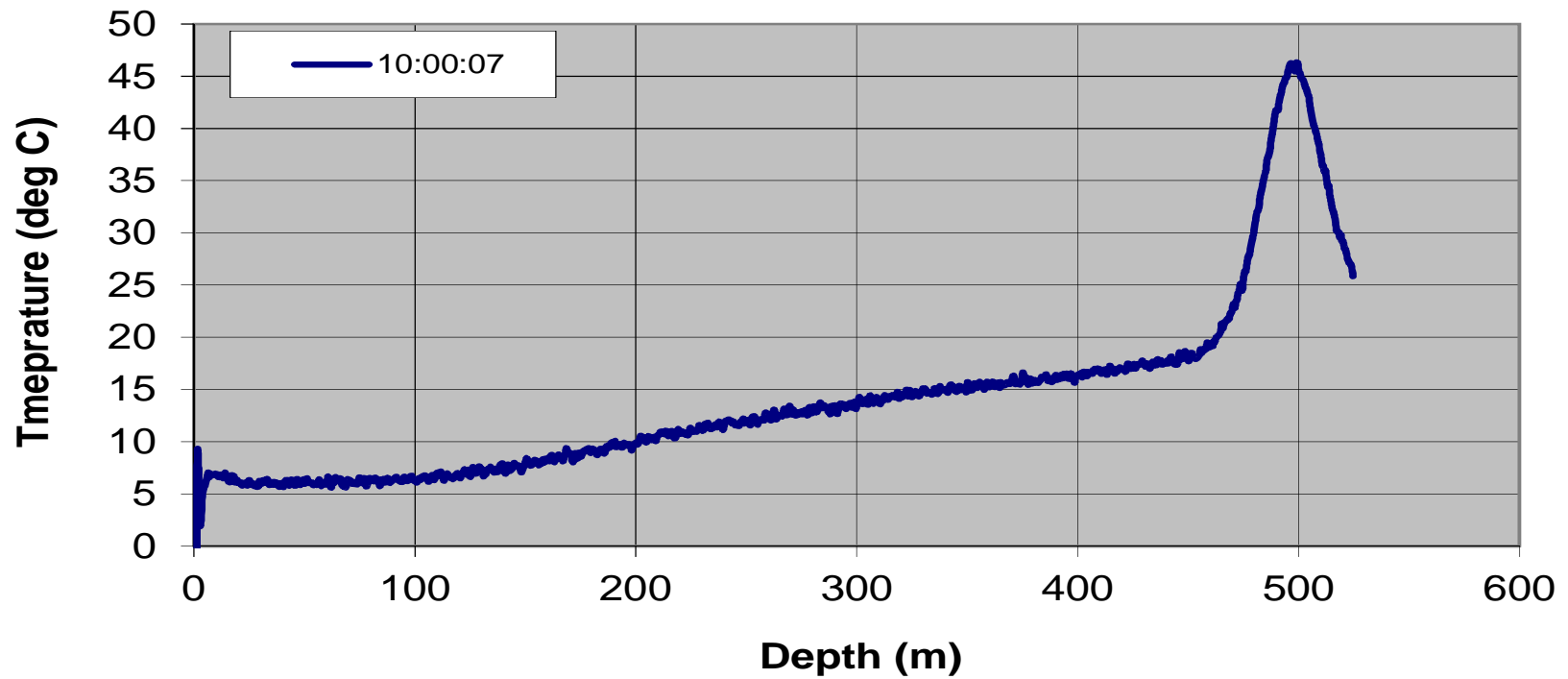
**Foster Creek Obs Well Temperature Data
E04 Pad A15 FISHER 15-18-70-3 Jan-08-2015**



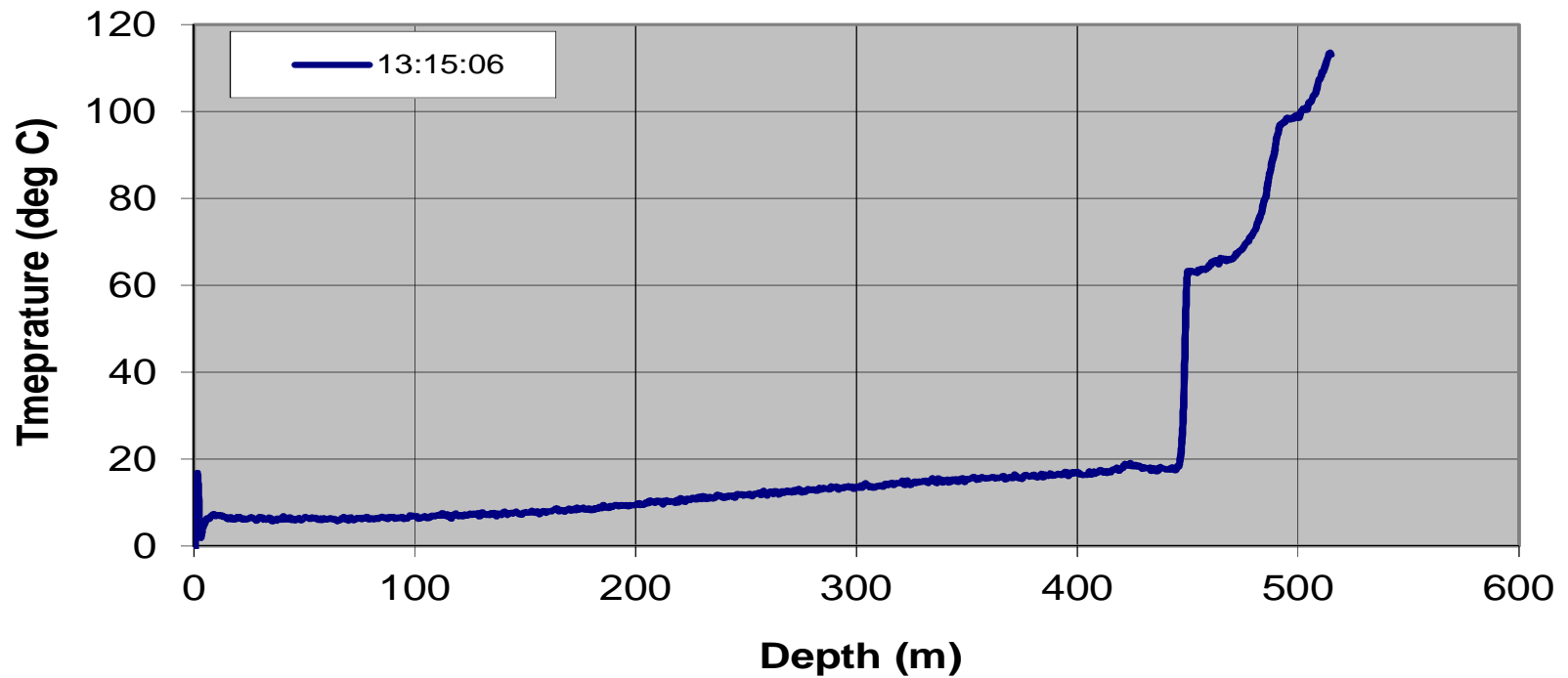
**Foster Creek Obs Well Temperature Data
E25 Pad A16 FISHER 16-20-70-3 Jan-10-2015**



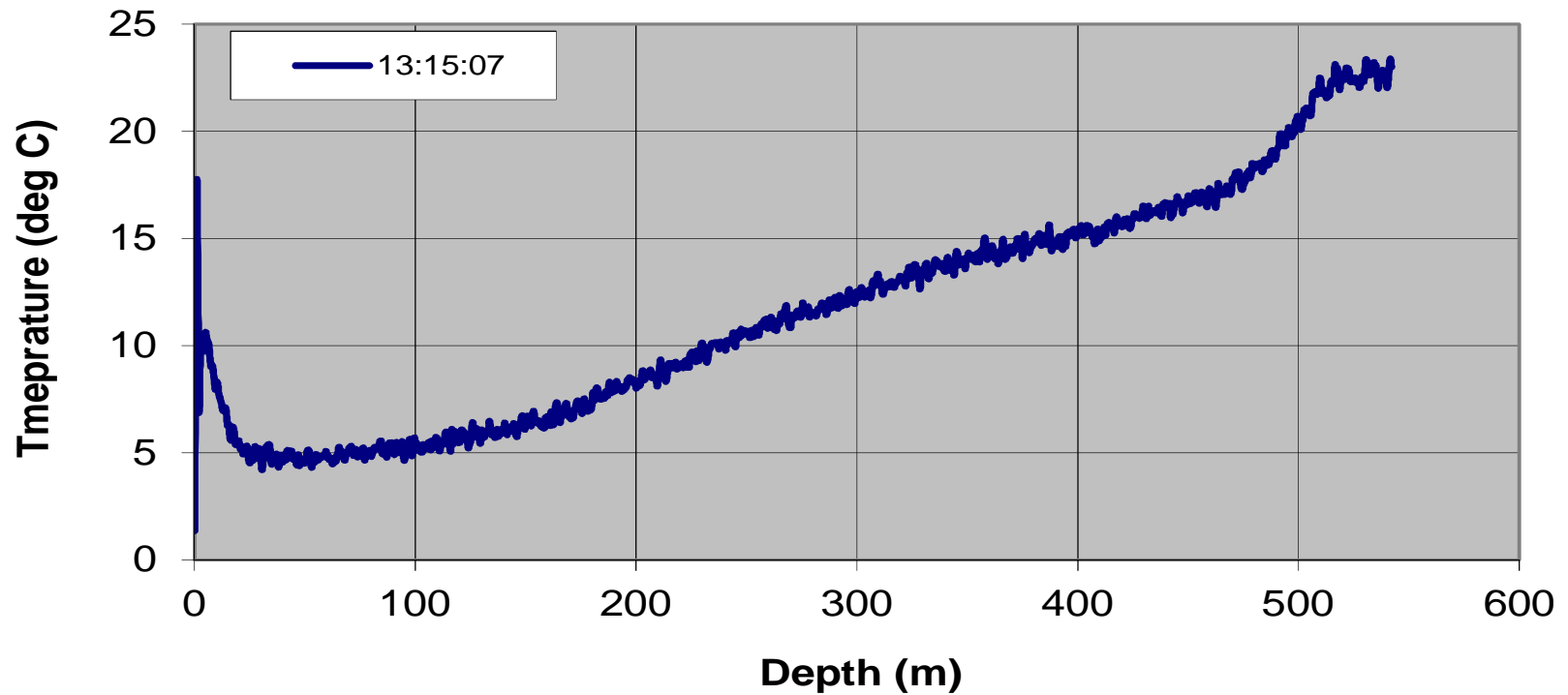
**Foster Creek Obs Well Temperature Data
E21 Pad D3 FISHER 3-21-70-3 Jan-10-2015**



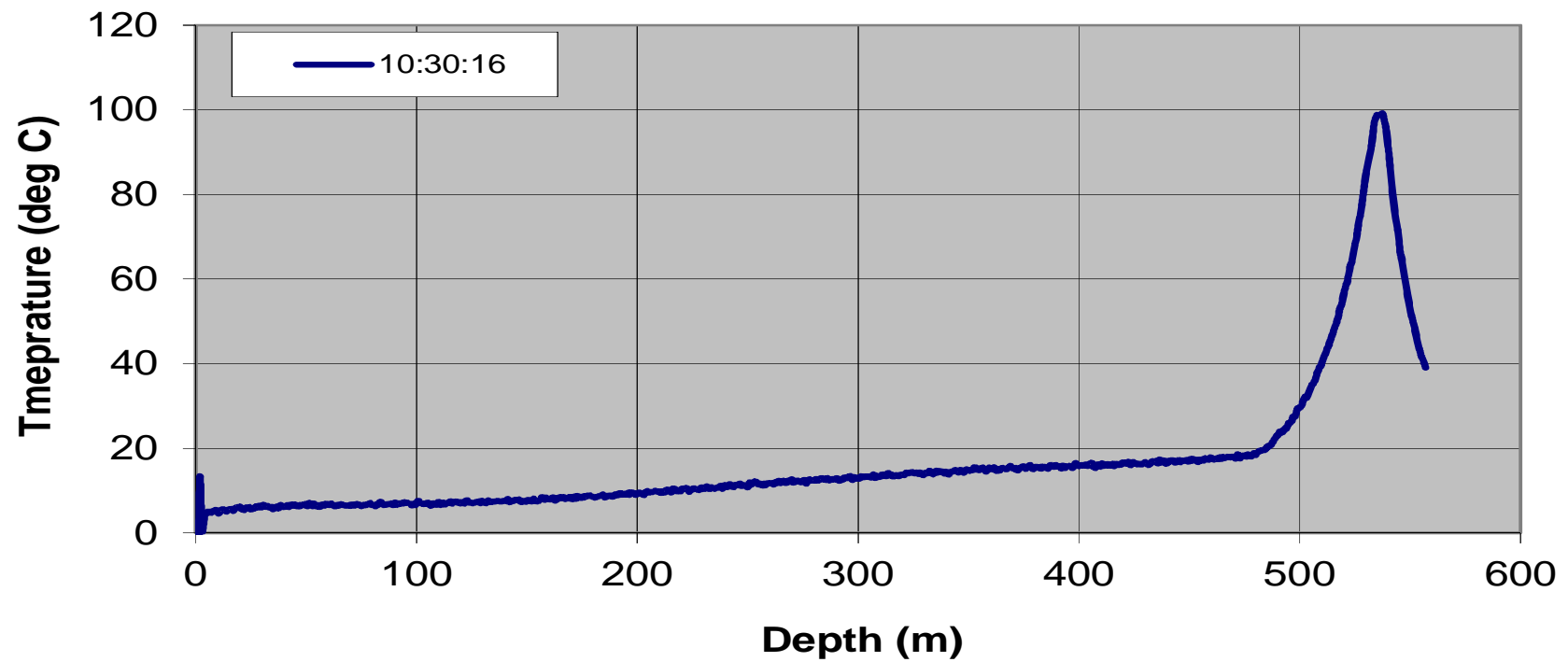
**Foster Creek Obs Well Temperature Data
E15 Pad C8 FISHER 8-16-70-3 Jan-11-2015**



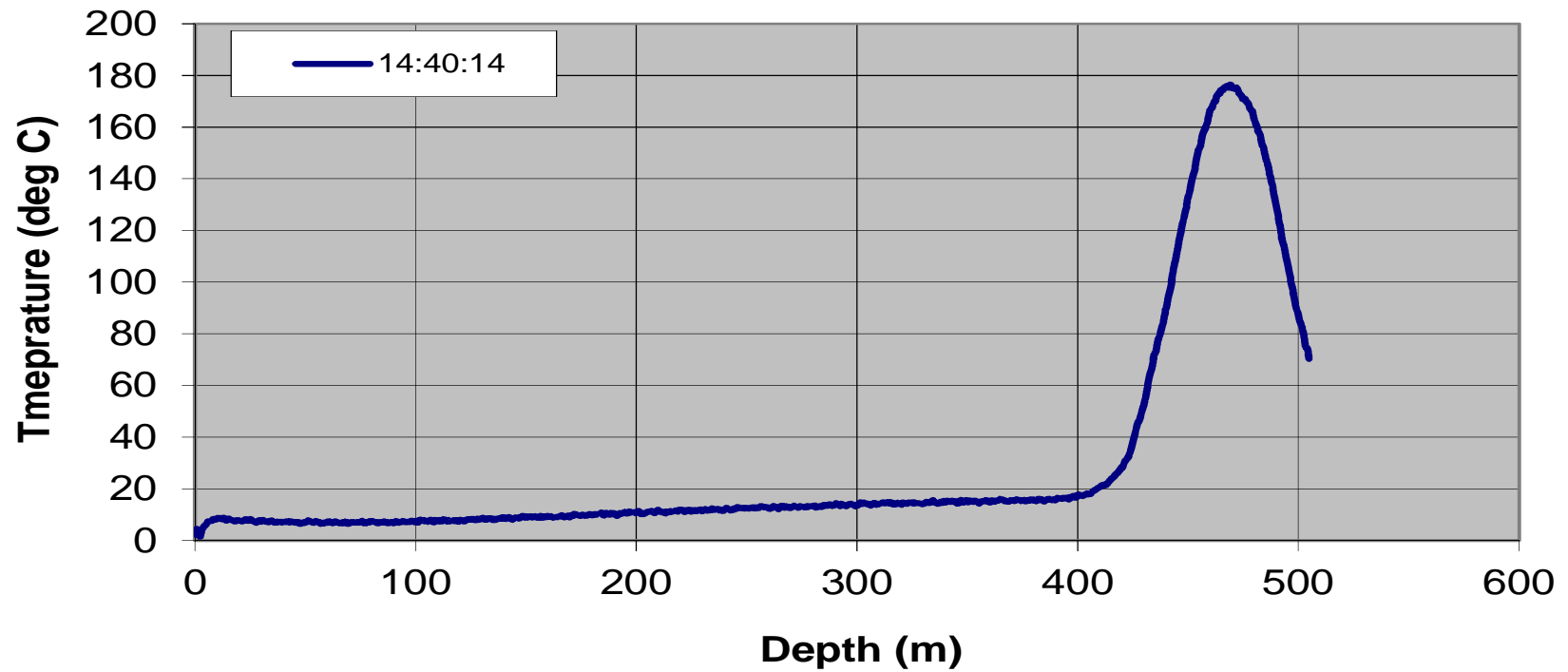
**Foster Creek Obs Well Temperature Data
E16 Pad A12 FISHER 12-15-70-3 Jan-08-2015**



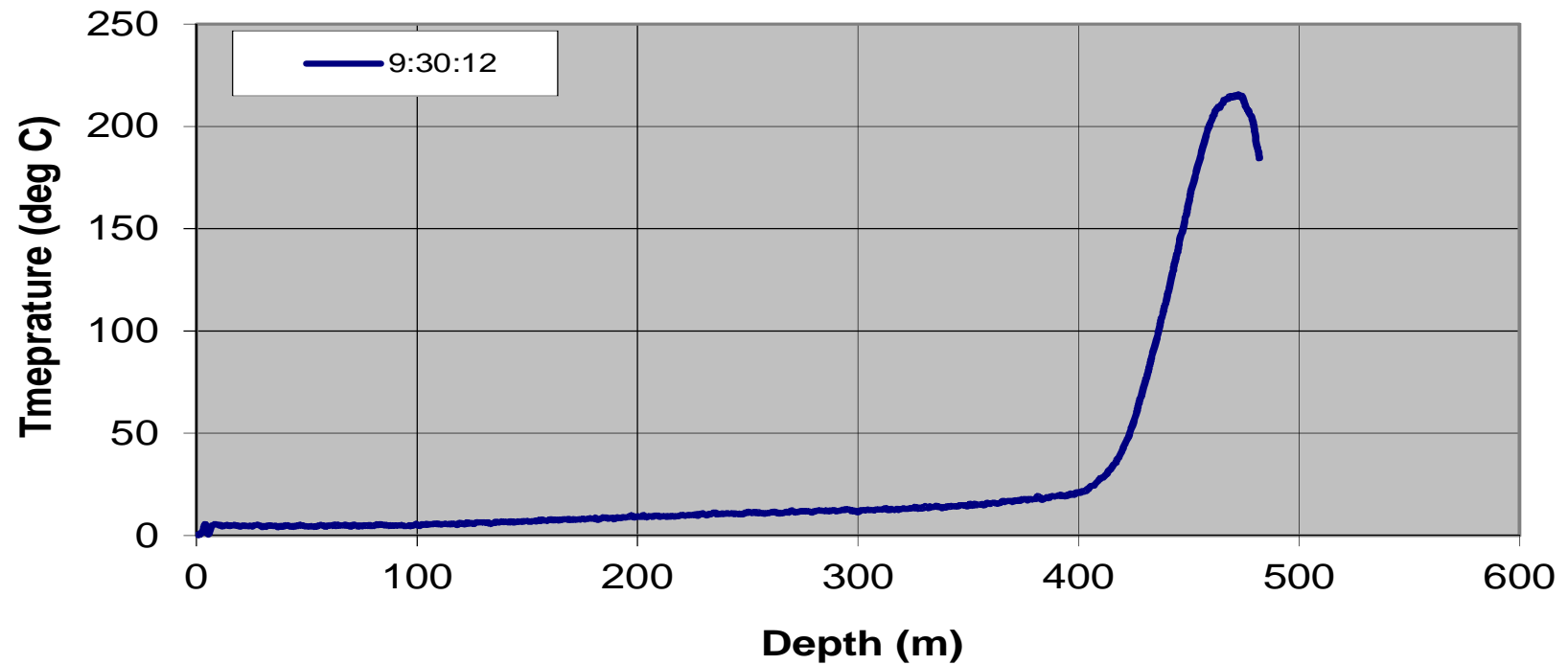
**Foster Creek Obs Well Temperature Data
E20 Pad A6 FISHER 6-22-70-3 Jan-11-2015**



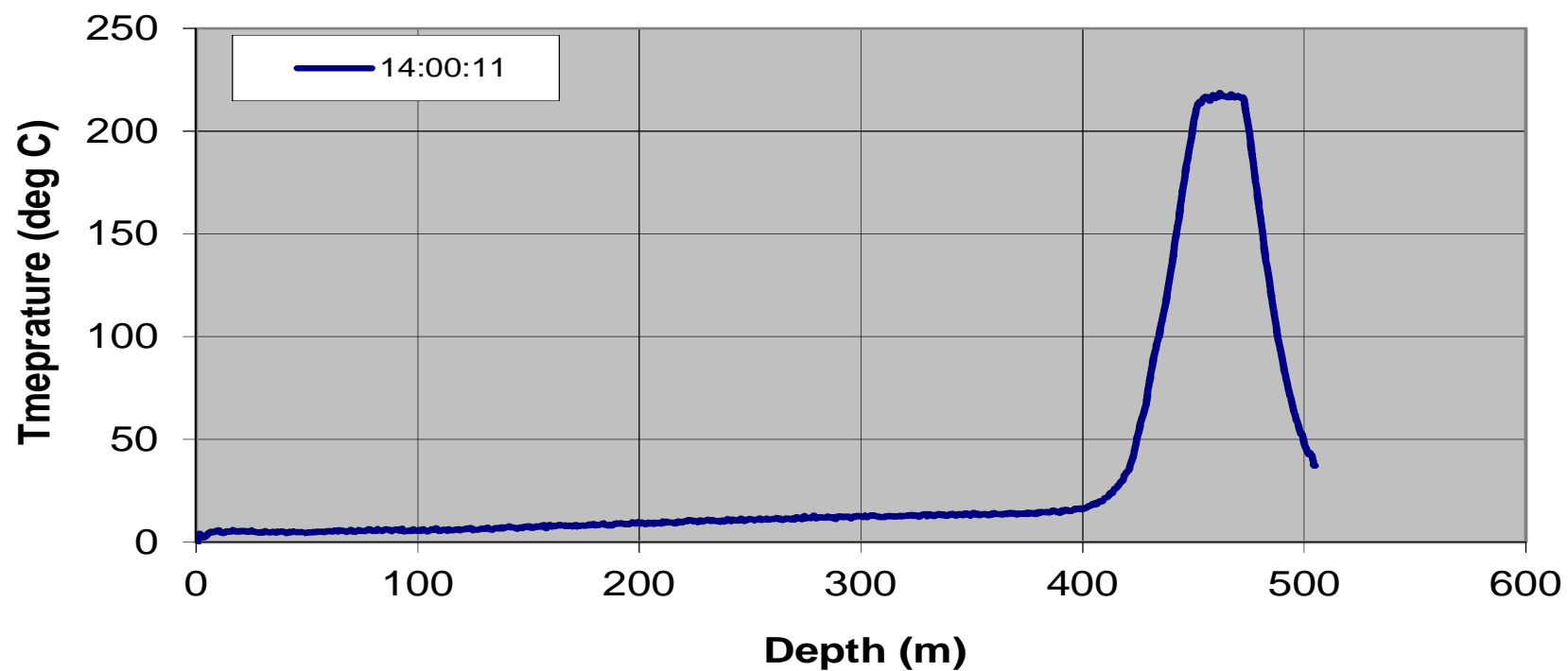
**Foster Creek Obs Well Temperature Data
C Pad A7 FISHER 7-22-70-4 Mar-04-2015**



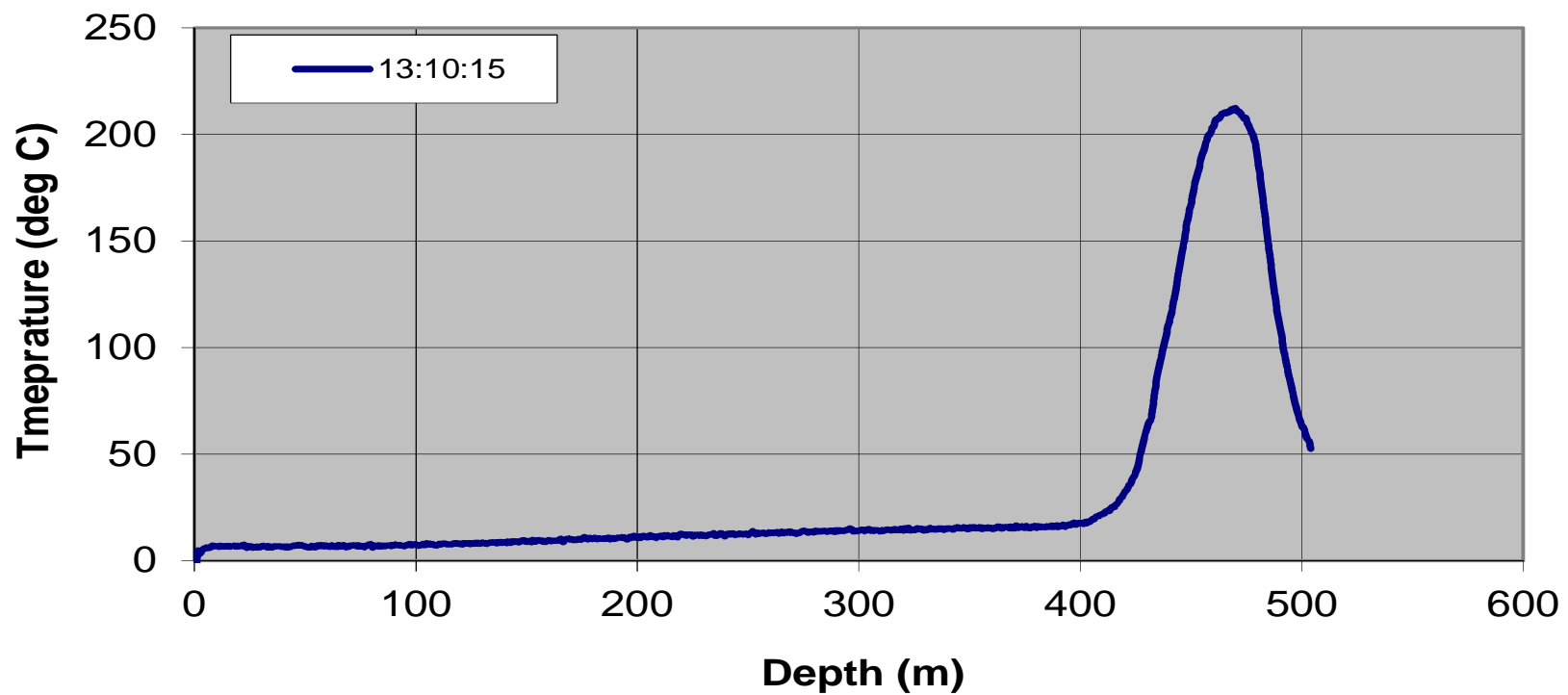
**Foster Creek Obs Well Temperature Data
D Pad D2 FISHER 2-22-70-4 Mar-05-2015**



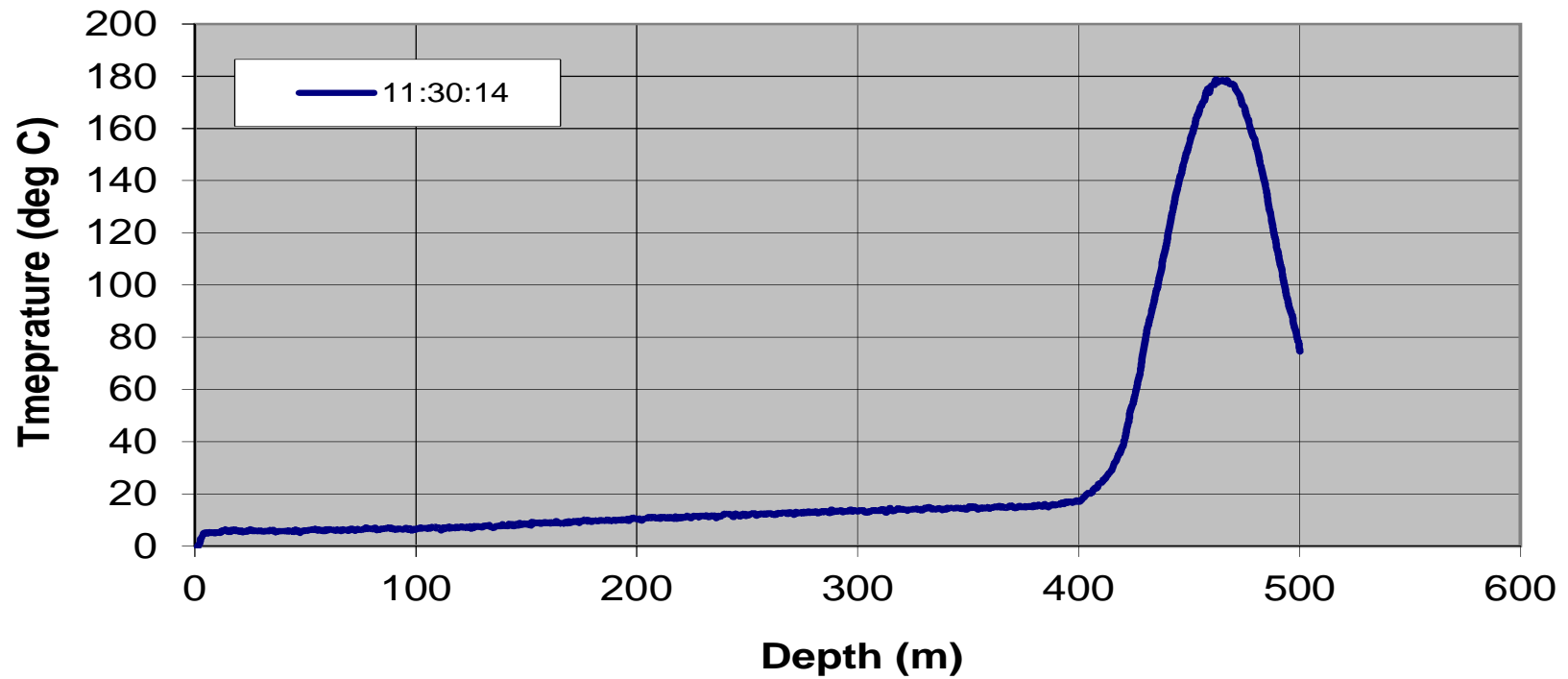
**Foster Creek Obs Well Temperature Data
G Pad C10 FISHER 10-15-70-4 Mar-02-2015**



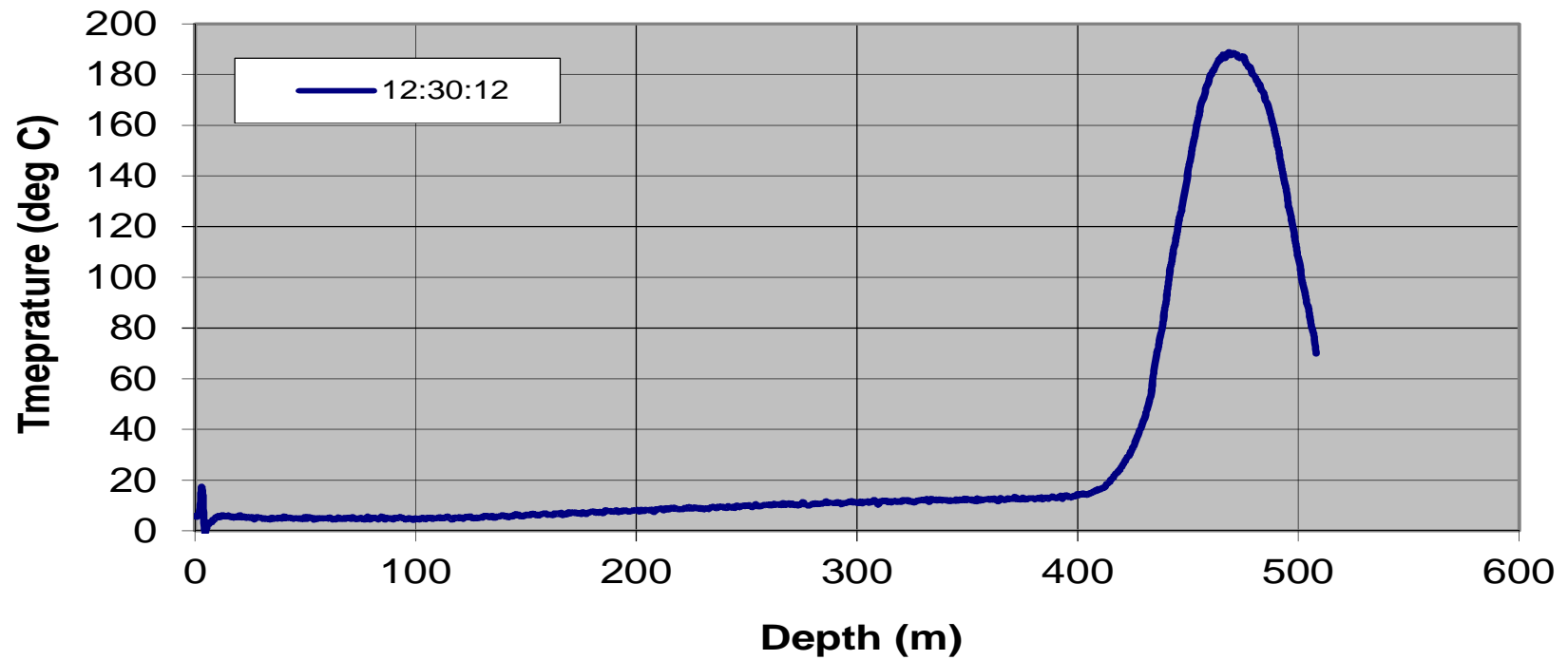
**Foster Creek Obs Well Temperature Data
D Pad C13 FISHER 13-14-70-4 Mar-03-2015**



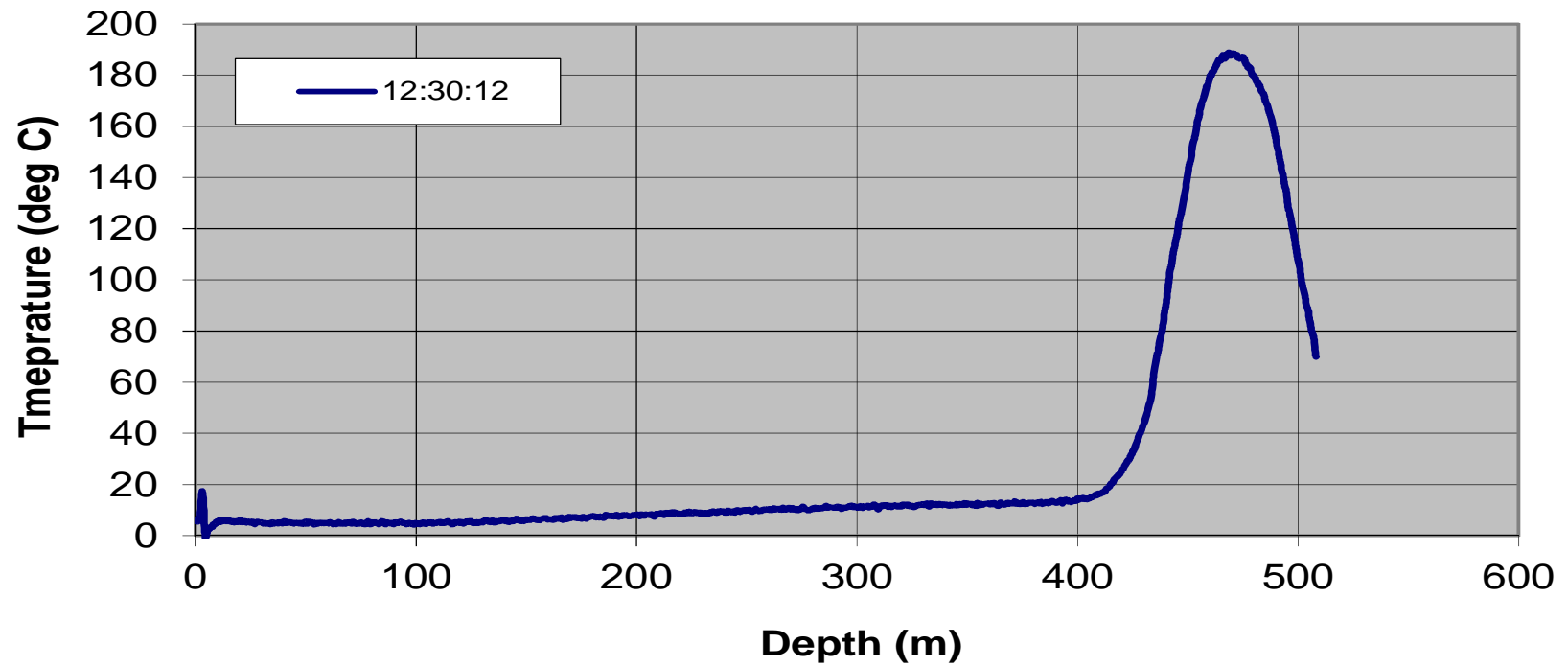
**Foster Creek Obs Well Temperature Data
D Pad B4 FISHER 4-23-70-4 Mar-03-2015**



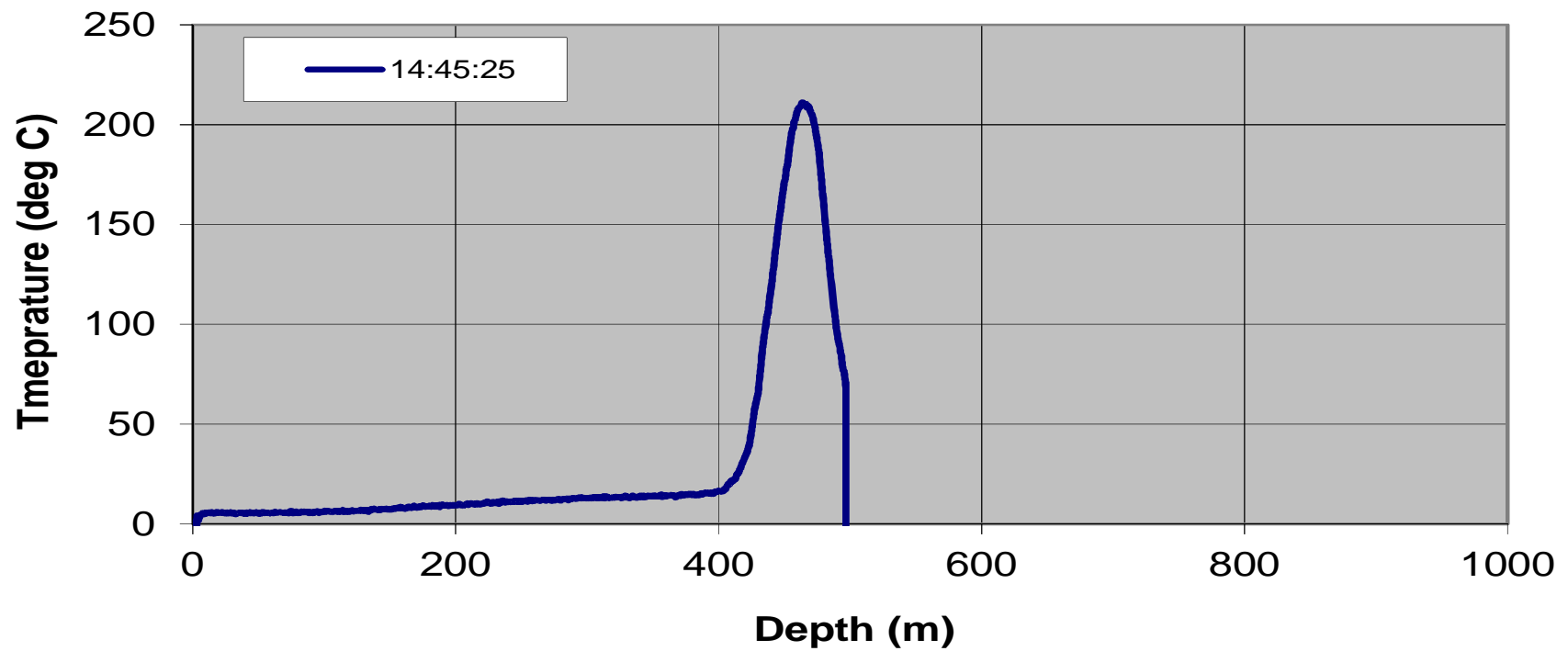
**Foster Creek Obs Well Temperature Data
C Pad B6 FISHER 6-22-70-4 Mar-05-2015**



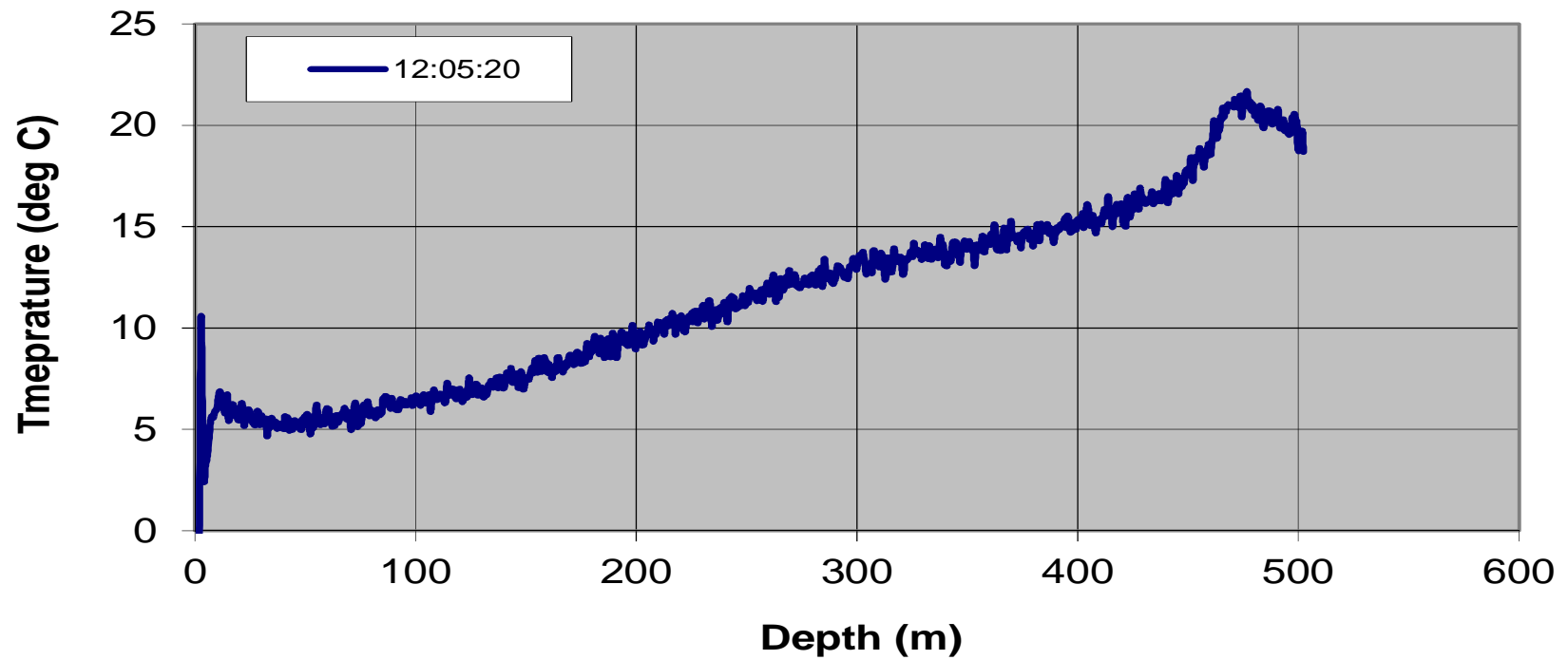
**Foster Creek Obs Well Temperature Data
C Pad B6 FISHER 6-22-70-4 Mar-05-2015**



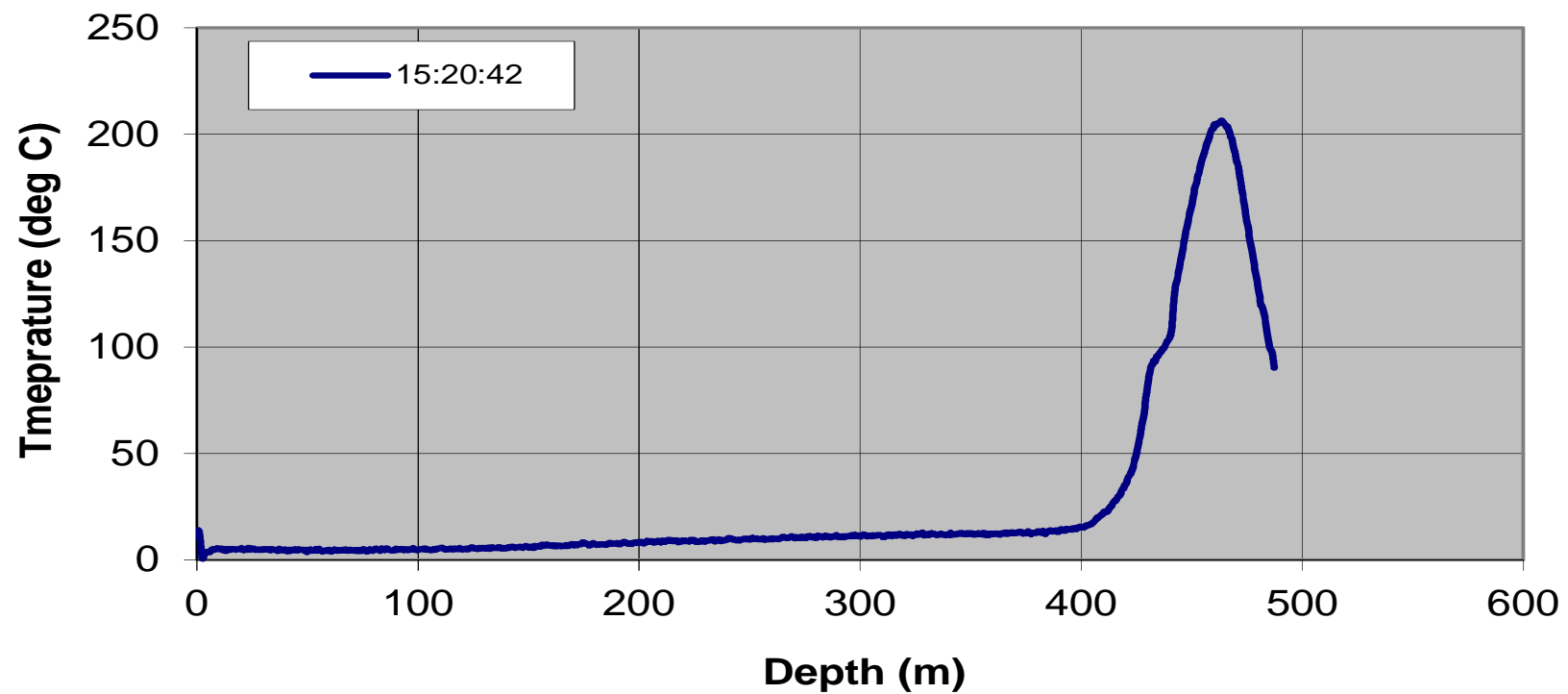
**Foster Creek Obs Well Temperature Data
D Pad D16 FISHER 16-15-70-4 Mar-03-2015**



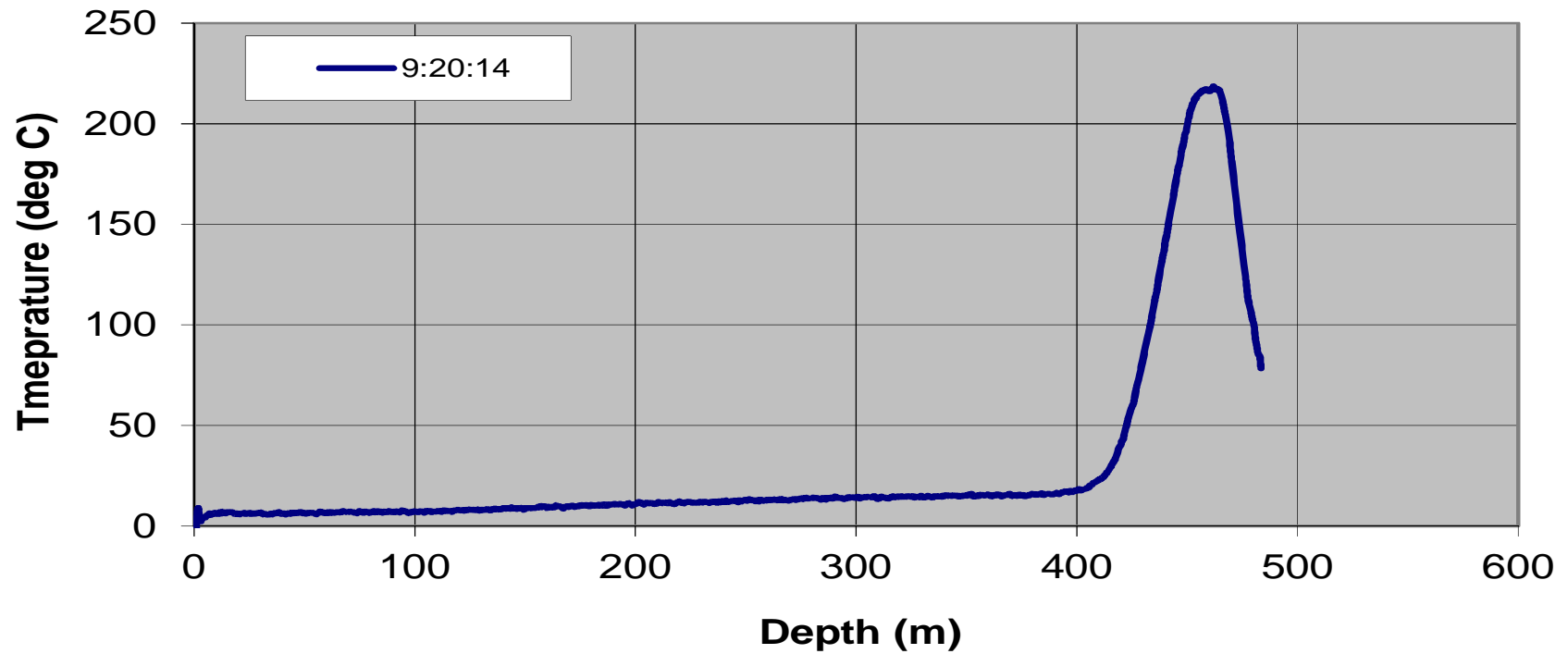
**Foster Creek Obs Well Temperature Data
F Pad A8 FISHER 8-15-70-4 Mar-02-2015**



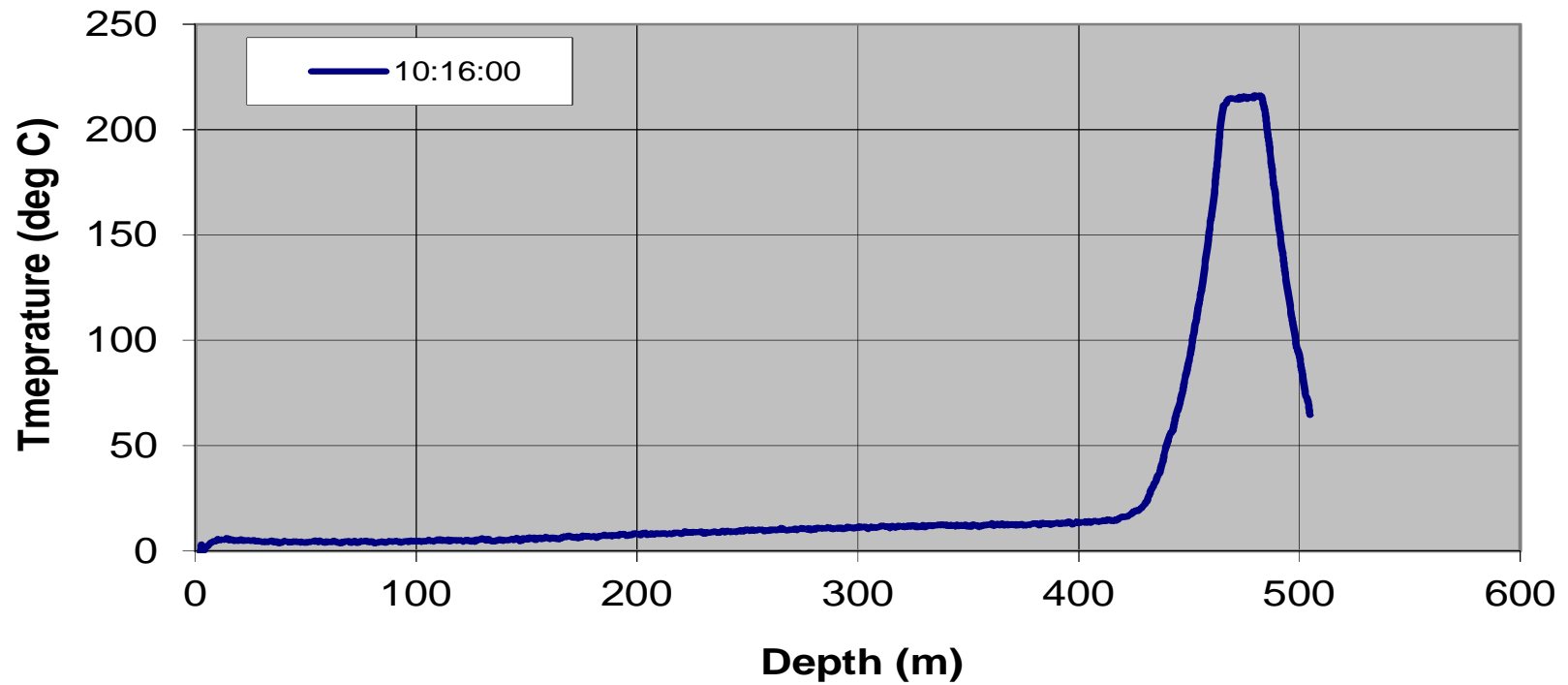
**Foster Creek Obs Well Temperature Data
A Pad 12C FISHER 12-22-70-4 Mar-05-2015**



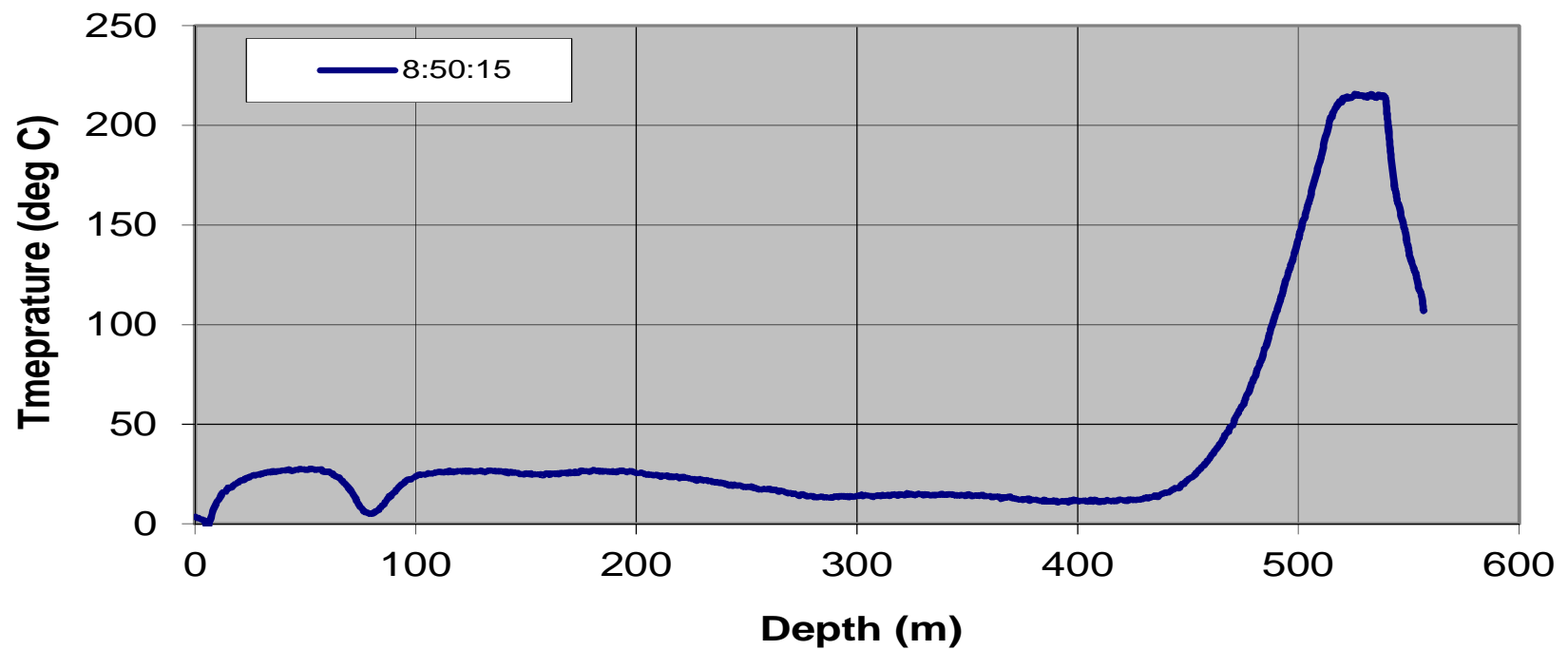
**Foster Creek Obs Well Temperature Data
D Pad C16 FISHER 16-15-70-4 Mar-04-2015**



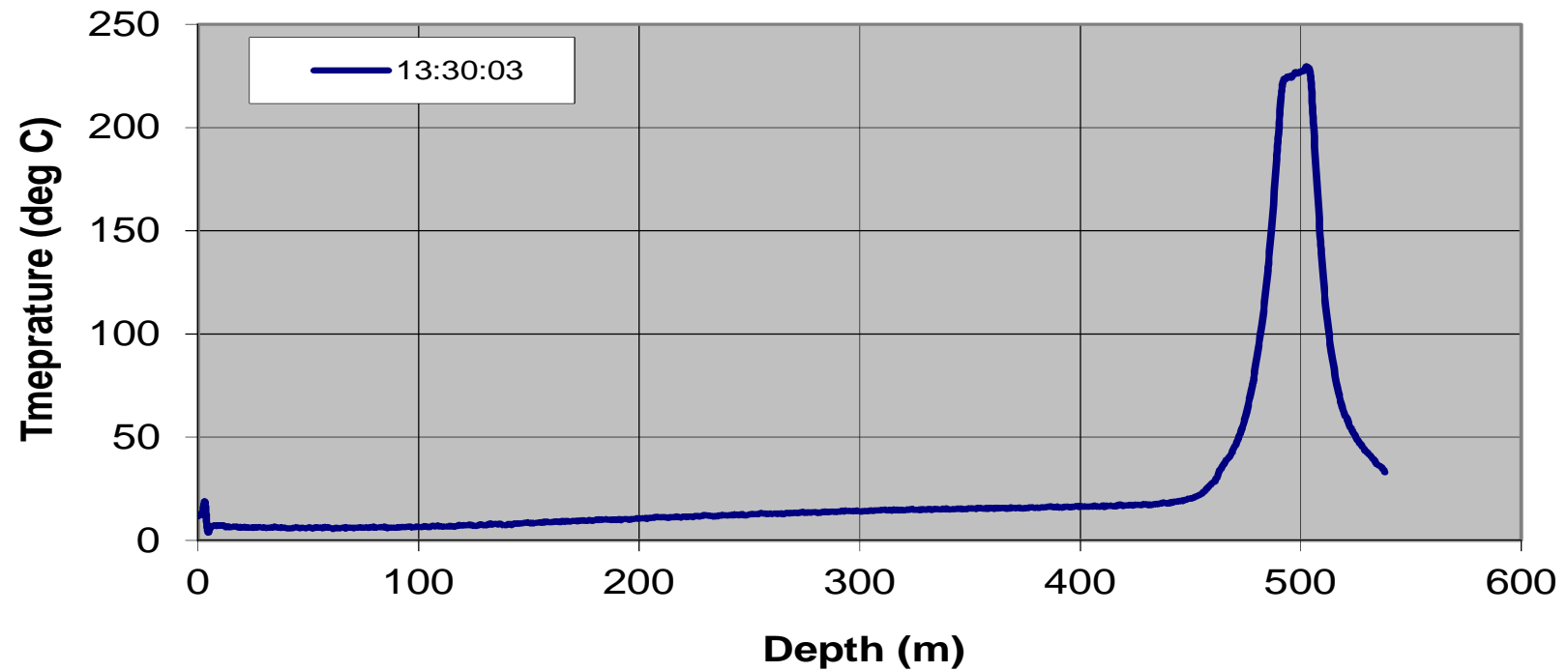
**Foster Creek Obs Well Temperature Data
G Pad B10 FISHER 10-15-70-4 Mar-03-2015**



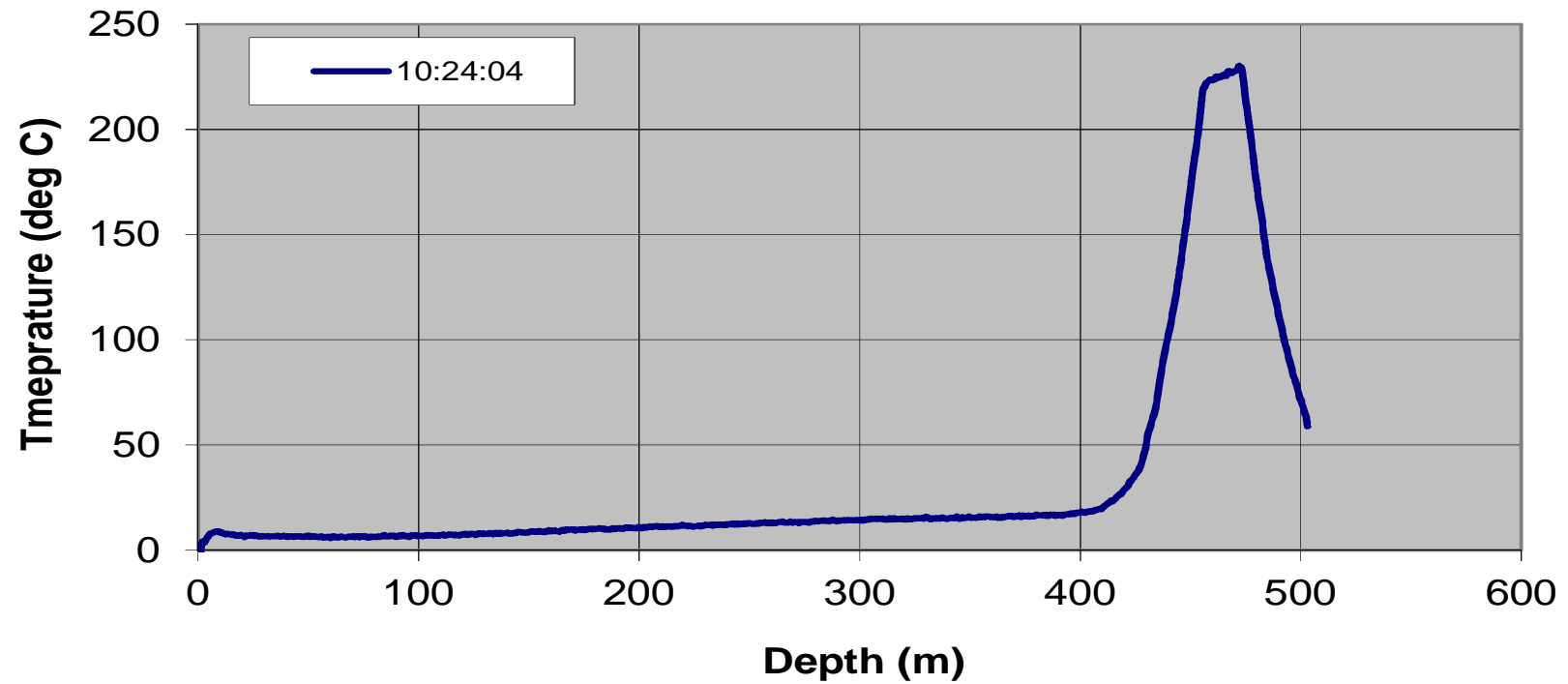
**Foster Creek Obs Well Temperature Data
A Pad 5-22 FISHER 5-22-70-4 Mar-06-2015**



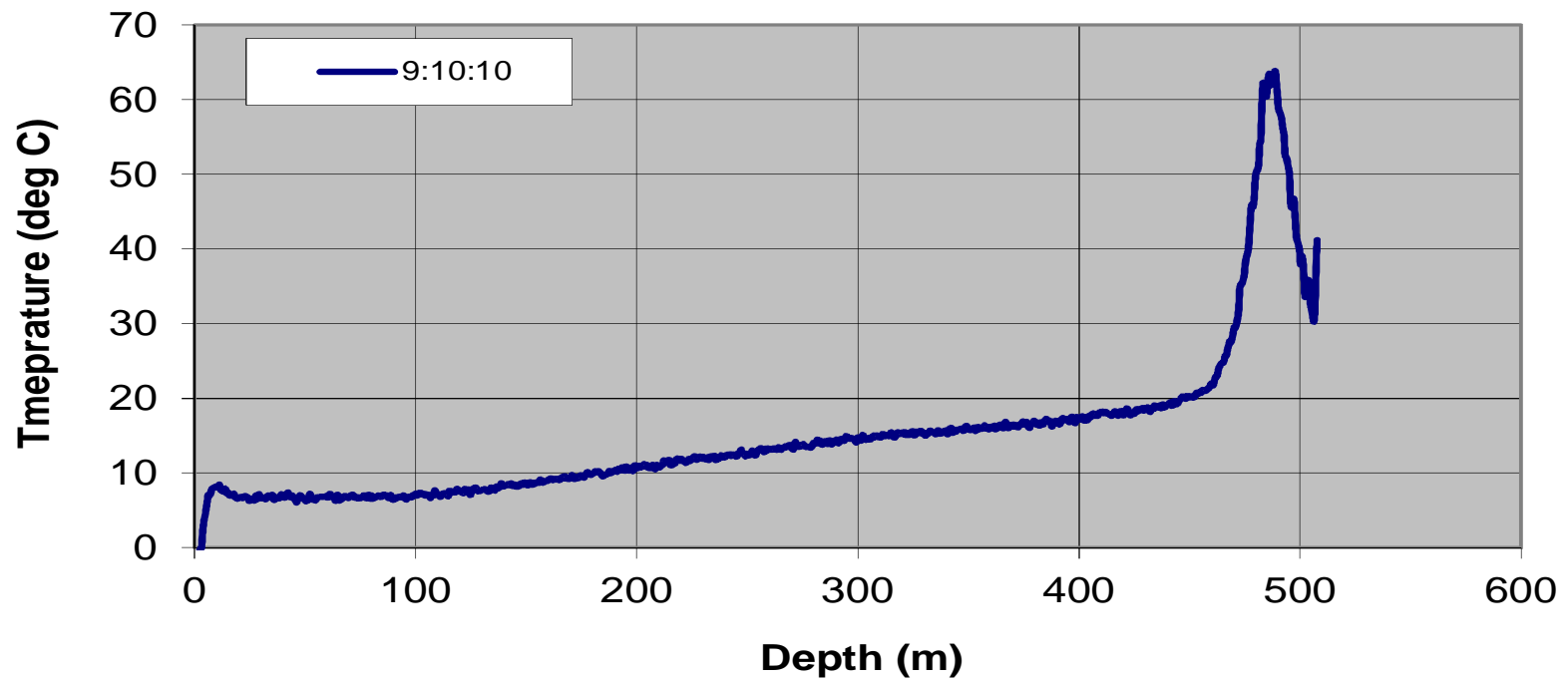
**Foster Creek Obs Well Temperature Data
B Pad 3-21 FISHER 3-21-70-4 Jan-18-2014**



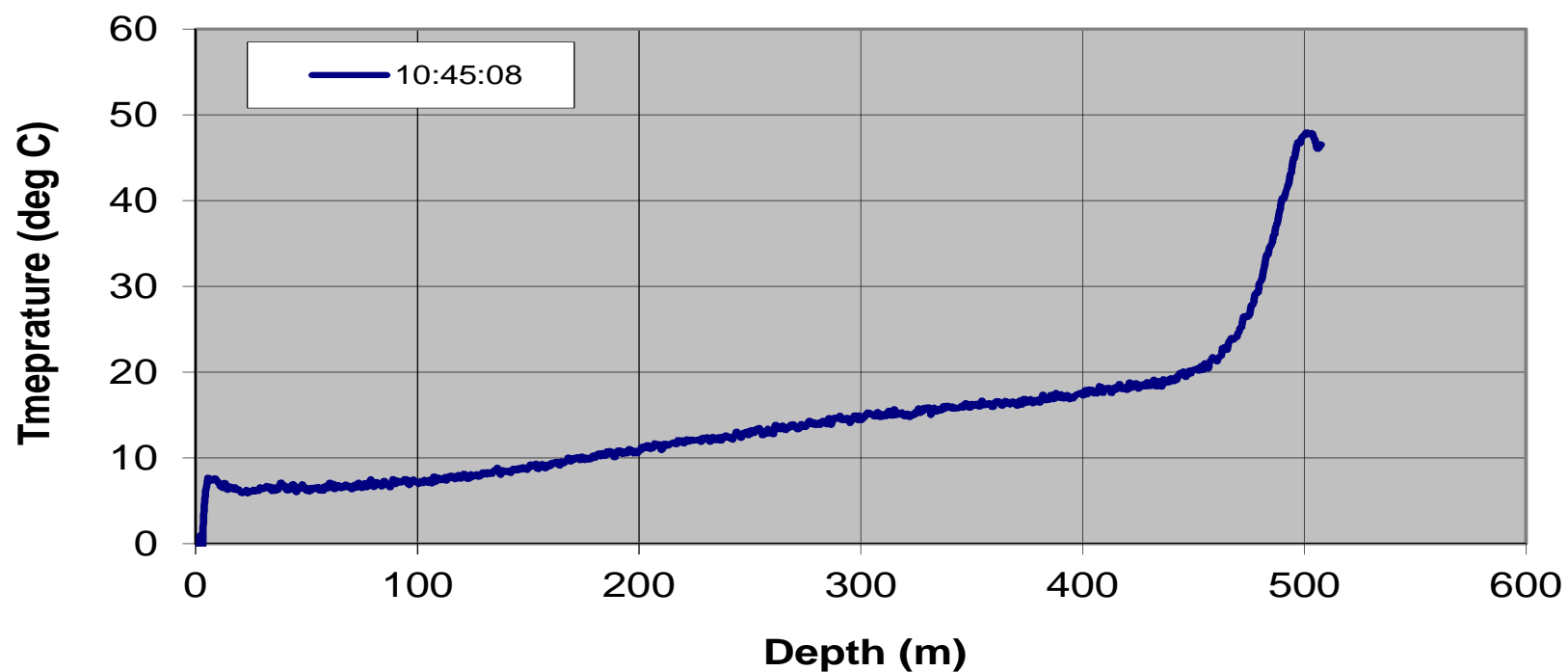
**Foster Creek Obs Well Temperature Data
E Pad 13C FISHER 13-15-70-4 Jan-09-2014**



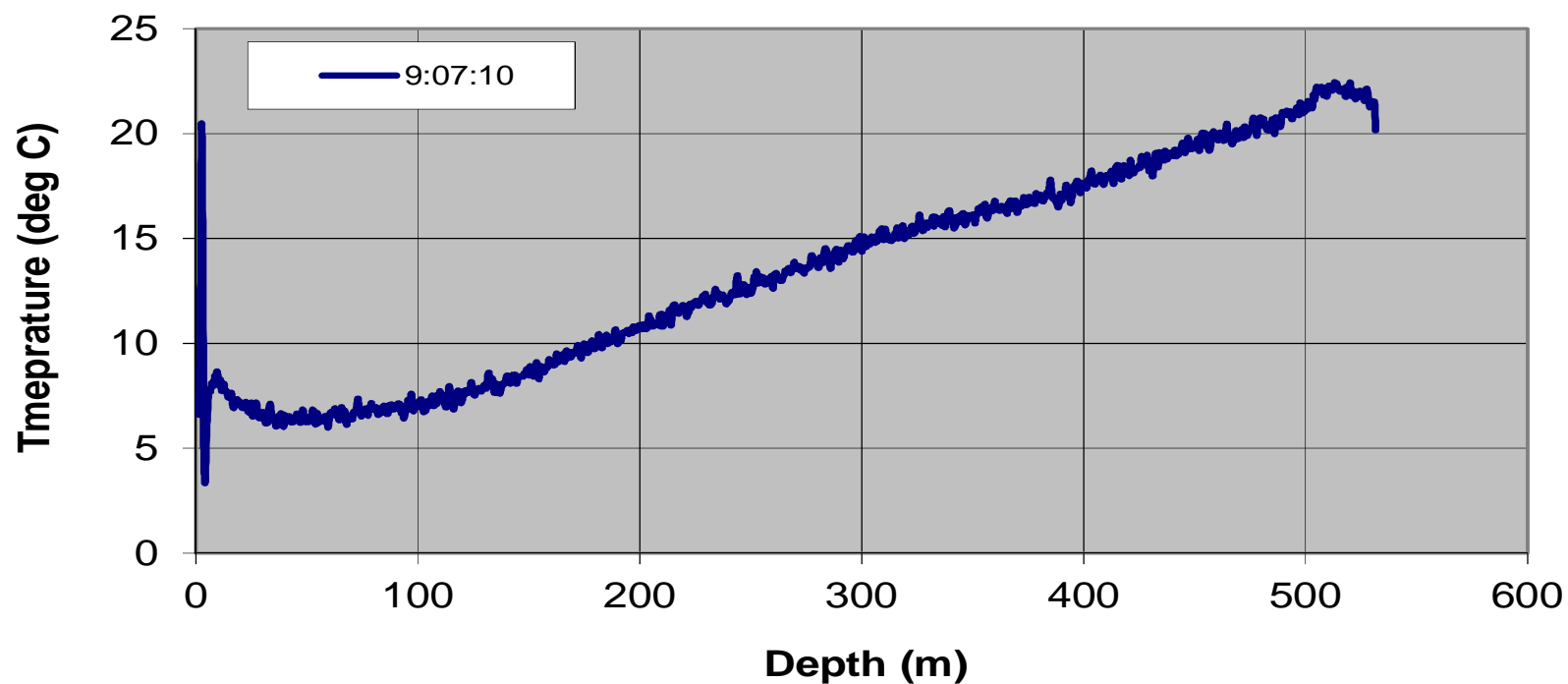
**Foster Creek Obs Well Temperature Data
E02 Pad A15 FISHER 15-13-70-4 Jan-22-2014**



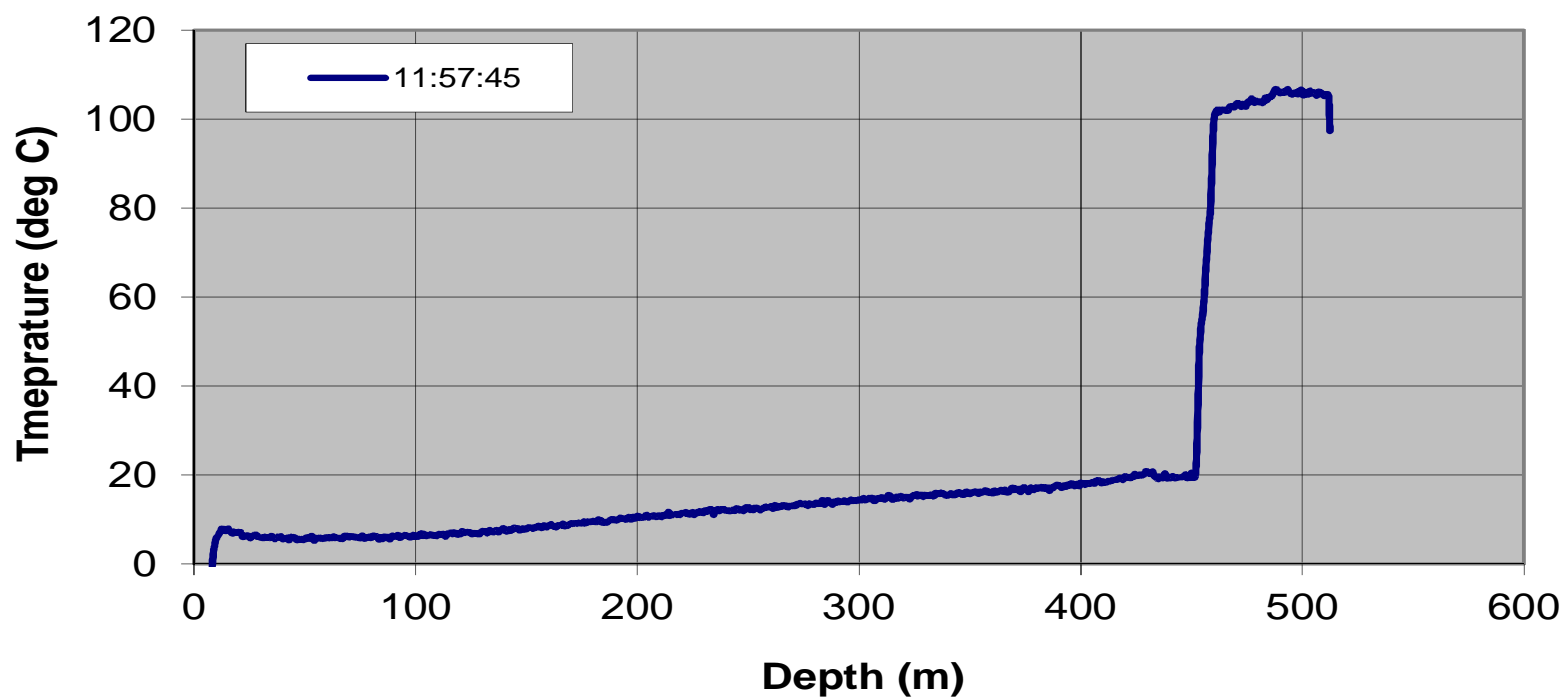
**Foster Creek Obs Well Temperature Data
E02 Pad D7 FISHER 7-13-70-4 Jan-22-2014**



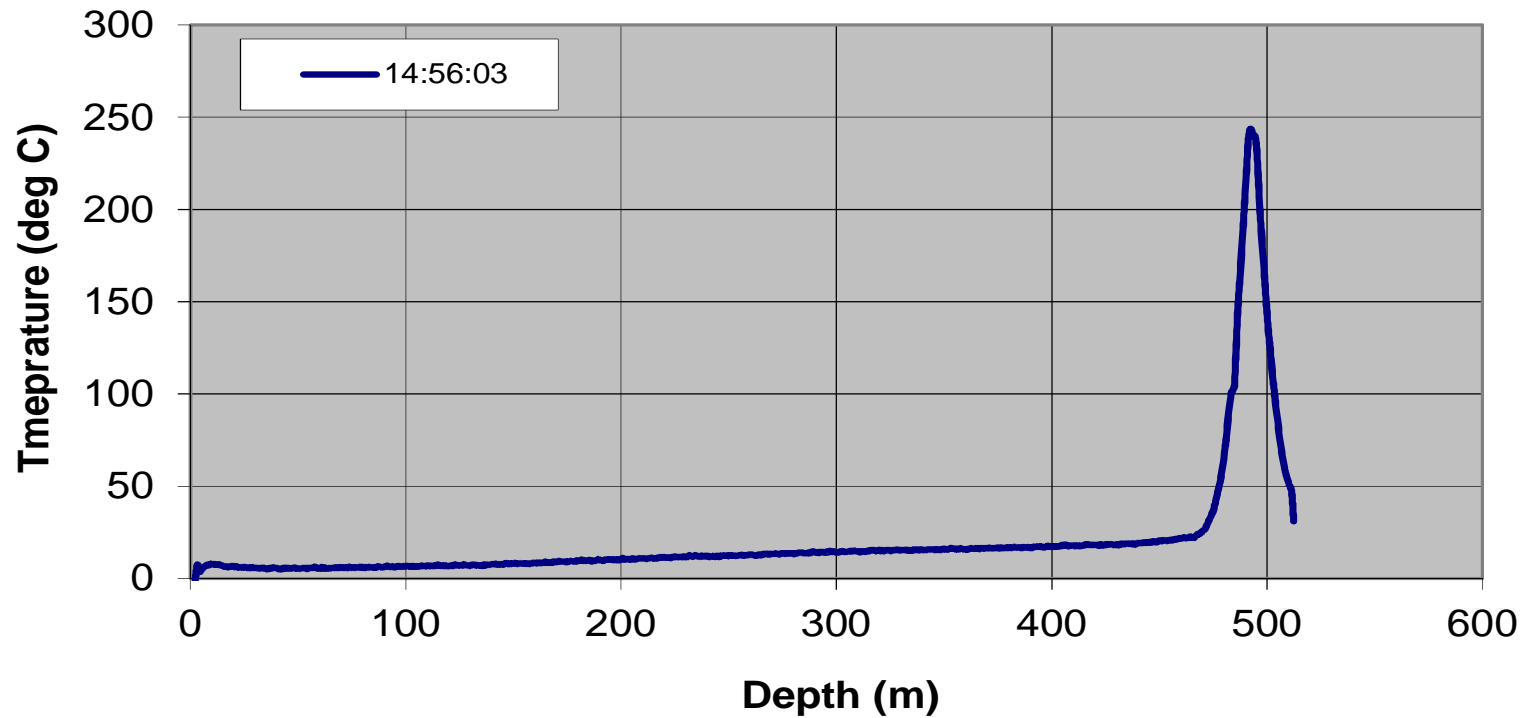
**Foster Creek Obs Well Temperature Data
E03 Pad C4 FISHER 4-18-70-4 Jan-24-2014**



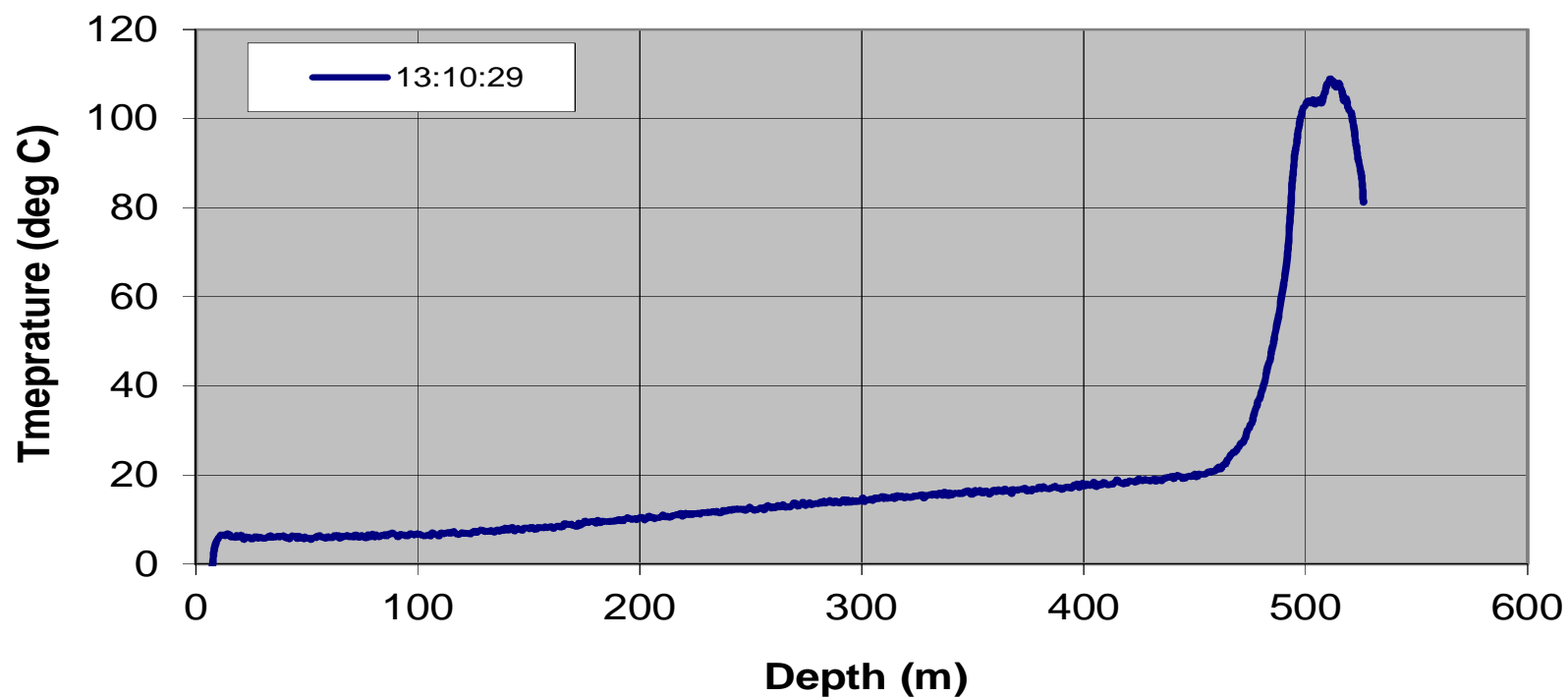
**Foster Creek Obs Well Temperature Data
E04 Pad A10 FISHER 10-18-70-3 Jan-14-2014**



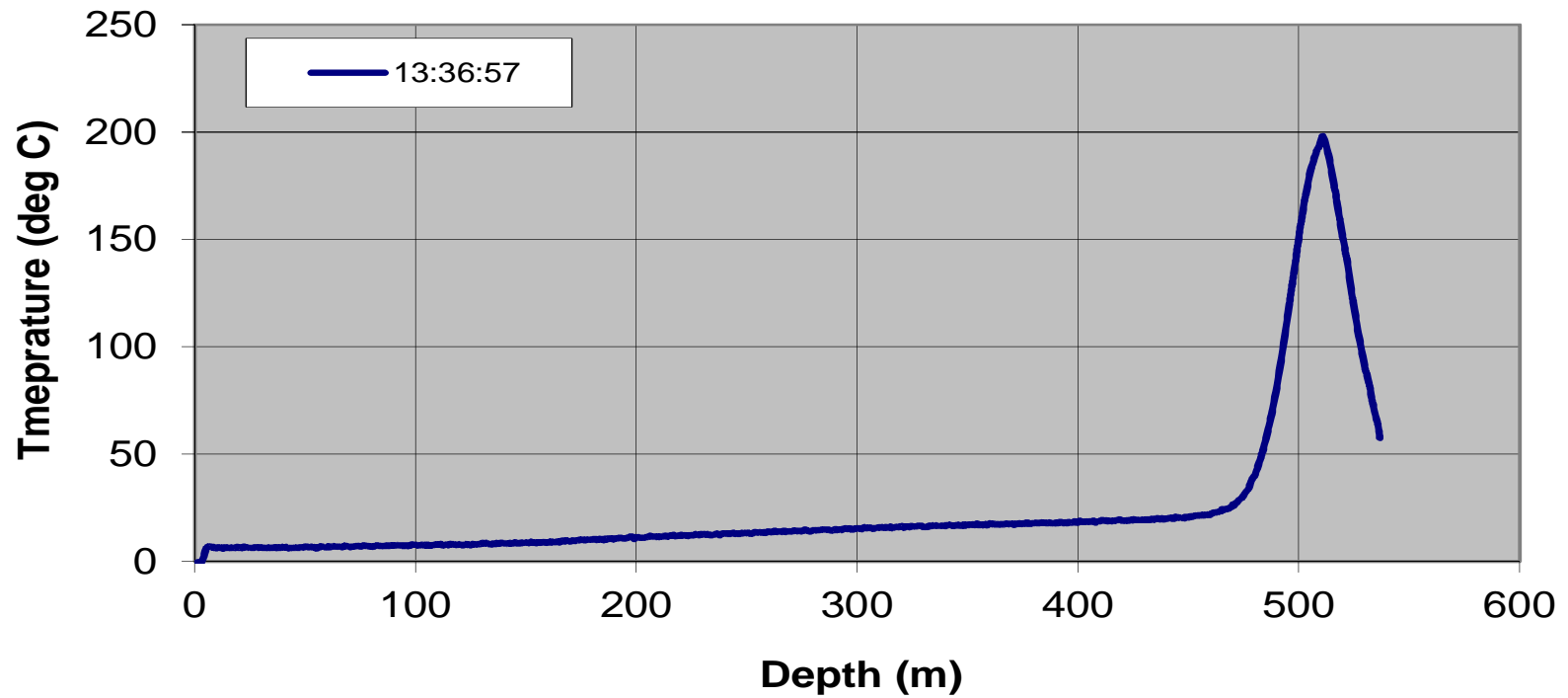
**Foster Creek Obs Well Temperature Data
E04 Pad A15 FISHER 15-18-70-3 Jan-14-2014**



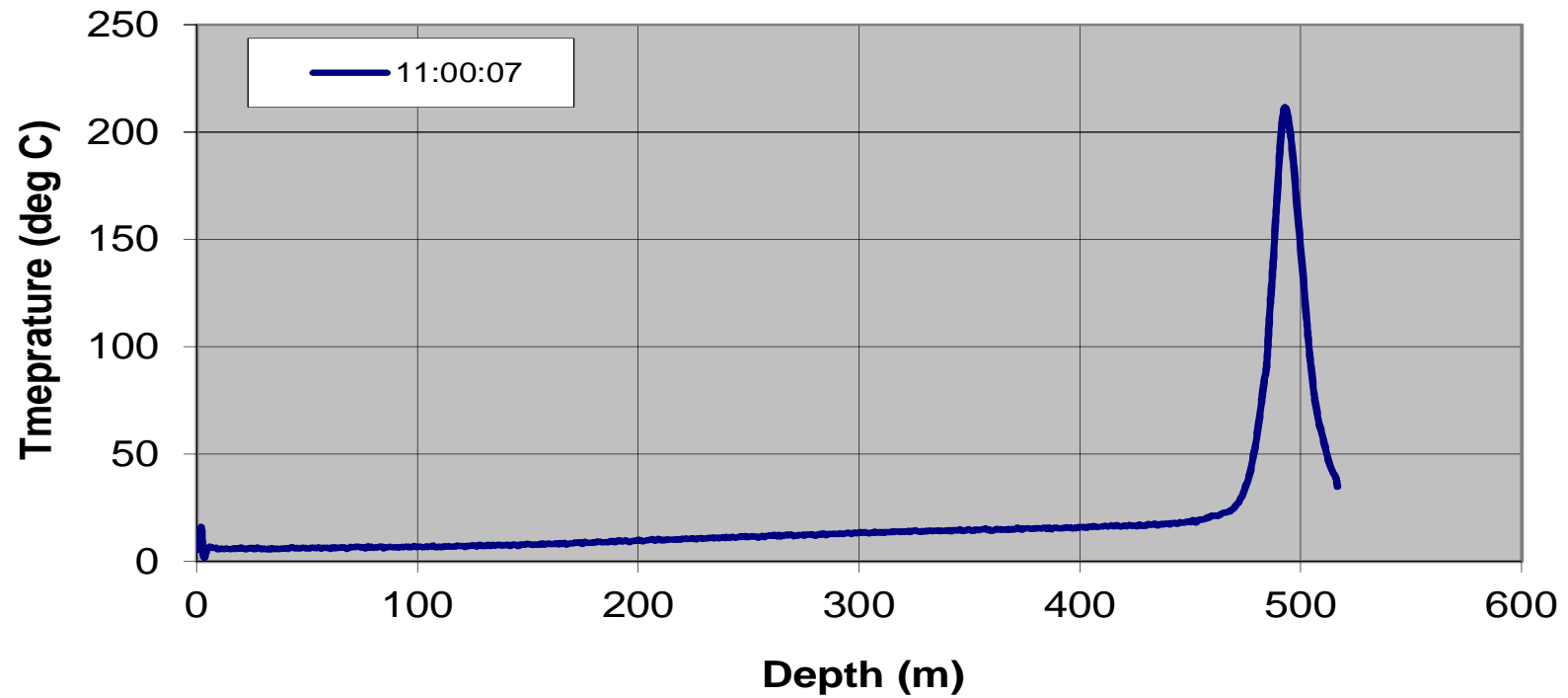
**Foster Creek Obs Well Temperature Data
E10 Pad FISHER 03-17-70-3 Jan-12-2014**



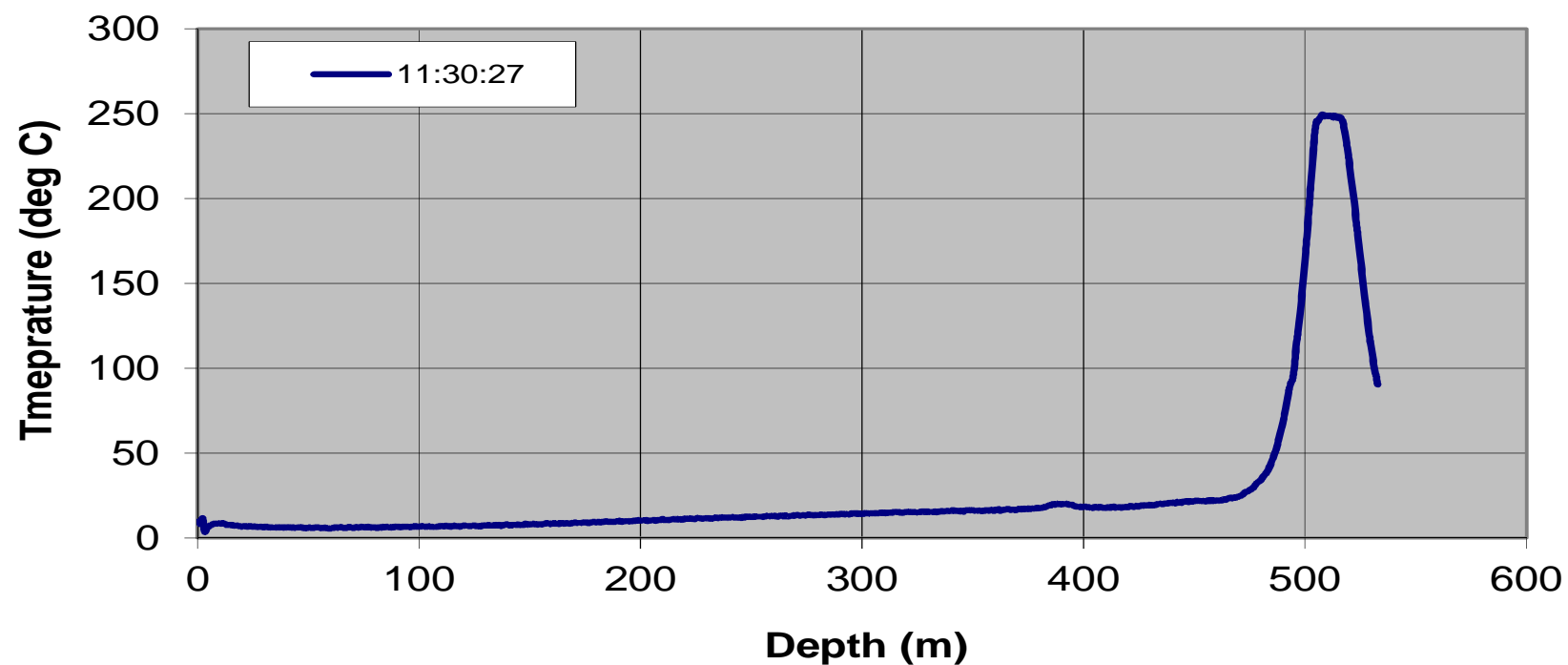
**Foster Creek Obs Well Temperature Data
E11 Pad 12C FISHER 12-08-70-3 Jan-10-2014**



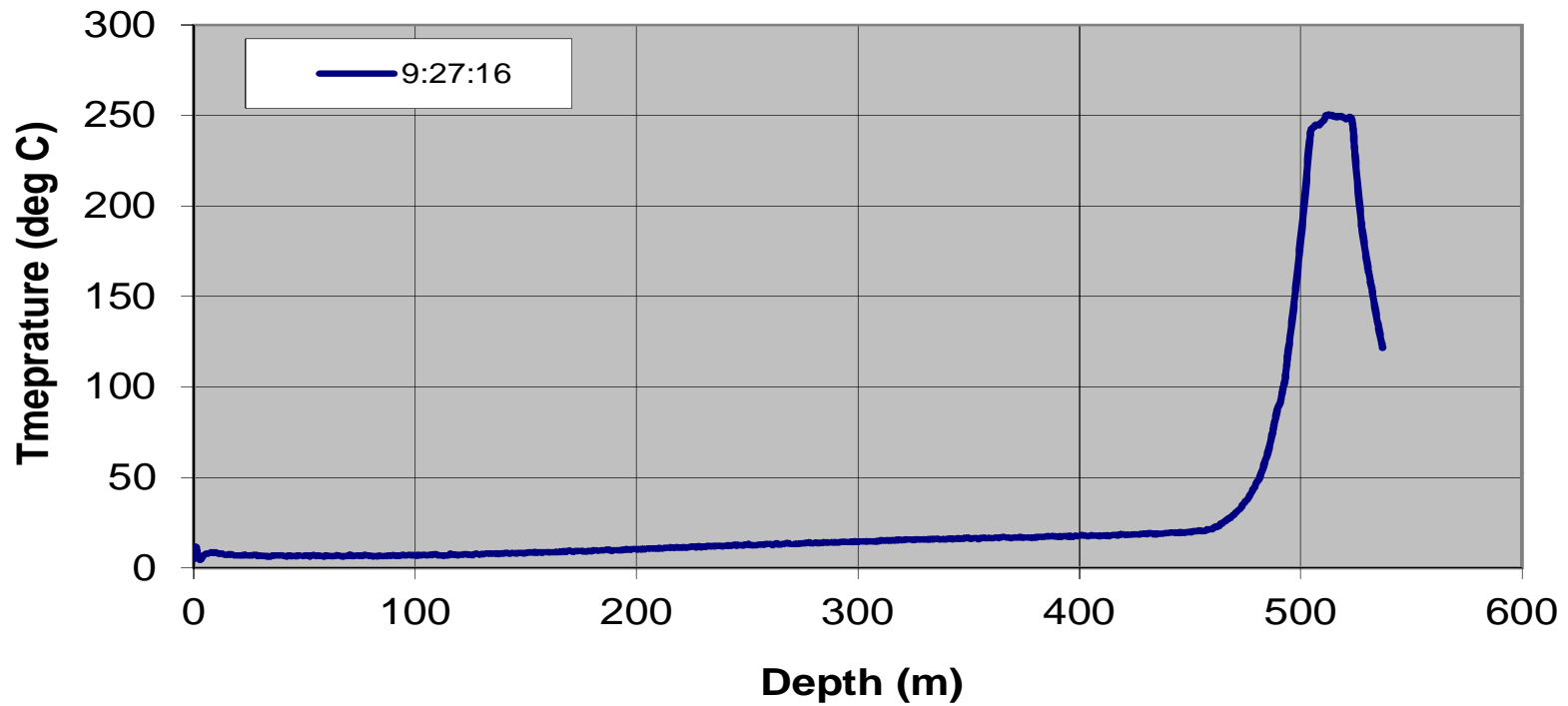
**Foster Creek Obs Well Temperature Data
E12 Pad 2A15 FISHER 15-17-70-3 Jan-24-2014**



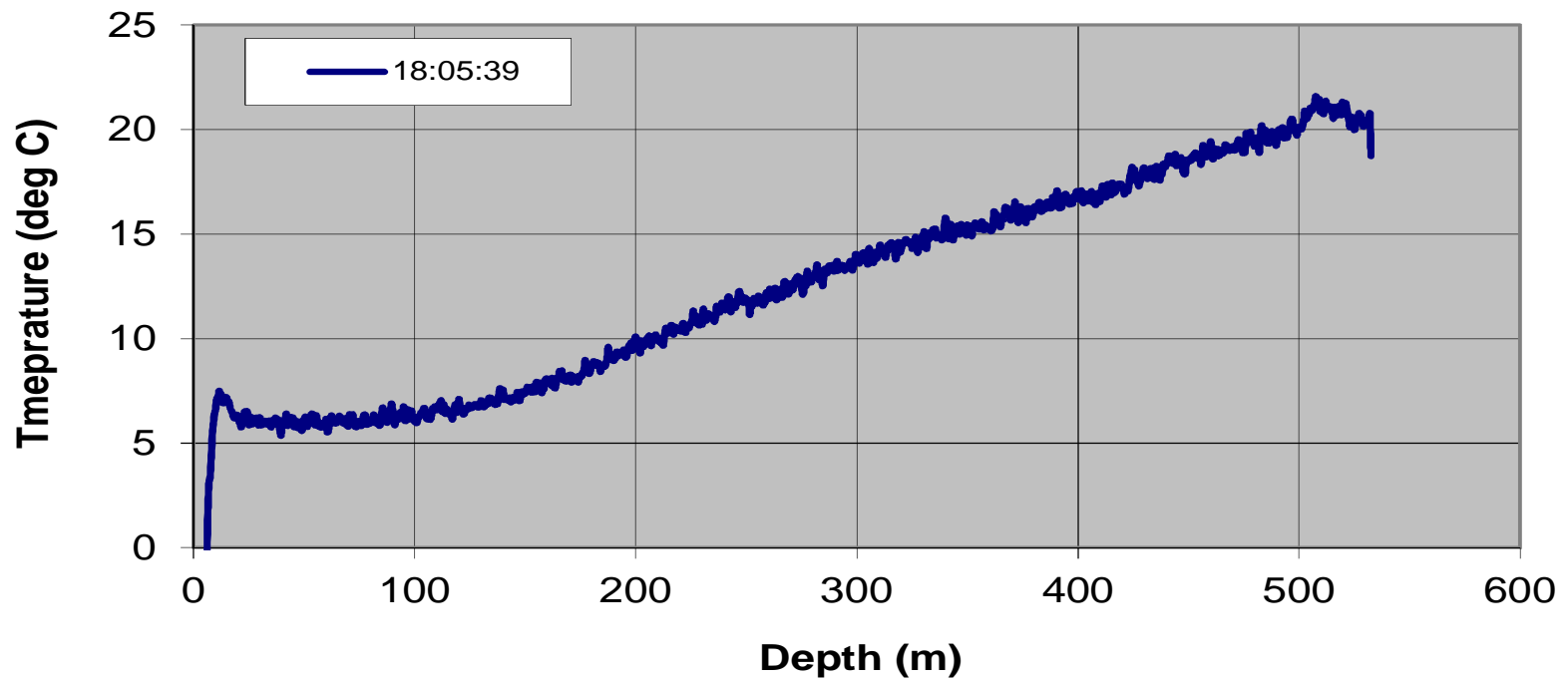
**Foster Creek Obs Well Temperature Data
E12 Pad B6 FISHER 06-17-70-3 Jan-19-2014**



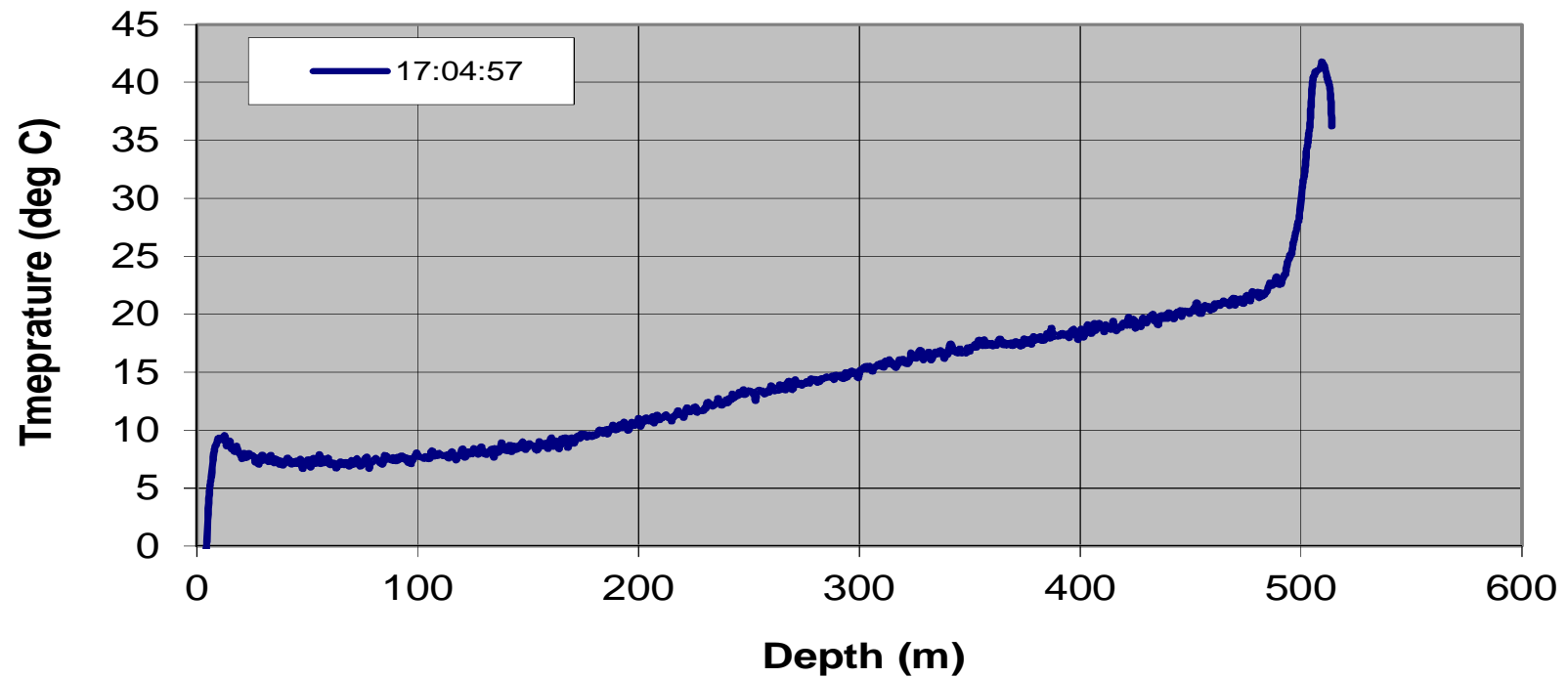
**Foster Creek Obs Well Temperature Data
E12 Pad B7 FISHER 07-17-70-3 Jan-19-2014**



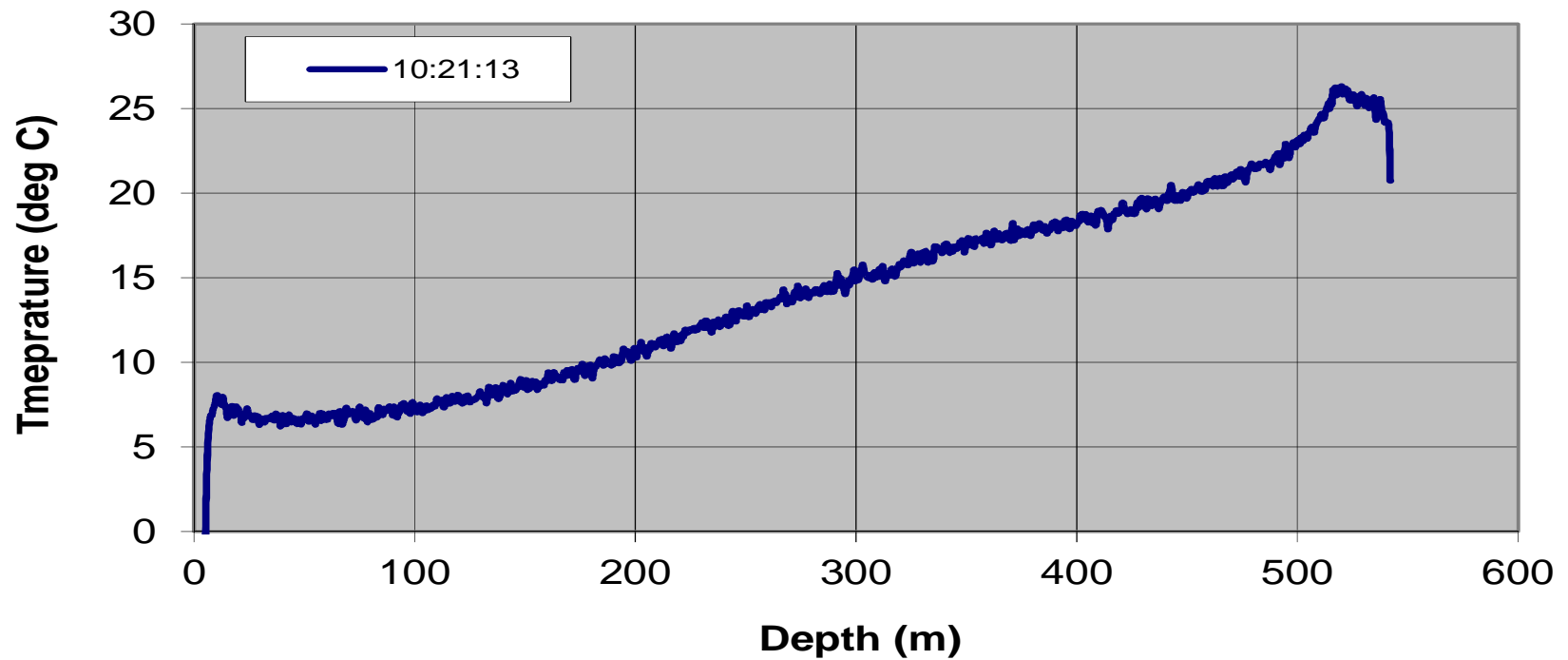
**Foster Creek Obs Well Temperature Data
E12 Pad C8 FISHER 11-17-70-3 Jan-11-2014**



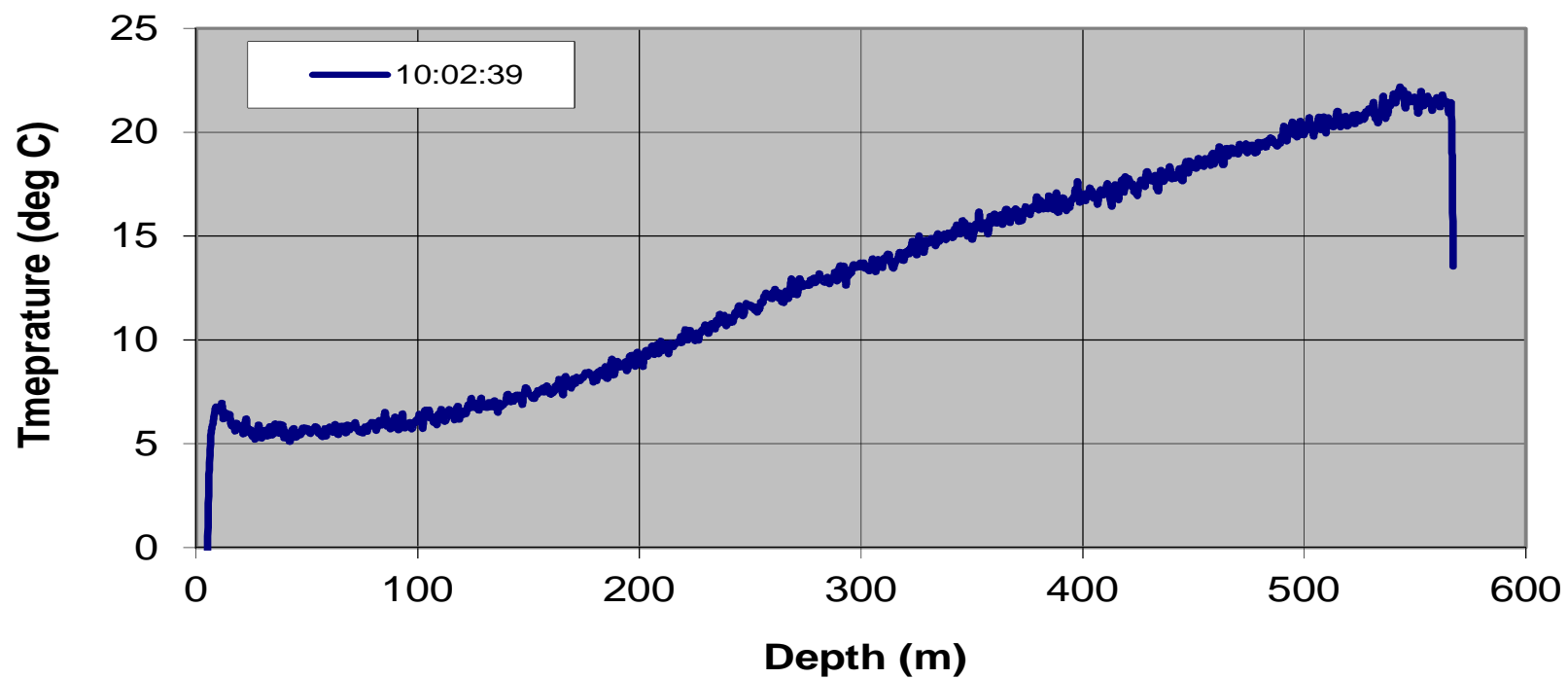
**Foster Creek Obs Well Temperature Data
E15 Pad C8 FISHER 08-16-70-3 Jan-10-2014**



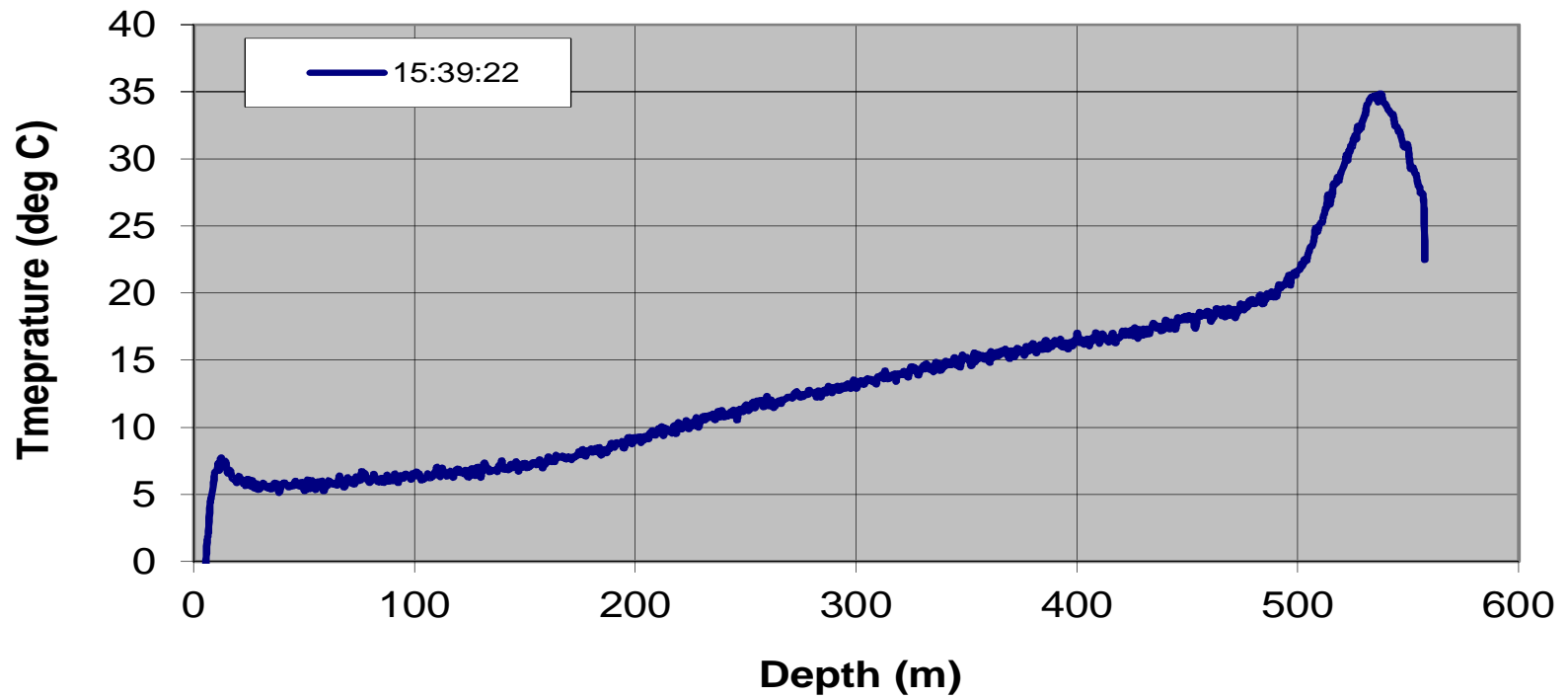
**Foster Creek Obs Well Temperature Data
E16 Pad A12 FISHER 12-15-70-3 Jan-11-2014**



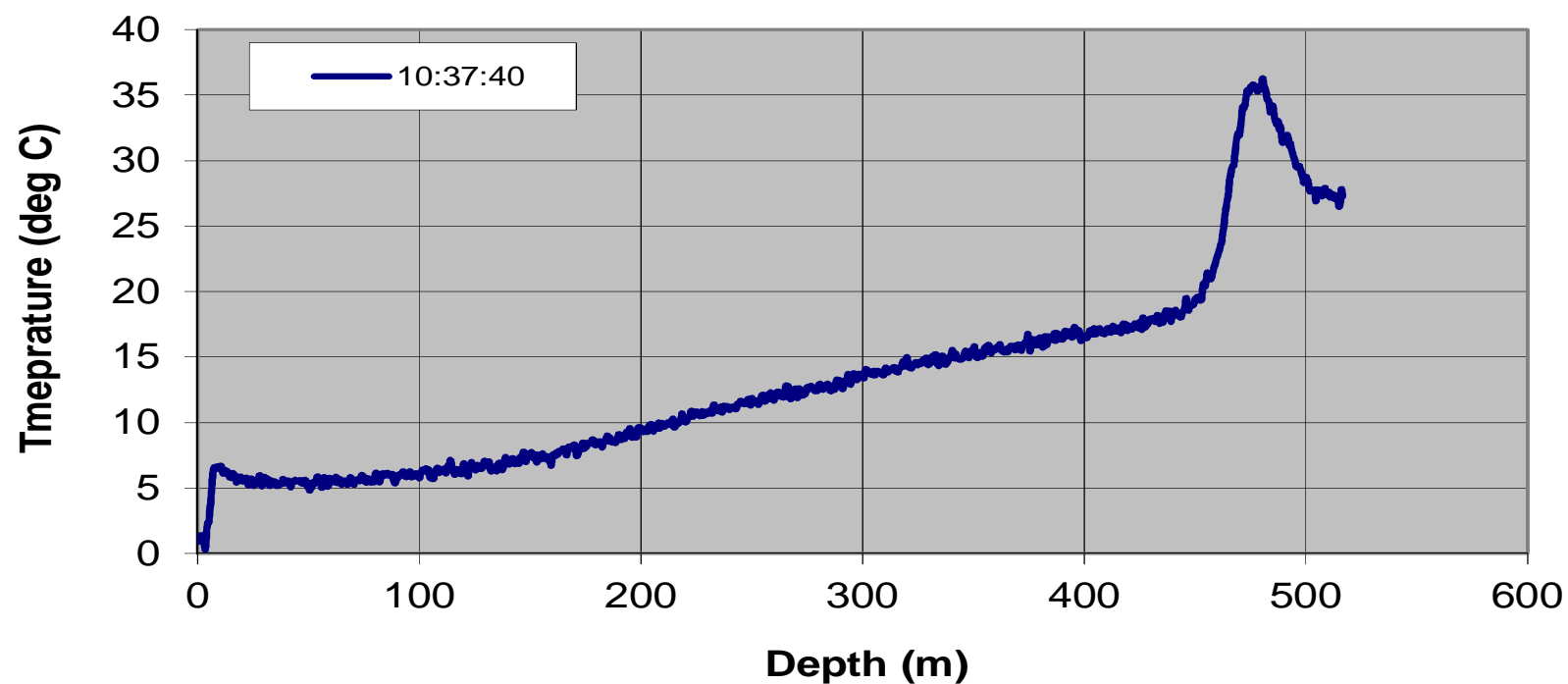
**Foster Creek Obs Well Temperature Data
E16 Pad D11 FISHER 11-15-70-3 Jan-14-2014**



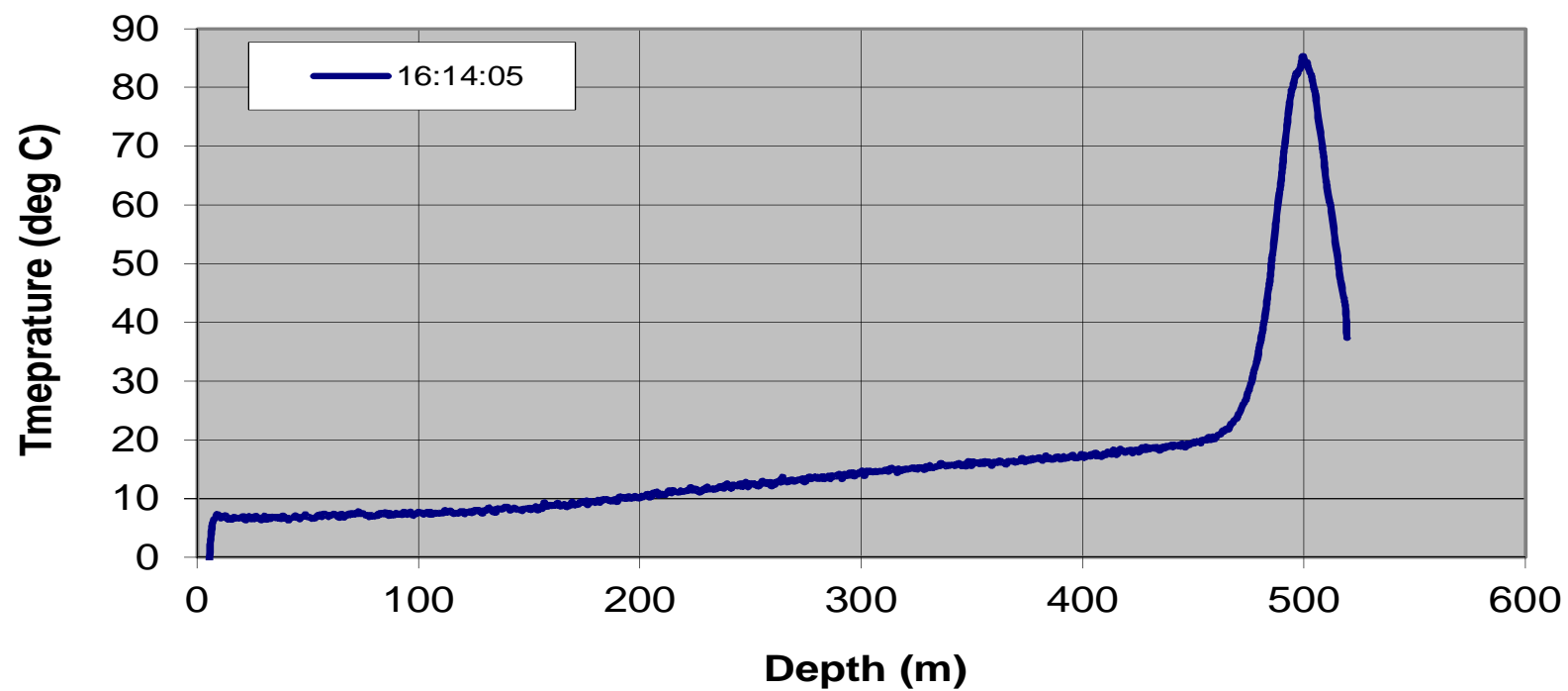
**Foster Creek Obs Well Temperature Data
E19 Pad B5 FISHER 05-22-70-3 Jan-13-2014**



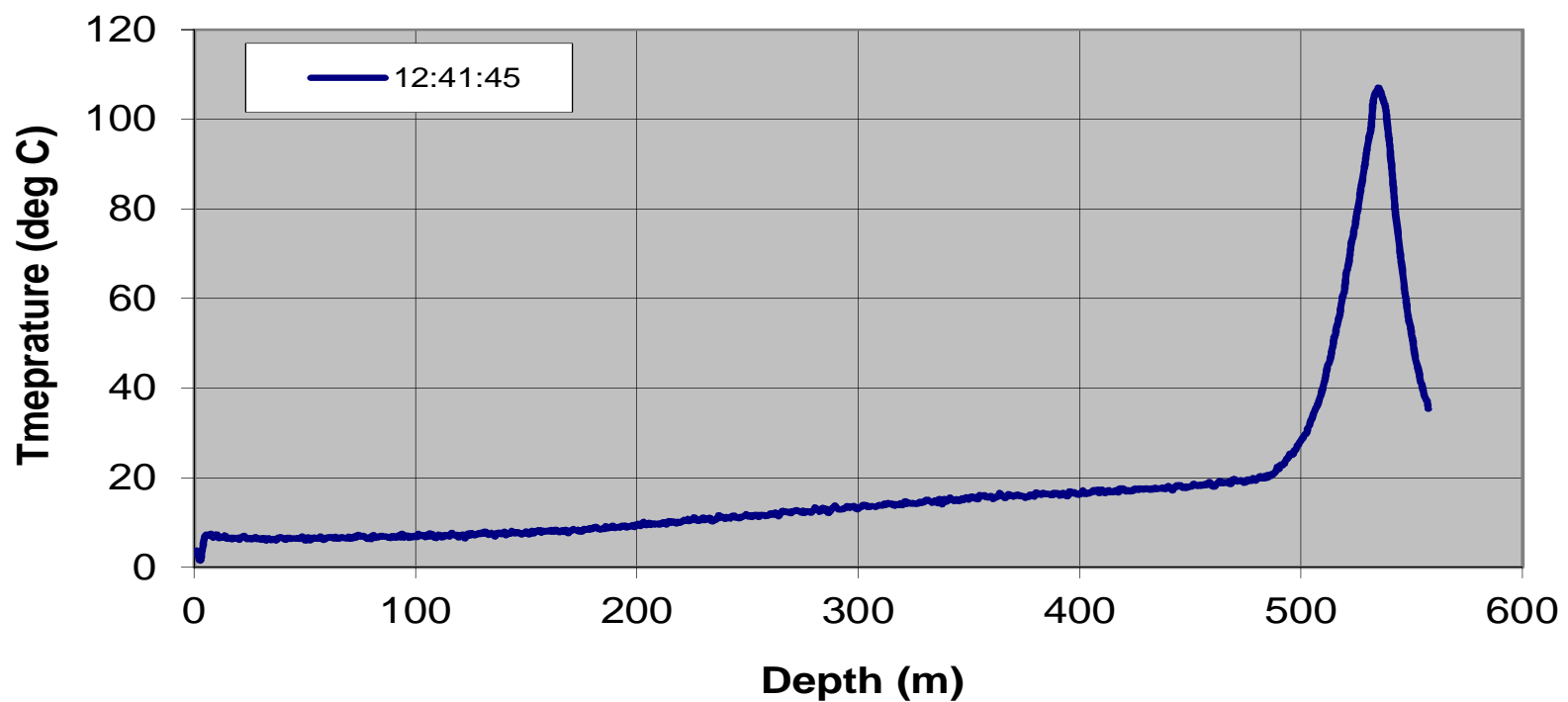
**Foster Creek Obs Well Temperature Data
E19 Pad A10 FISHER 08-21-70-3 Jan-13-2014**



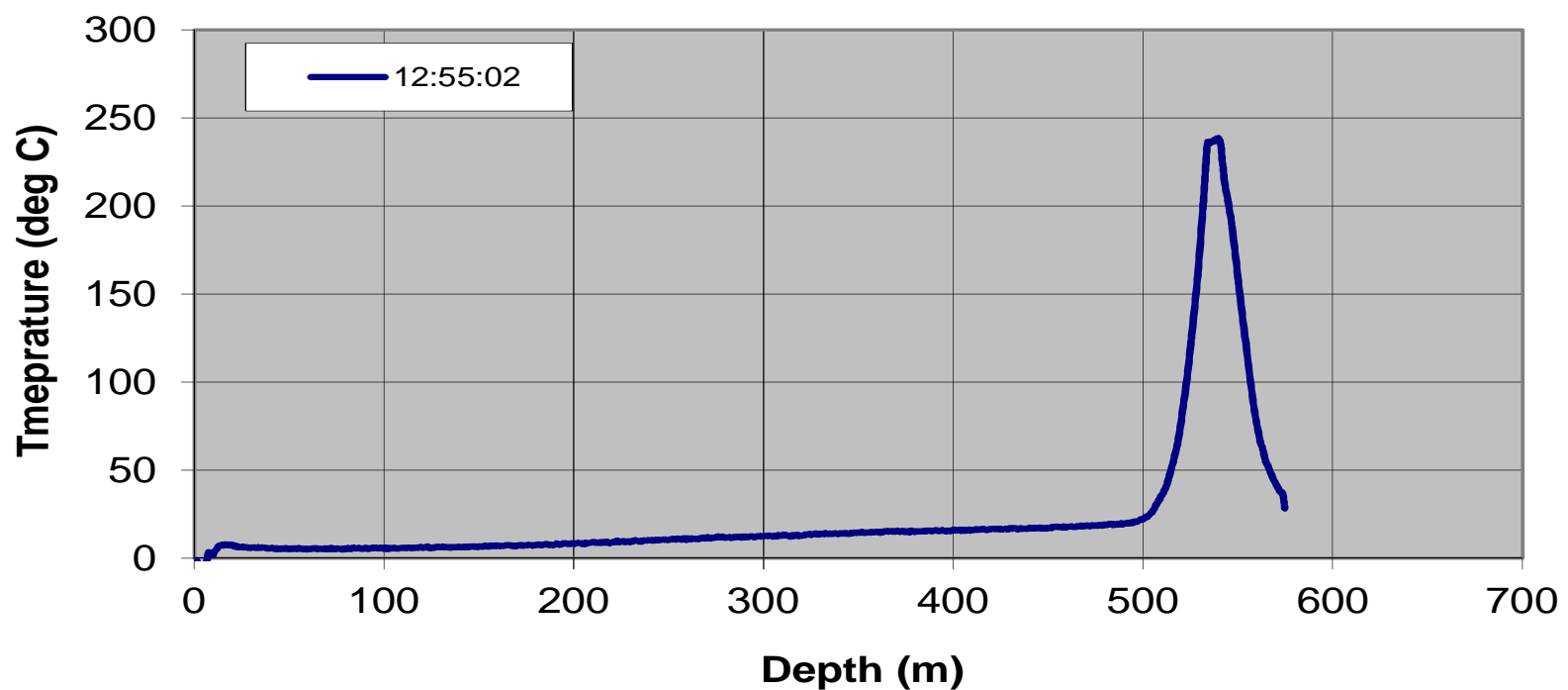
**Foster Creek Obs Well Temperature Data
E19 Pad D14 FISHER 14-16-70-3 Jan-12-2014**



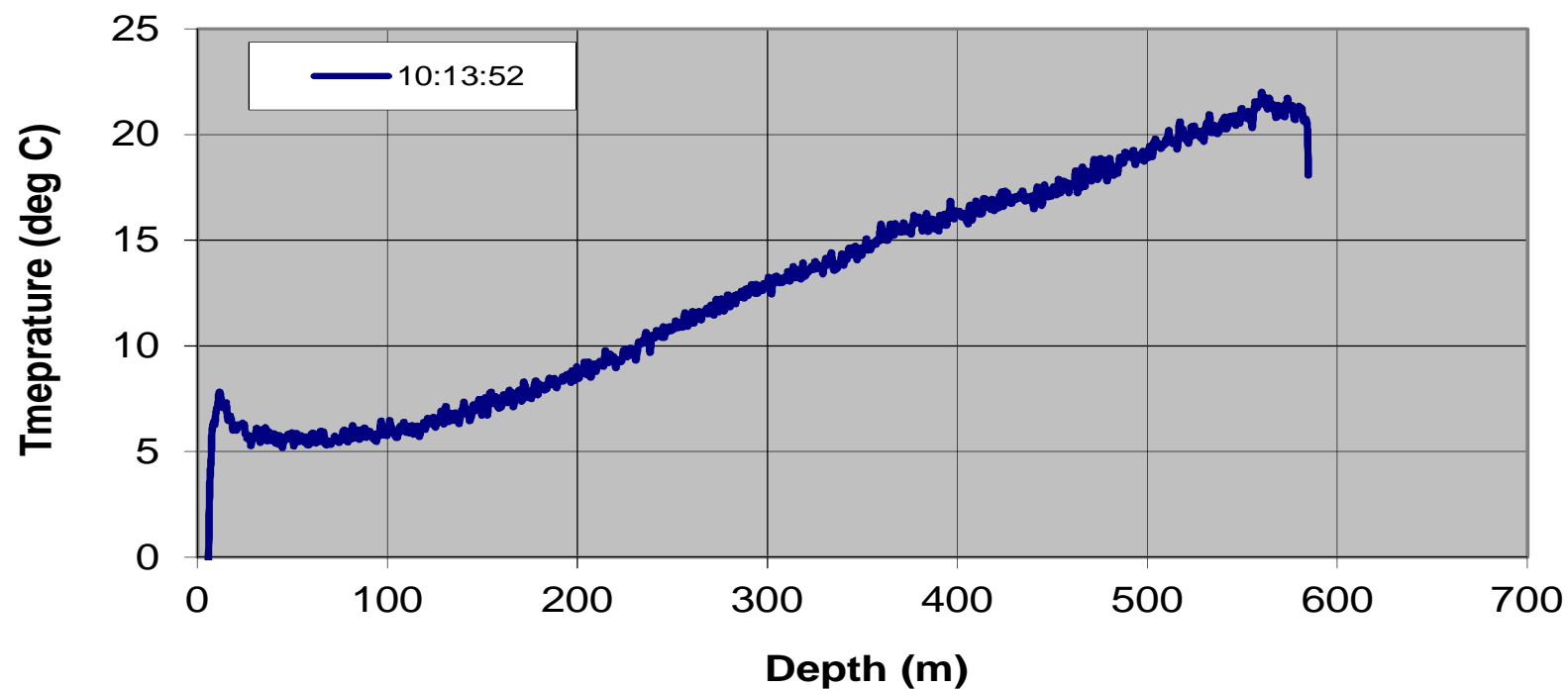
**Foster Creek Obs Well Temperature Data
E20 Pad A6 FISHER 6-22-70-3 Jan-16-2014**



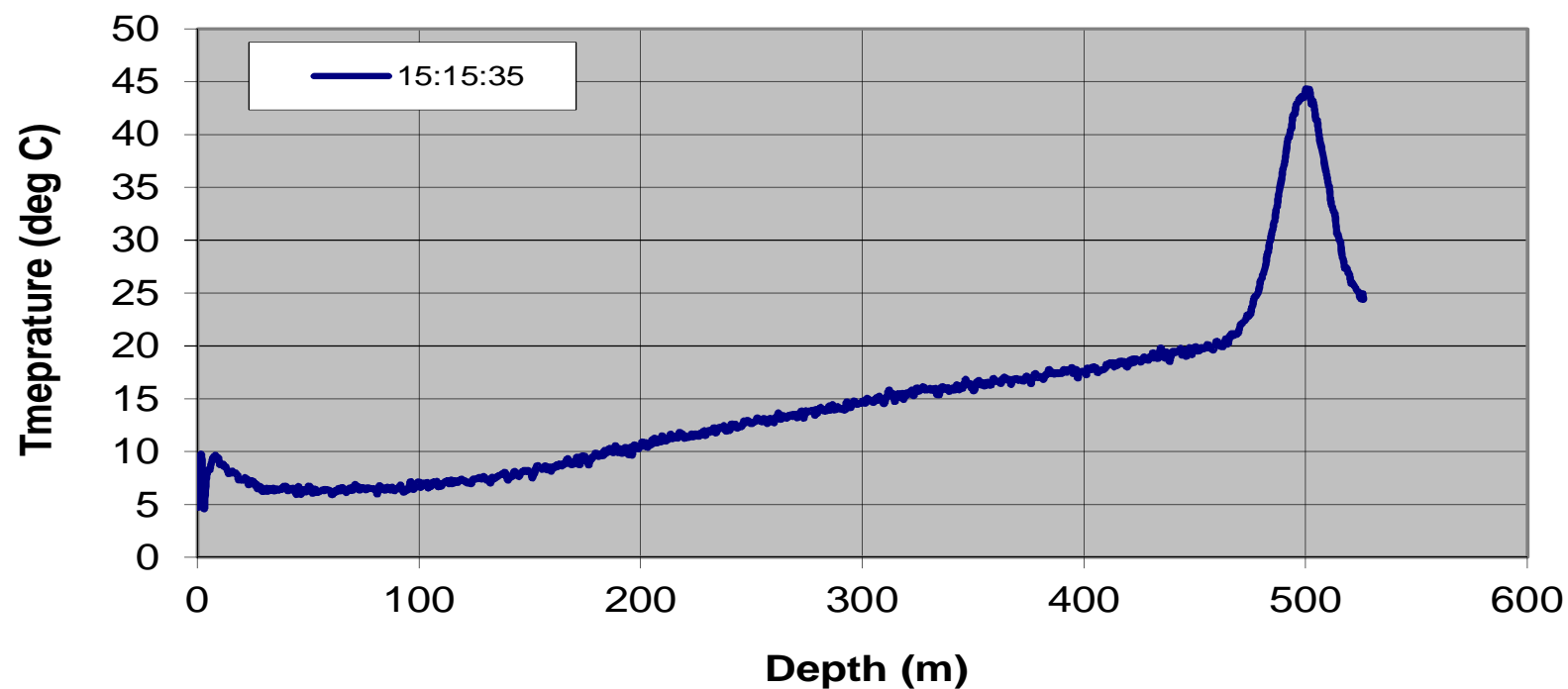
**Foster Creek Obs Well Temperature Data
E20 Pad B7 FISHER 7-22-70-3 Jan-13-2014**



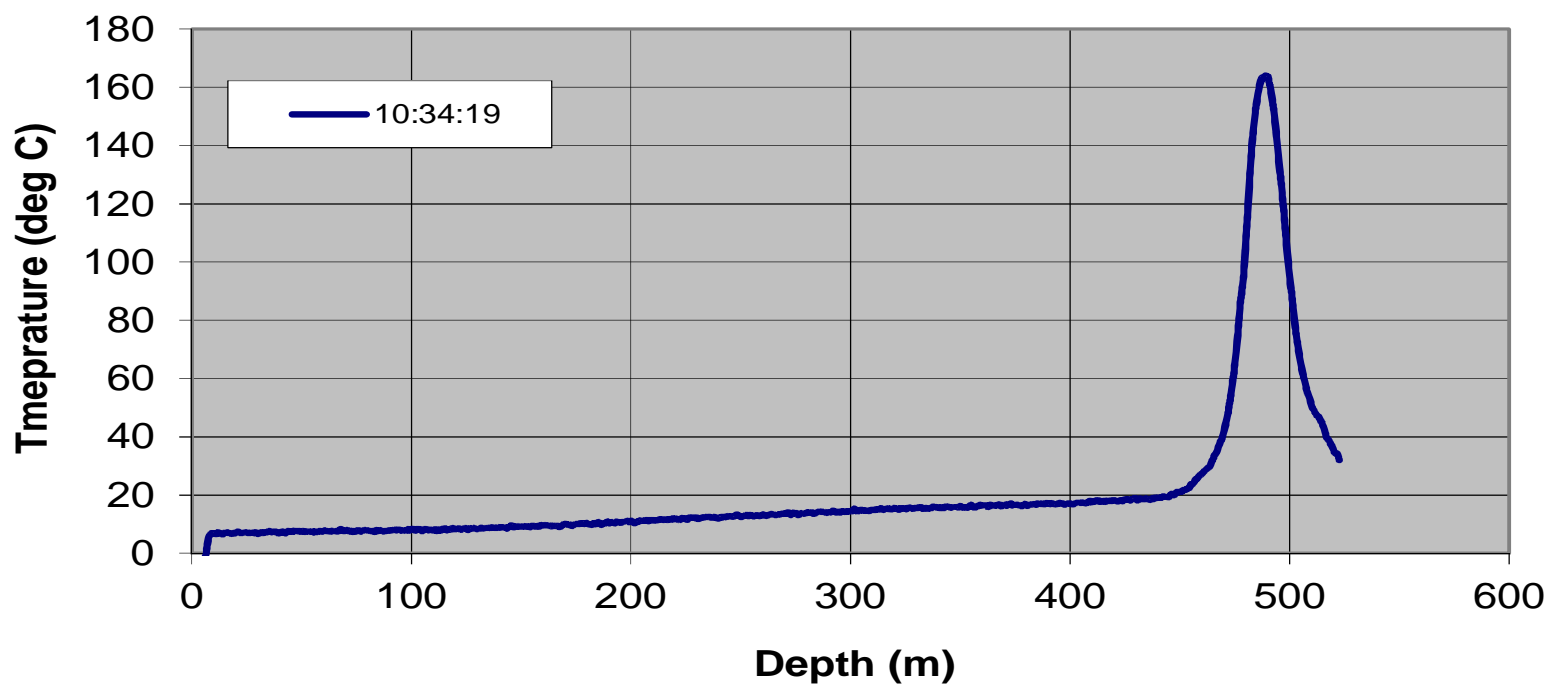
**Foster Creek Obs Well Temperature Data
E20 Pad D2 FISHER 2-22-70-3 Jan-13-2014**



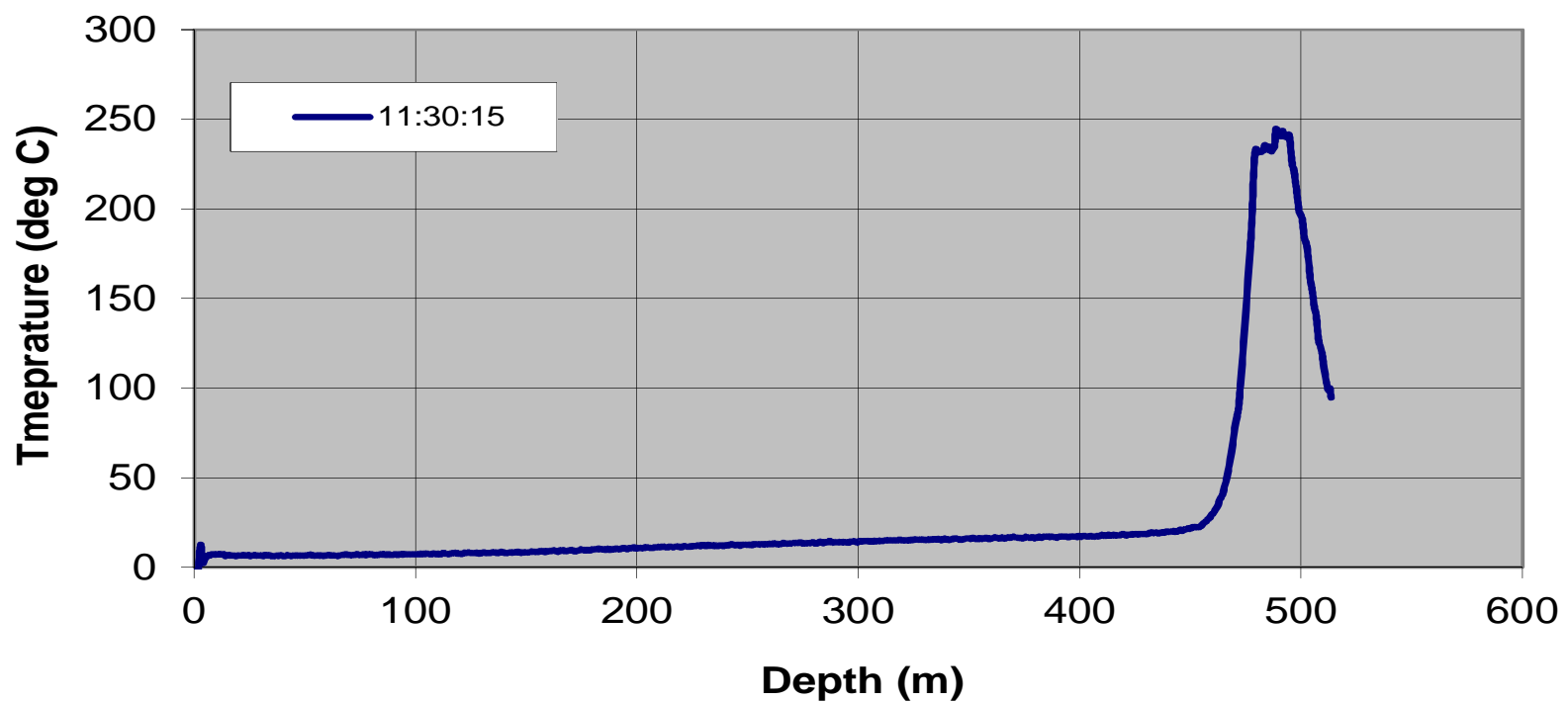
**Foster Creek Obs Well Temperature Data
E20 Pad D3 FISHER 3-21-70-3 Jan-16-2014**



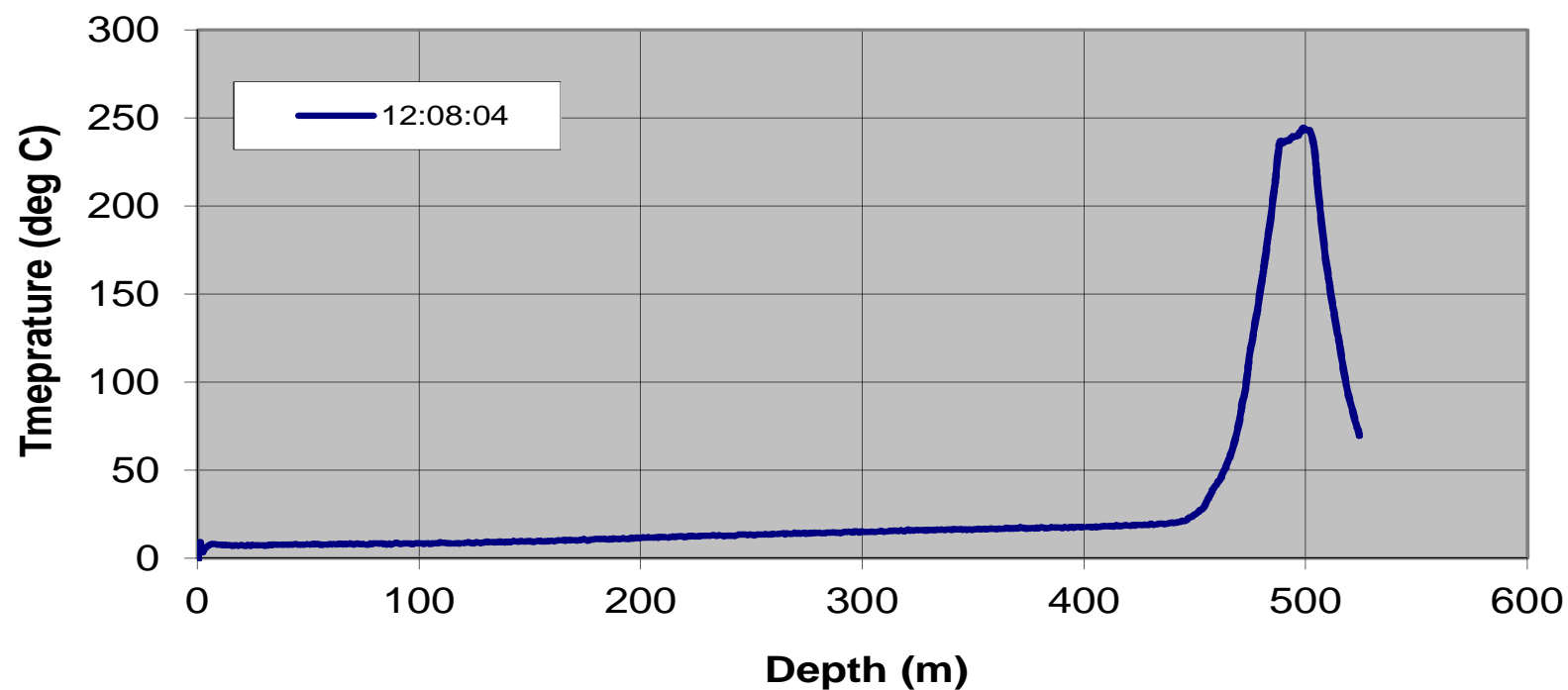
**Foster Creek Obs Well Temperature Data
E24 Pad B1 FISHER 1-20-70-3 Jan-20-2014**



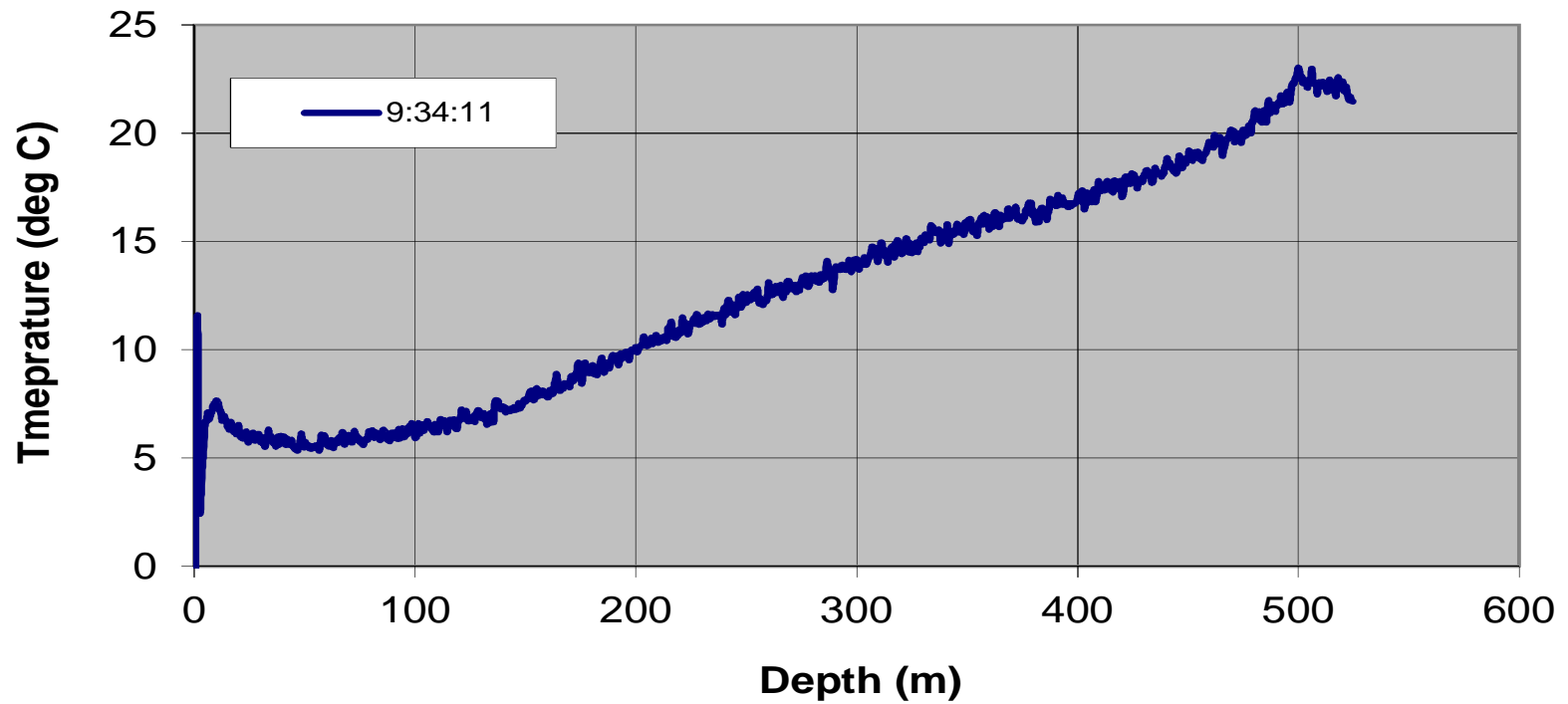
**Foster Creek Obs Well Temperature Data
E24 Pad B4 FISHER 4-21-70-3 Jan-21-2014**



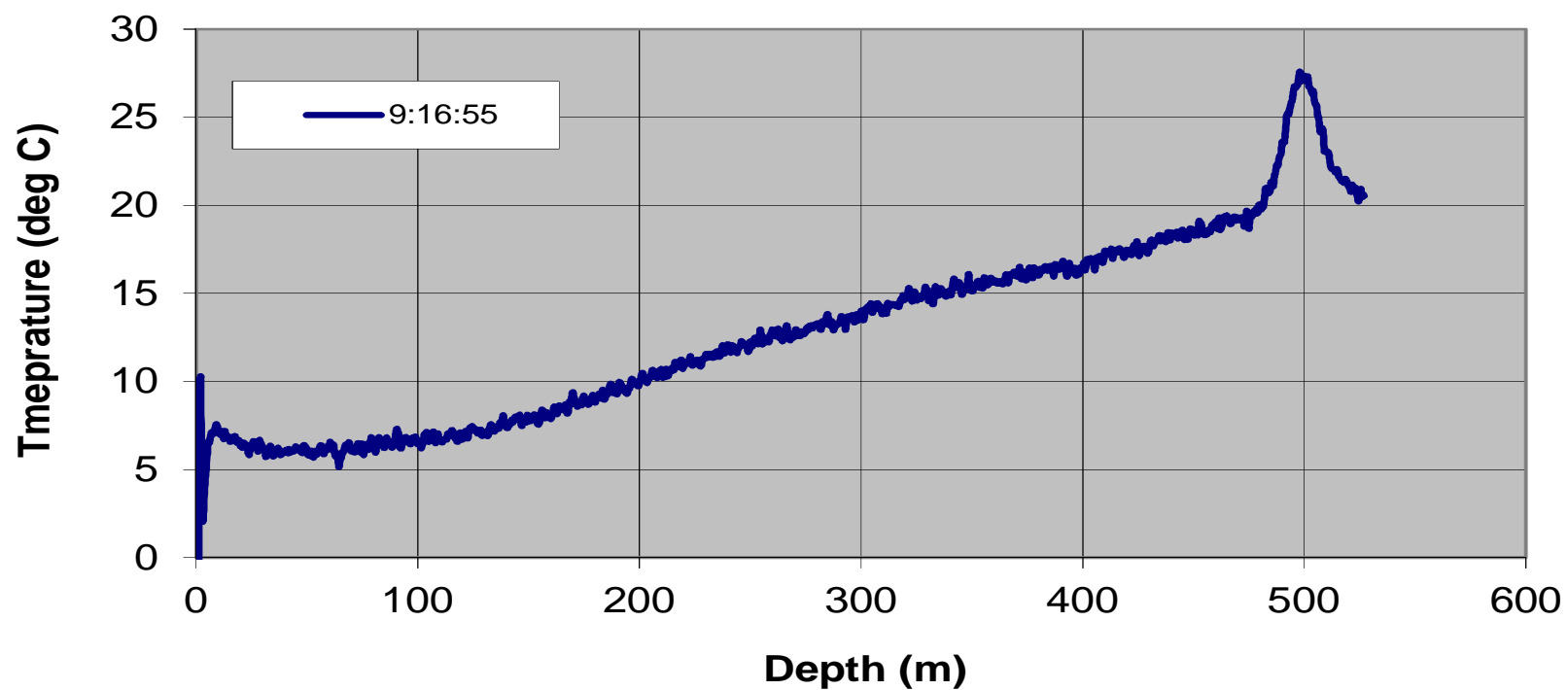
**Foster Creek Obs Well Temperature Data
E24 Pad D2 FISHER 2-20-70-3 Jan-20-2014**



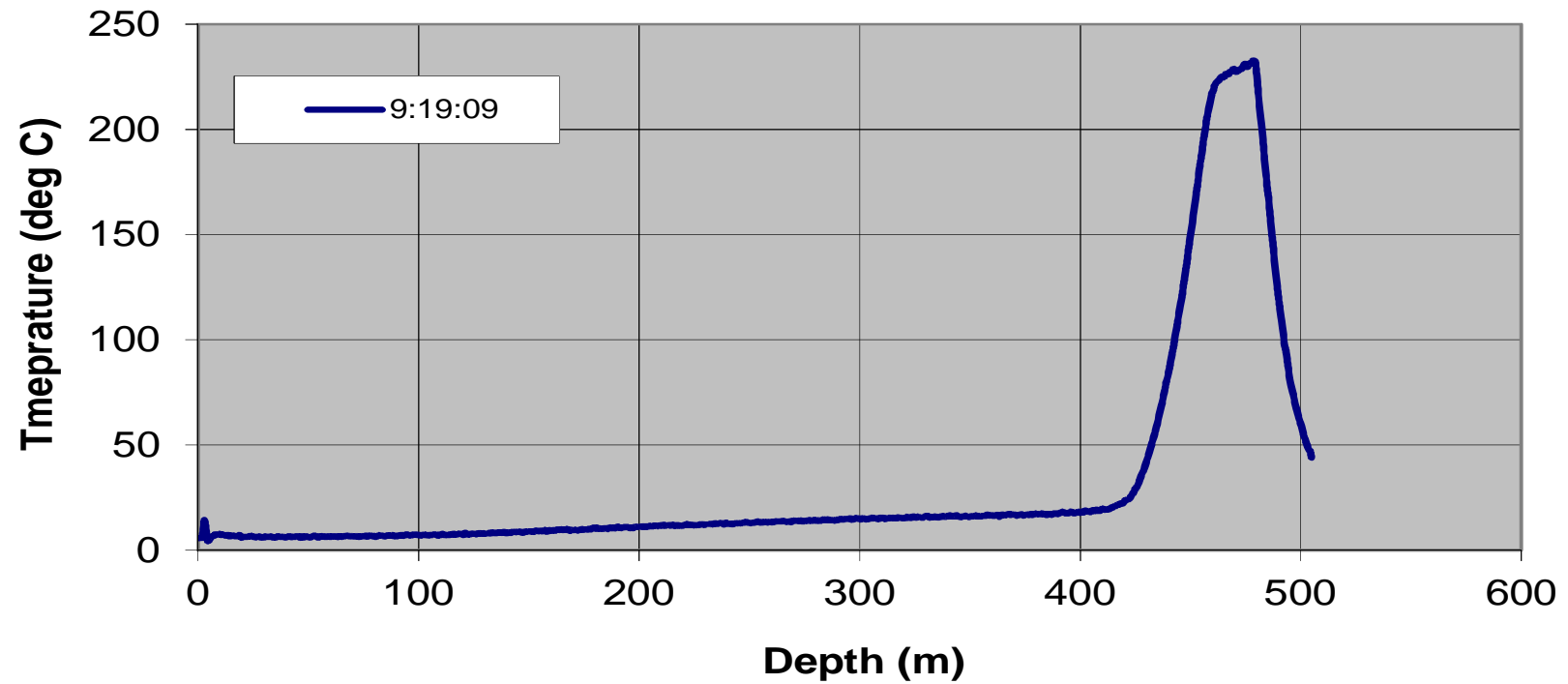
**Foster Creek Obs Well Temperature Data
E24 Pad D7 FISHER 2-20-70-3 Jan-21-2014**



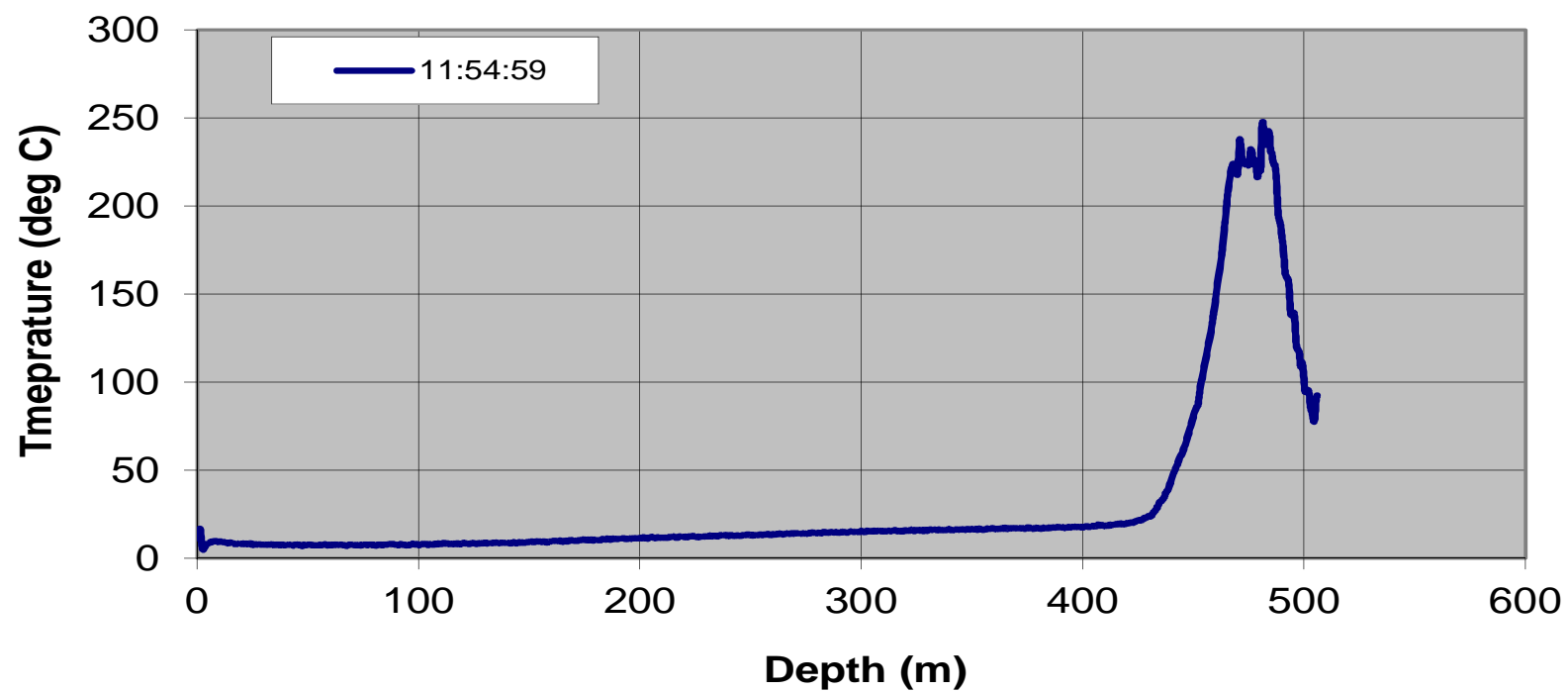
**Foster Creek Obs Well Temperature Data
E25 Pad A16 FISHER 16-20-70-3 Jan-23-2014**



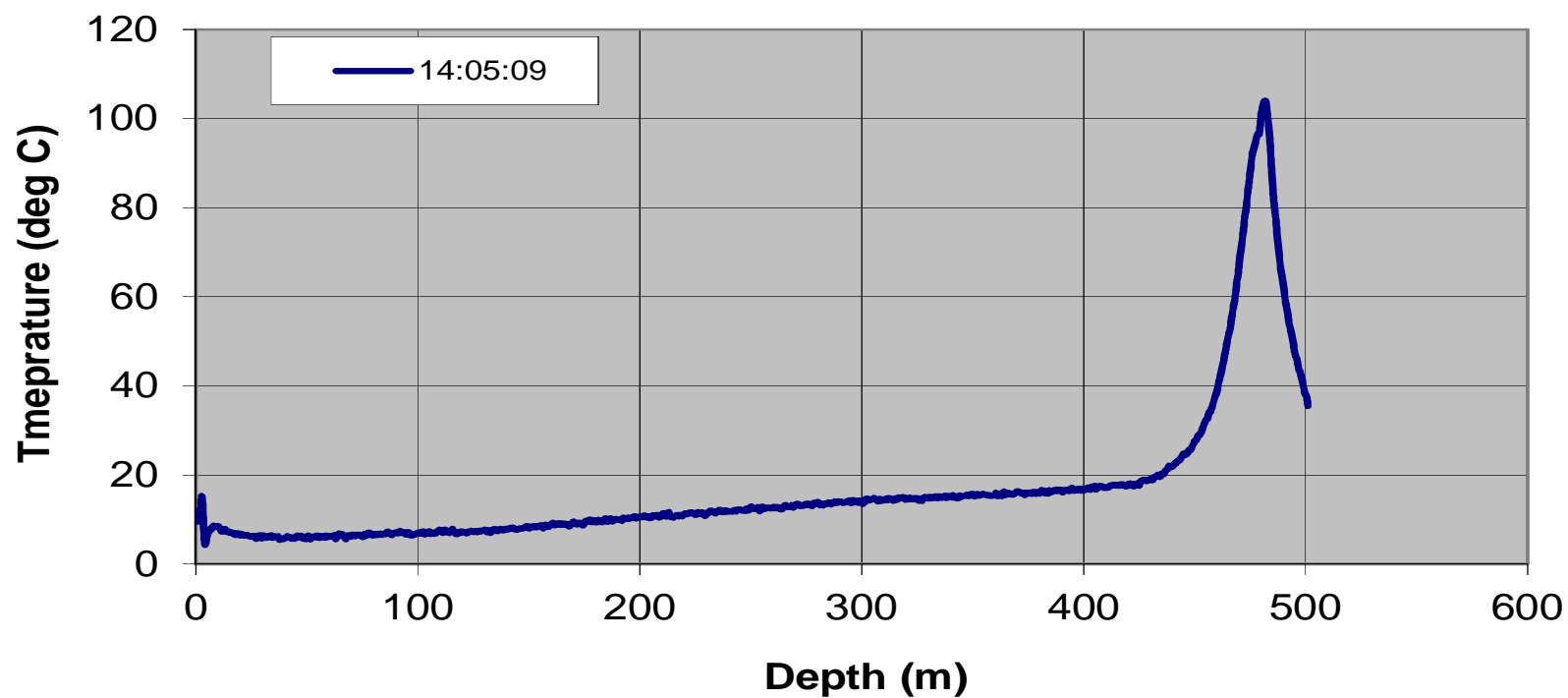
**Foster Creek Obs Well Temperature Data
F Pad B9 FISHER 09-15-70-4 Jan-17-2014**



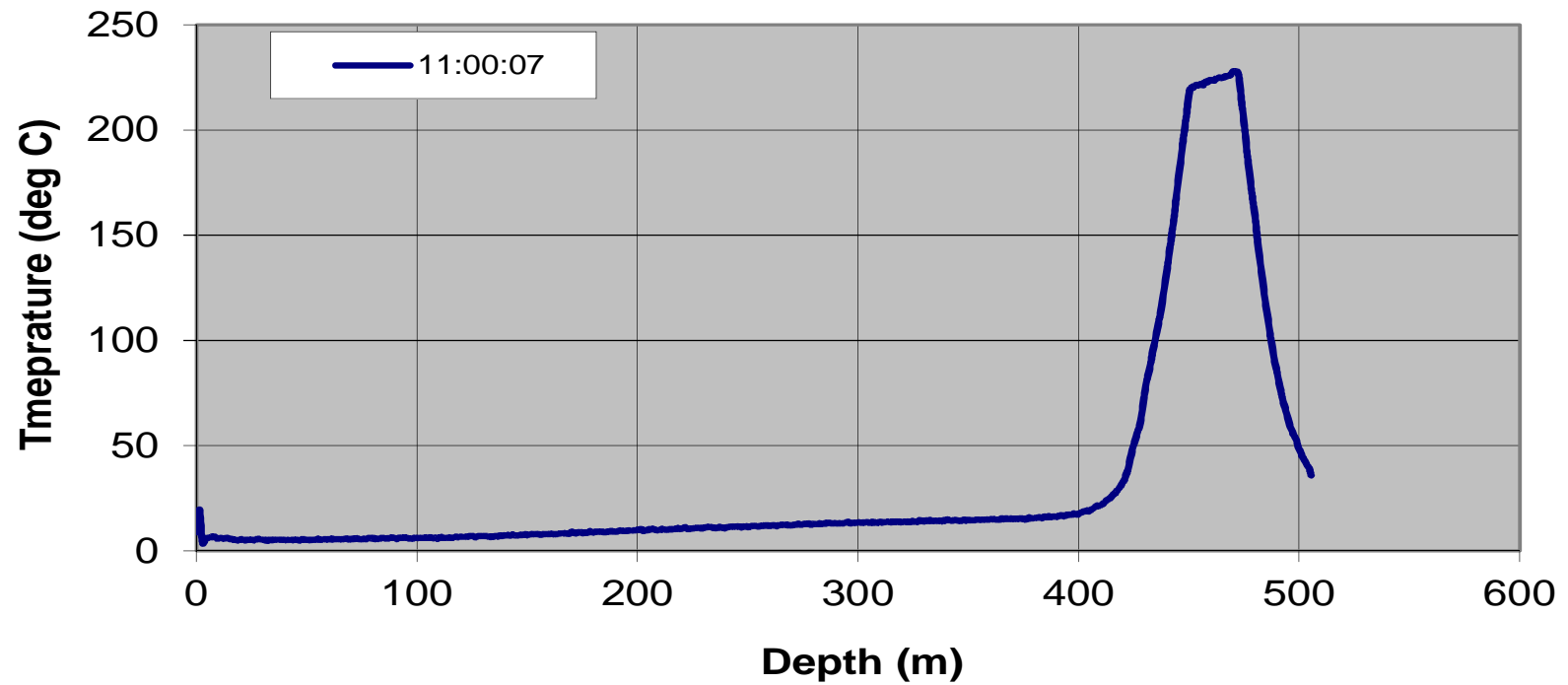
**Foster Creek Obs Well Temperature Data
G Pad B10 FISHER 10-15-70-4 Jan-17-2014**



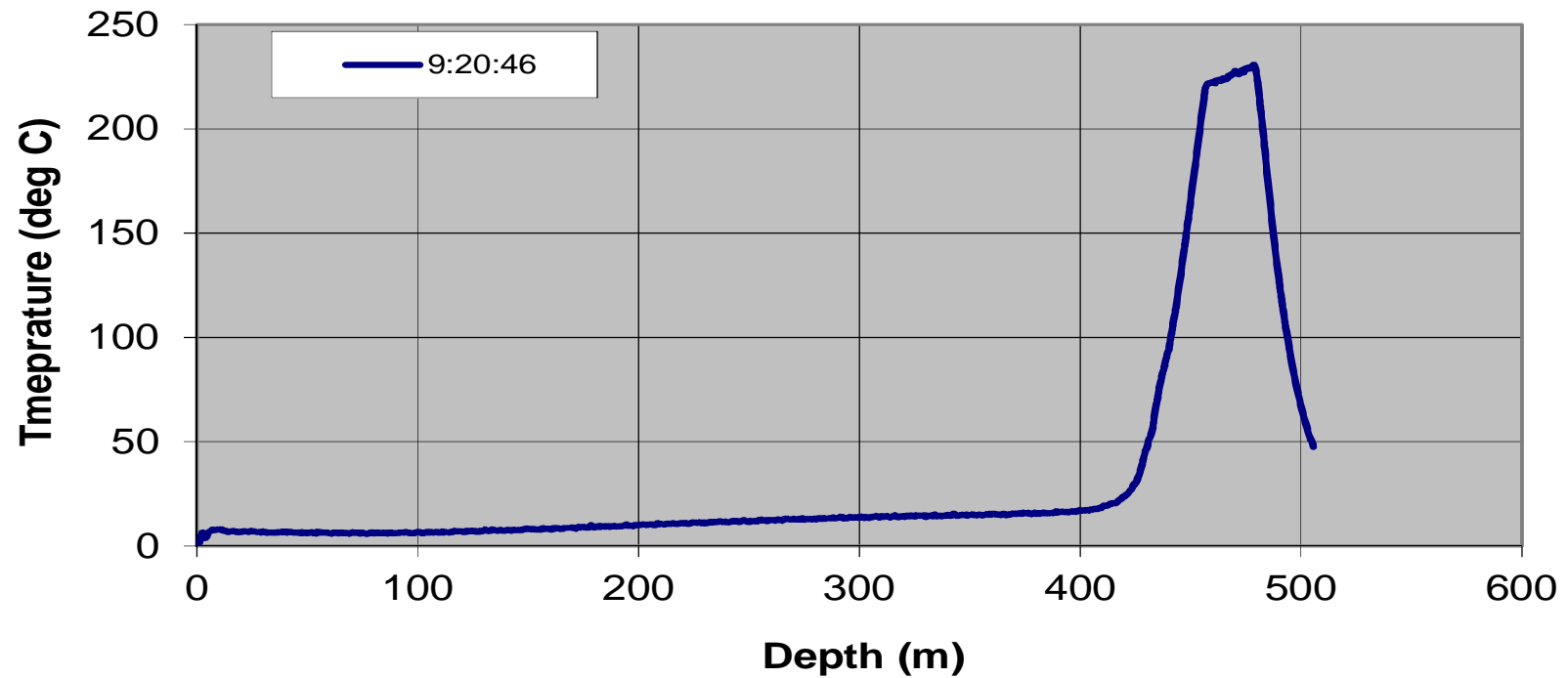
**Foster Creek Obs Well Temperature Data
G Pad C7 FISHER 7-15-70-4 Jan-17-2014**



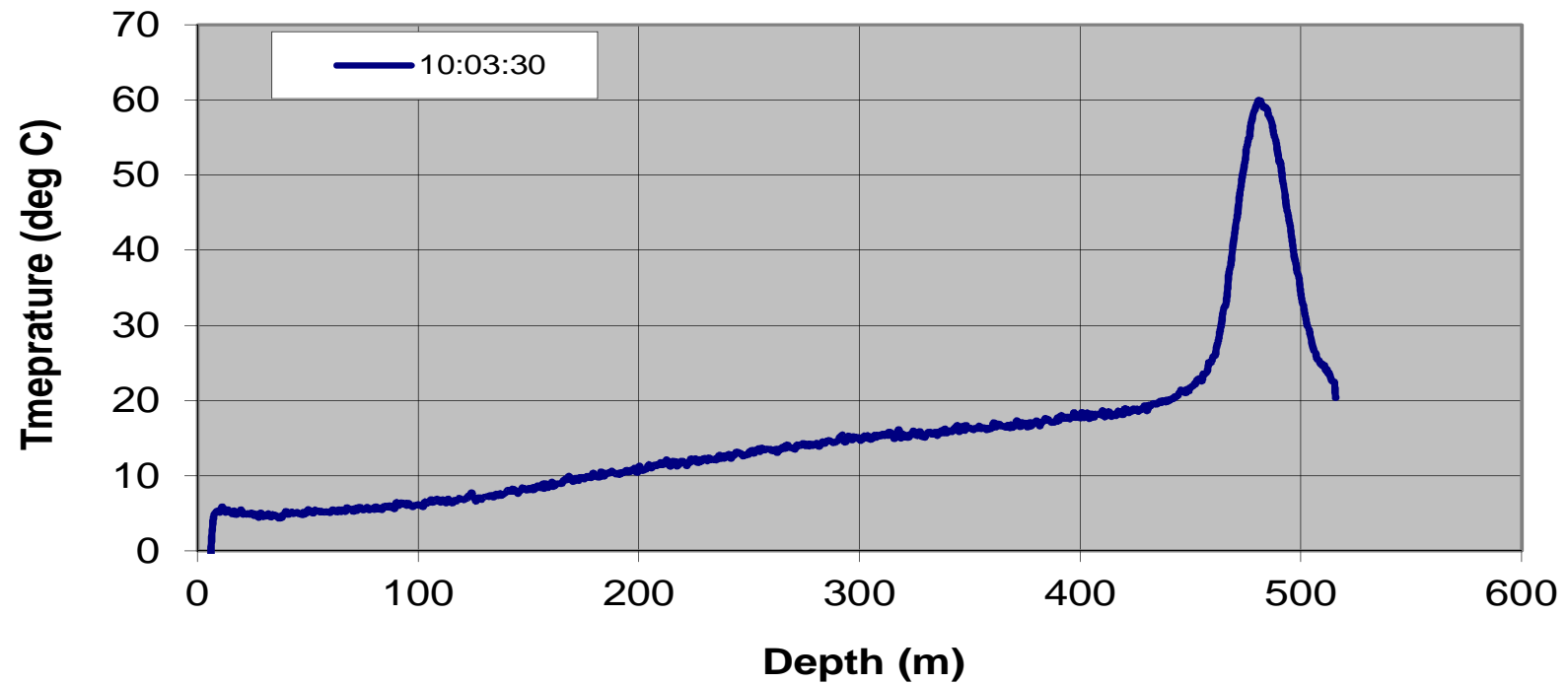
**Foster Creek Obs Well Temperature Data
G Pad C10 FISHER 10-15-70-4 Jan-18-2014**



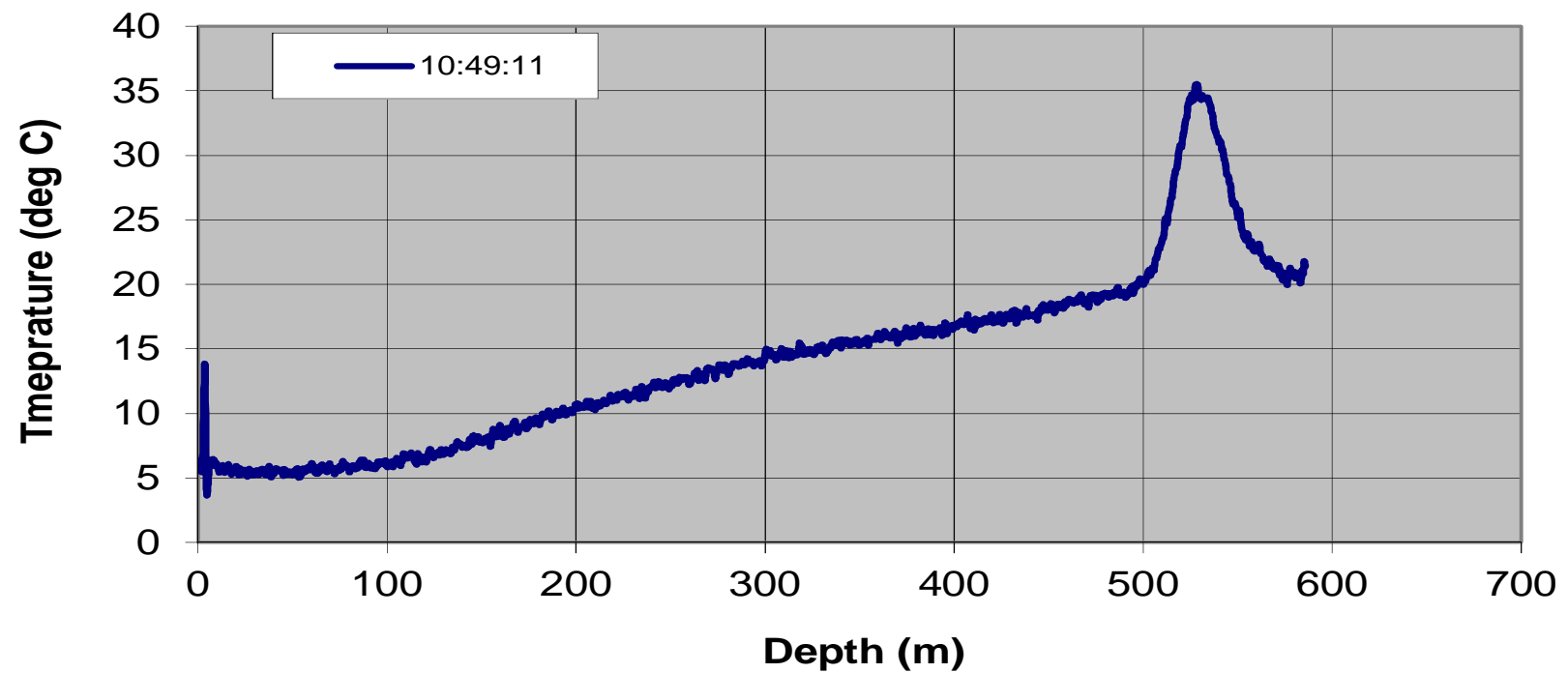
**Foster Creek Obs Well Temperature Data
G Pad D10 FISHER 10-15-70-4 Jan-18-2014**



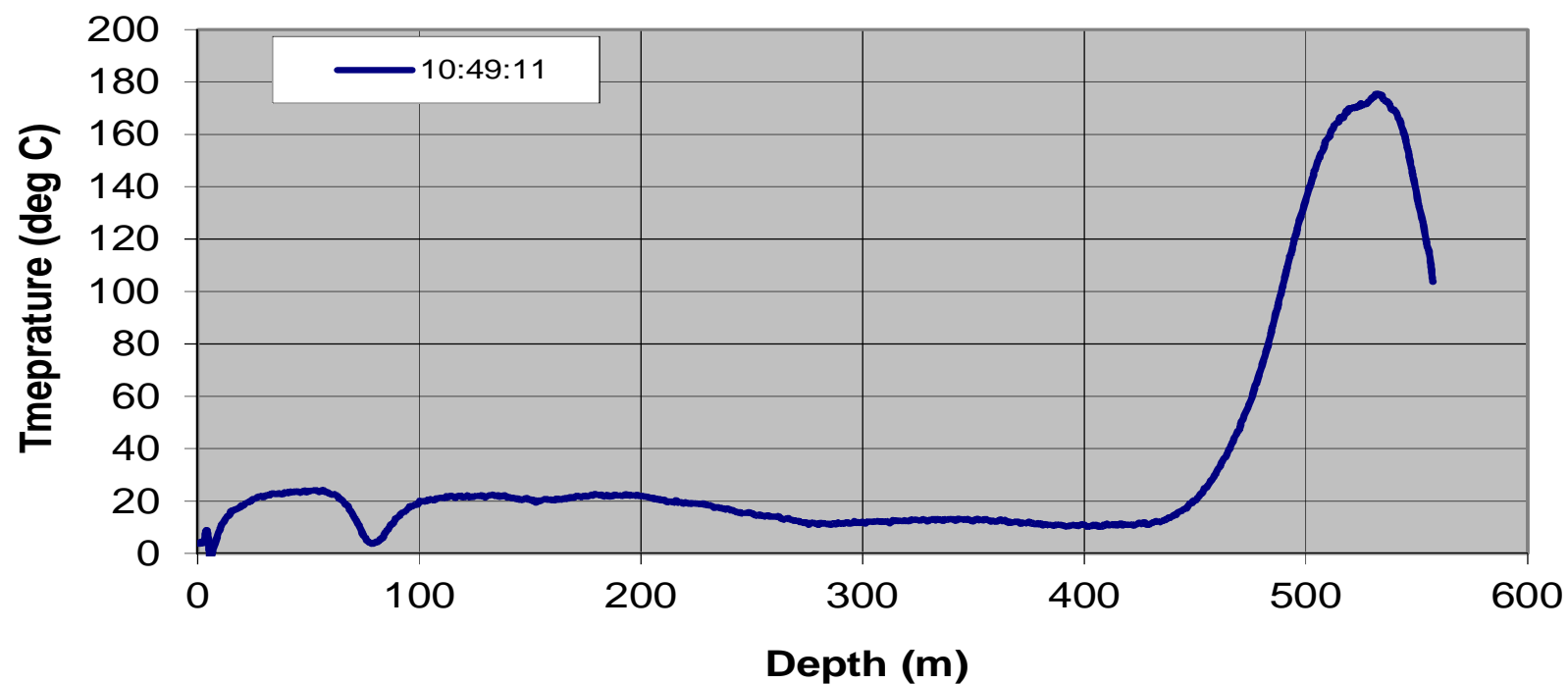
**Foster Creek Obs Well Temperature Data
W01 Pad A8 FISHER 8-20-70-4 Jan-12-2014**



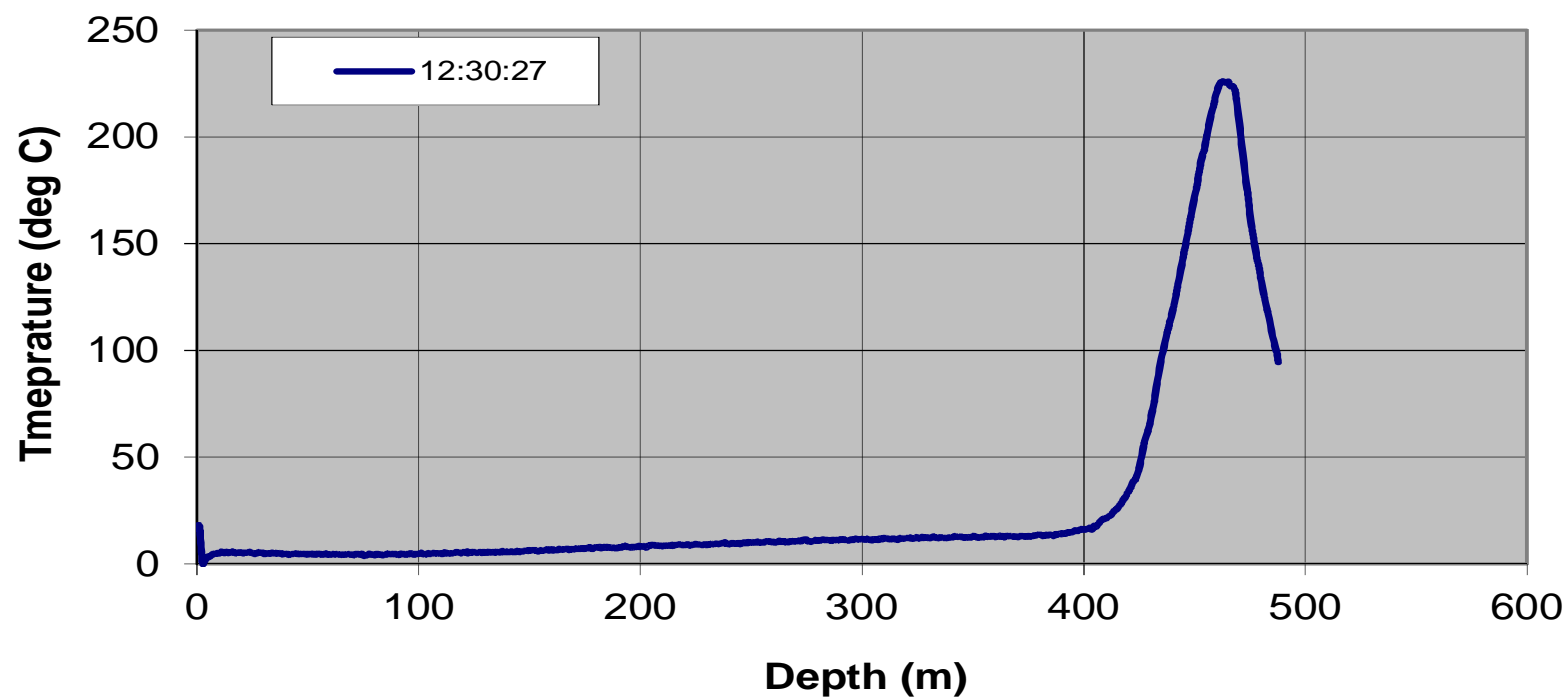
**Foster Creek Obs Well Temperature Data
W02 Pad 9-17 FISHER 16-17-70-4 Jan-15-2014**



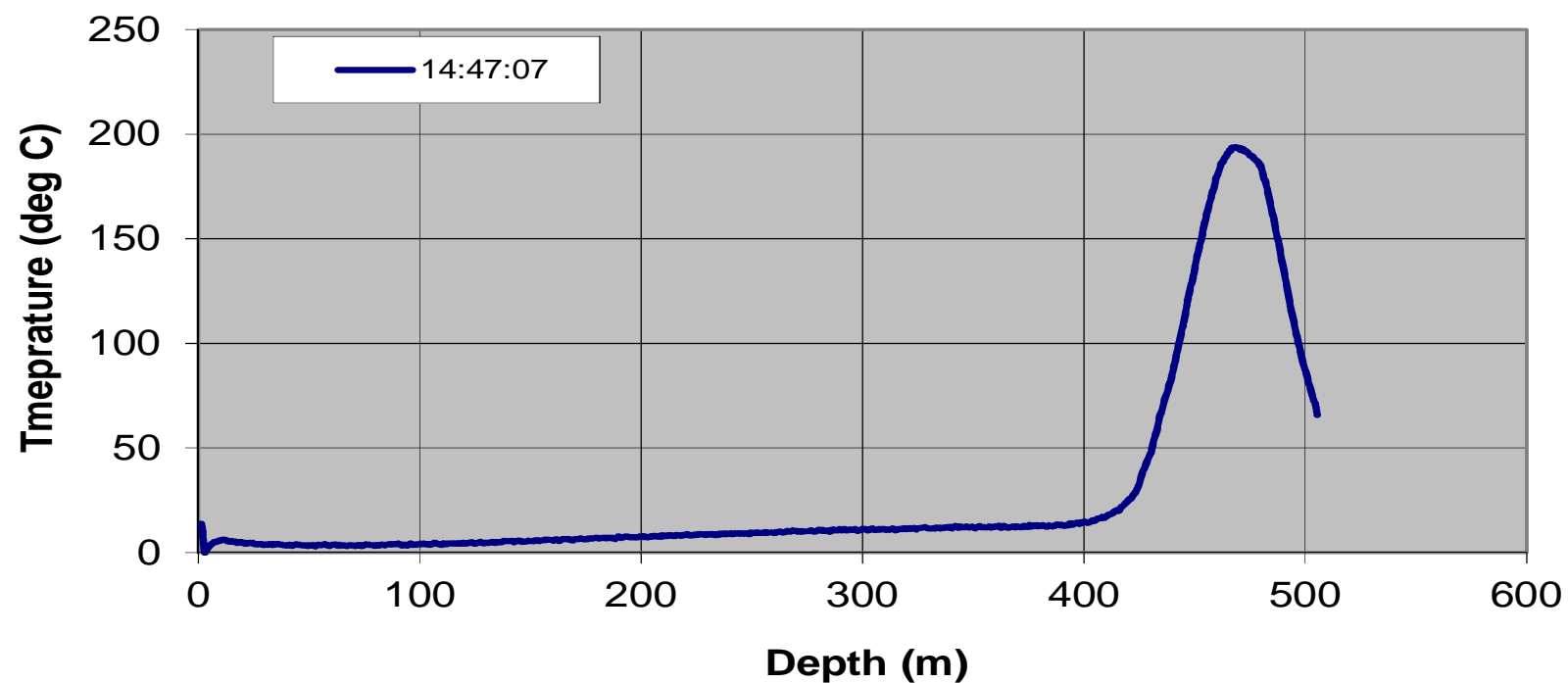
**Foster Creek Obs Well Temperature Data
A Pad 5-22 FISHER 5-22-70-4 Mar-13-2014**



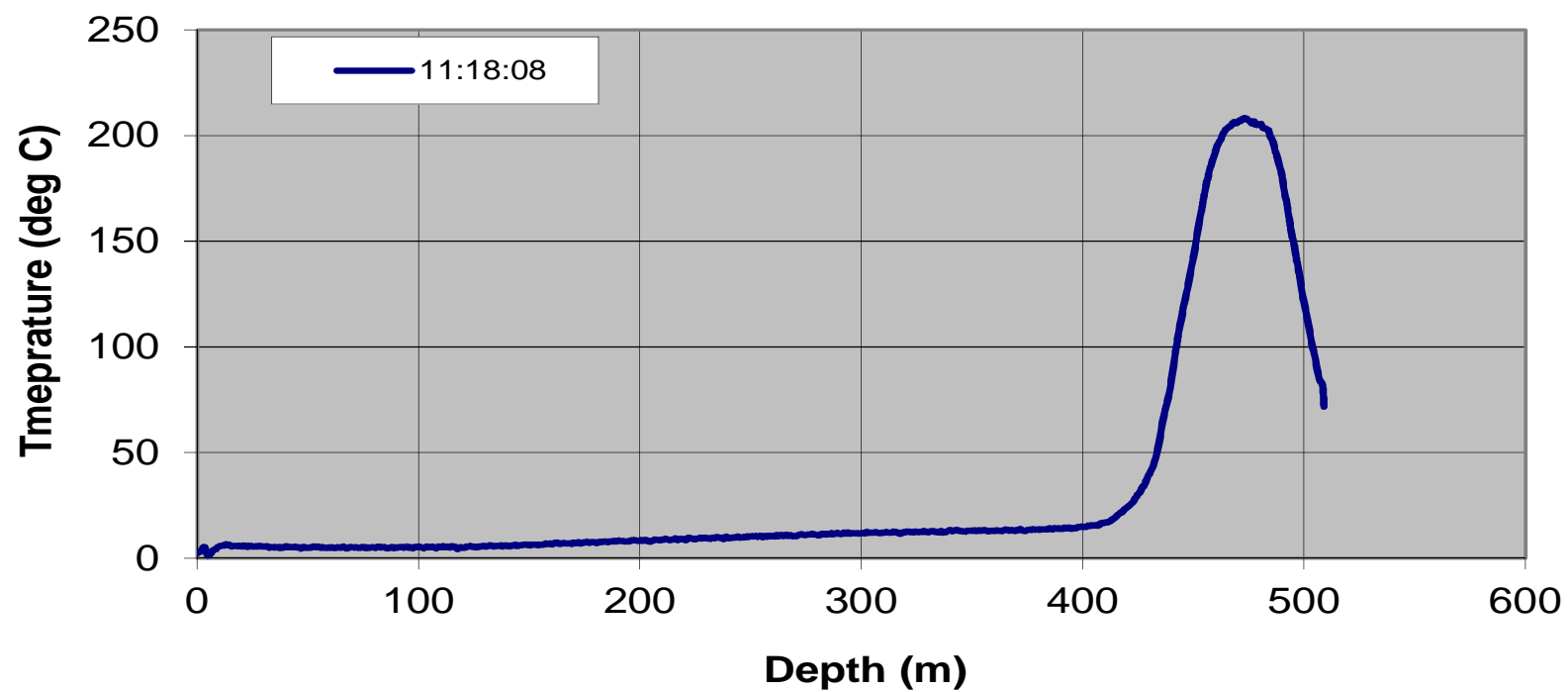
**Foster Creek Obs Well Temperature Data
A Pad 12C FISHER 12-22-70-4 Mar-12-2014**



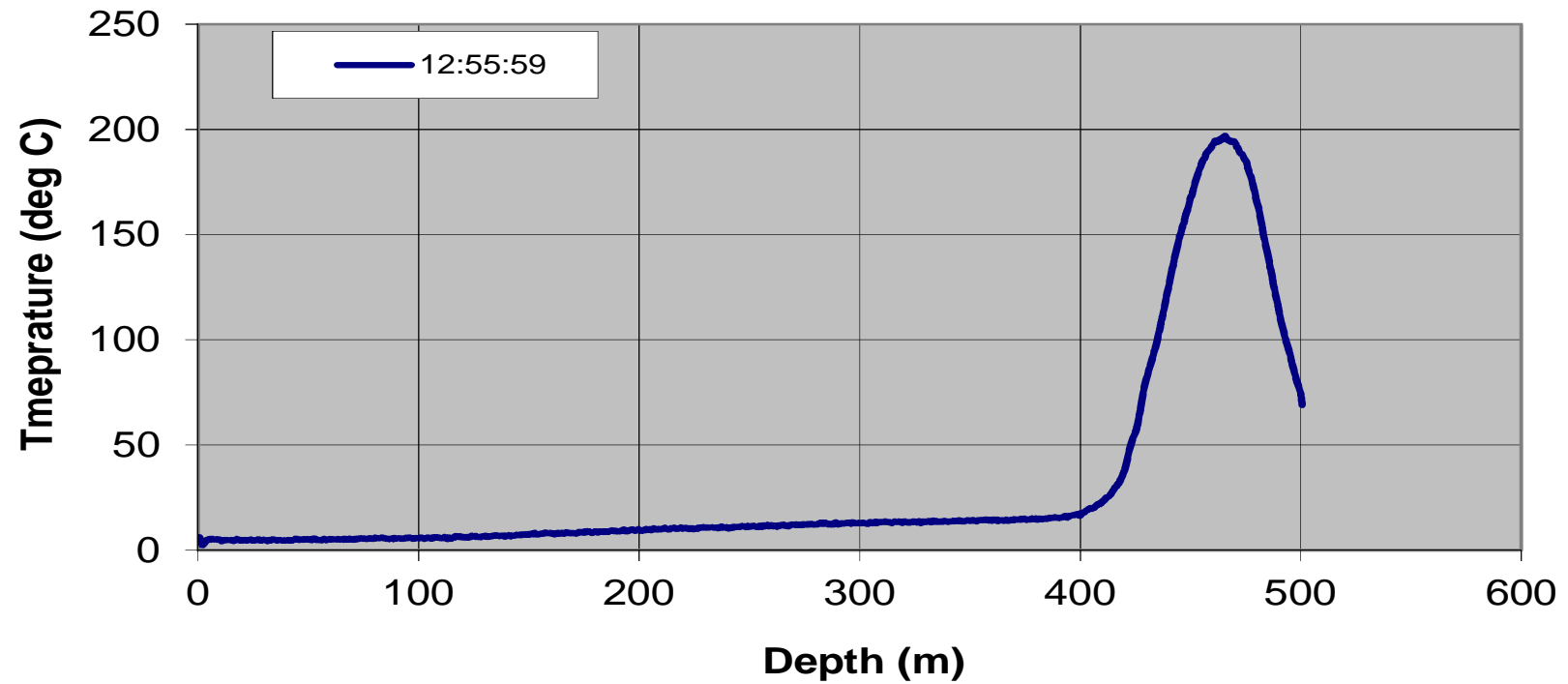
**Foster Creek Obs Well Temperature Data
C Pad A7 FISHER 7-22-70-3 Mar-12-2014**



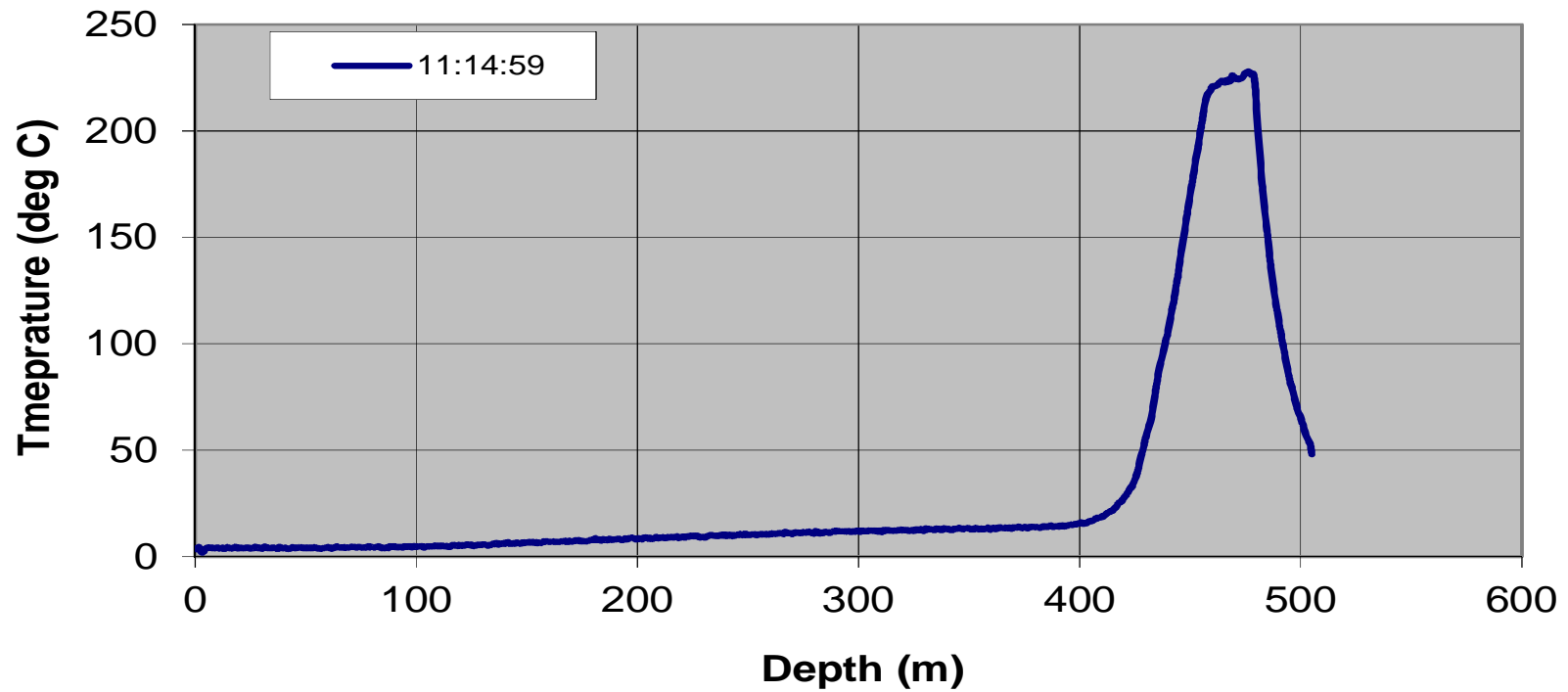
**Foster Creek Obs Well Temperature Data
C Pad B6 FISHER 6-22-70-4 Mar-14-2014**



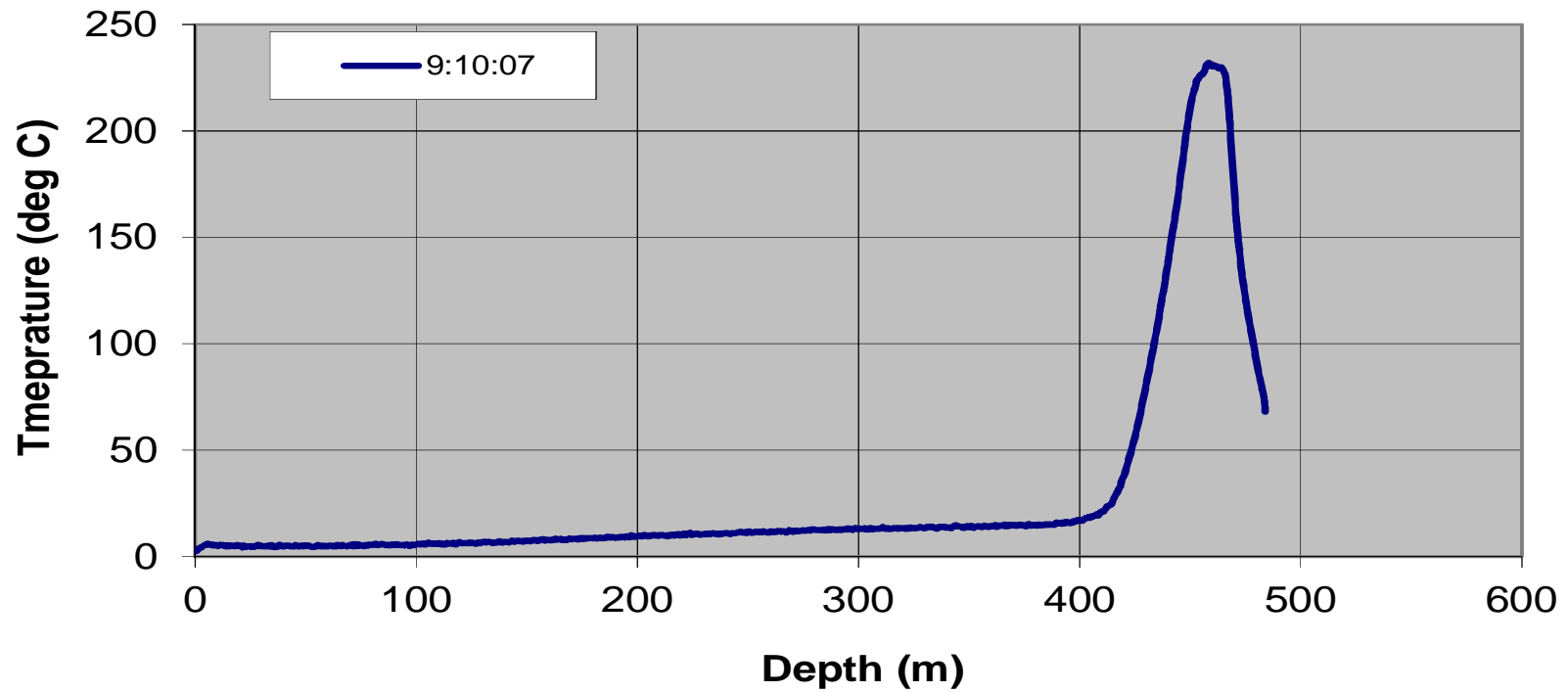
**Foster Creek Obs Well Temperature Data
D Pad B4 FISHER 4-23-70-4 Mar-13-2014**



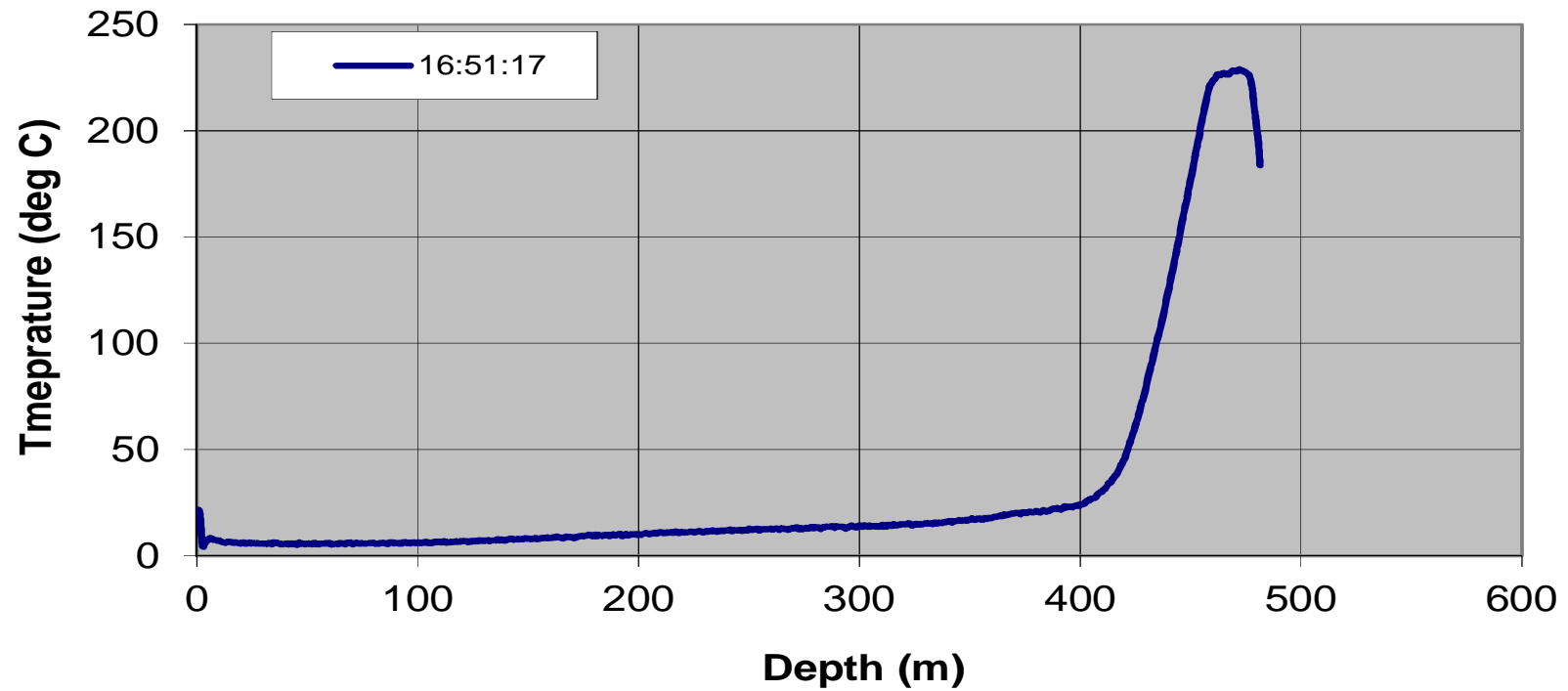
**Foster Creek Obs Well Temperature Data
D Pad C13 FISHER 13-14-70-4 Mar-13-2014**



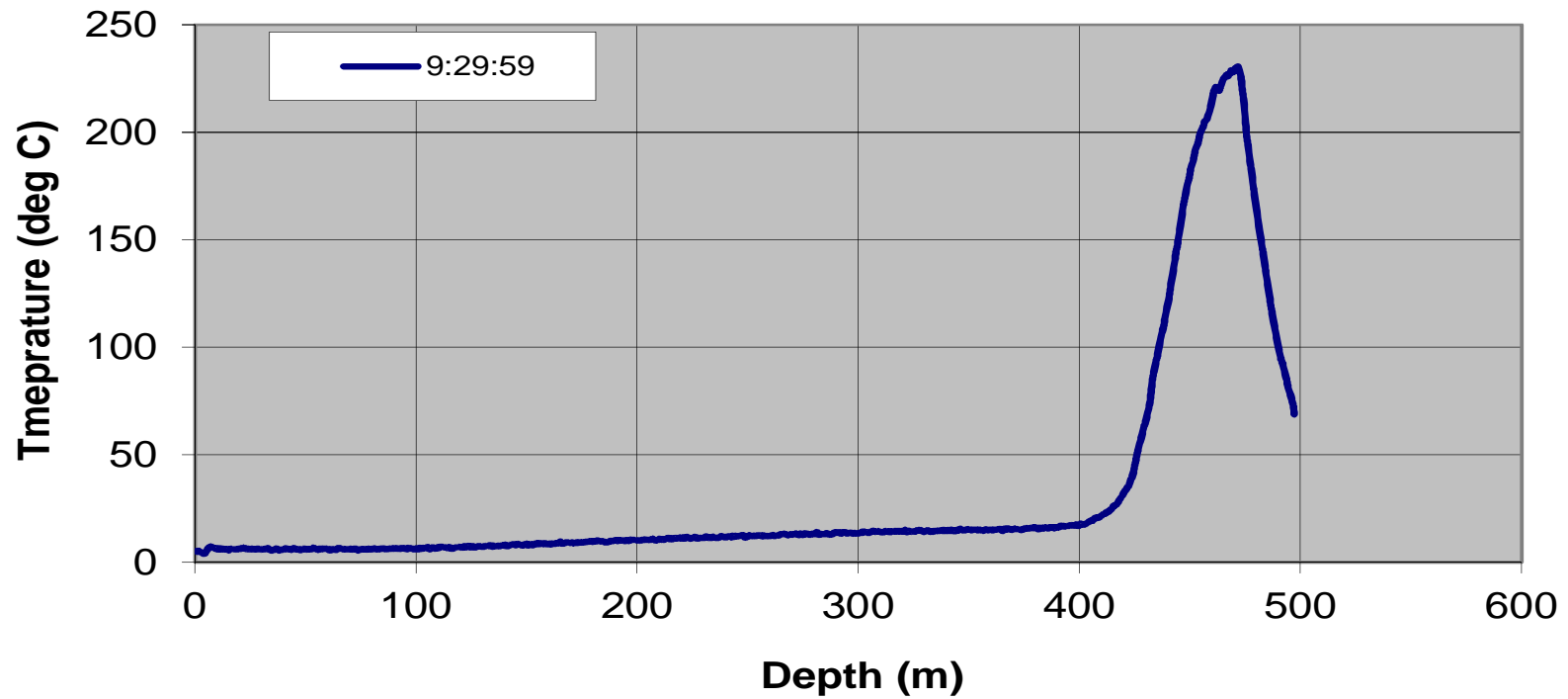
**Foster Creek Obs Well Temperature Data
D Pad C16 FISHER 16-15-70-4 Mar-12-2014**



**Foster Creek Obs Well Temperature Data
D Pad D2 FISHER 2-22-70-4 Mar-12-2014**



**Foster Creek Obs Well Temperature Data
D Pad D16 FISHER 16-15-70-4 Mar-13-2014**



END