Cenovus Energy Inc.
Sunrise In-situ Progress Report
Scheme 10419
2021 update

June 30, 2022

Oil & gas and financial information

Oil & gas information

The estimates of reserves were prepared effective December 31, 2021. All estimates of reserves were prepared by independent qualified reserves evaluators, based on definitions contained in the Canadian Oil and Gas Evaluation Handbook and in accordance with National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities*. Additional information with respect to pricing and additional reserves and other oil and gas information, including the material risks and uncertainties associated with reserves estimates, is contained in our AIF and Form 40-F for the year ended December 31, 2021, available on SEDAR at www.sedar.com, EDGAR at www.sec.gov and on our website at cenovus.com.

Certain natural gas volumes have been converted to barrels of oil equivalent (BOE) on the basis of one barrel (bbl) to six thousand cubic feet (Mcf). BOE may be misleading, particularly if used in isolation. A conversion ratio of one bbl to six Mcf is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent value equivalency at the well head.

Advisory

This presentation contains information in compliance with:

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

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.

Subsection 4.1 1 Introduction

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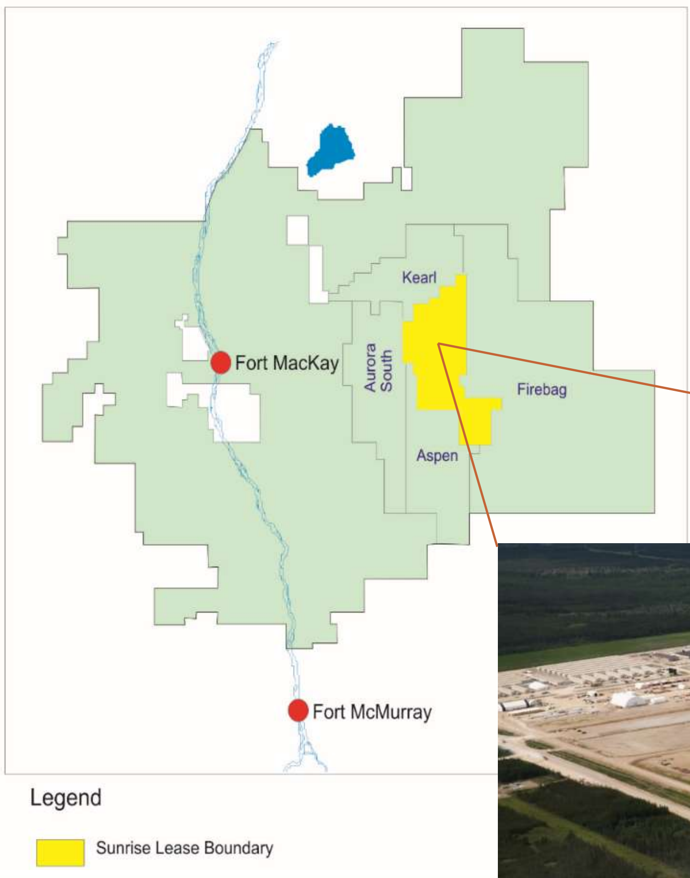
Area Map

PROJECT OVERVIEW



AER Approval No's. OSCA Scheme 10419 and EPEA 206355-01-00, as amended

McMurray Formation

7-9º API Bitumen

50% Partnership with BP

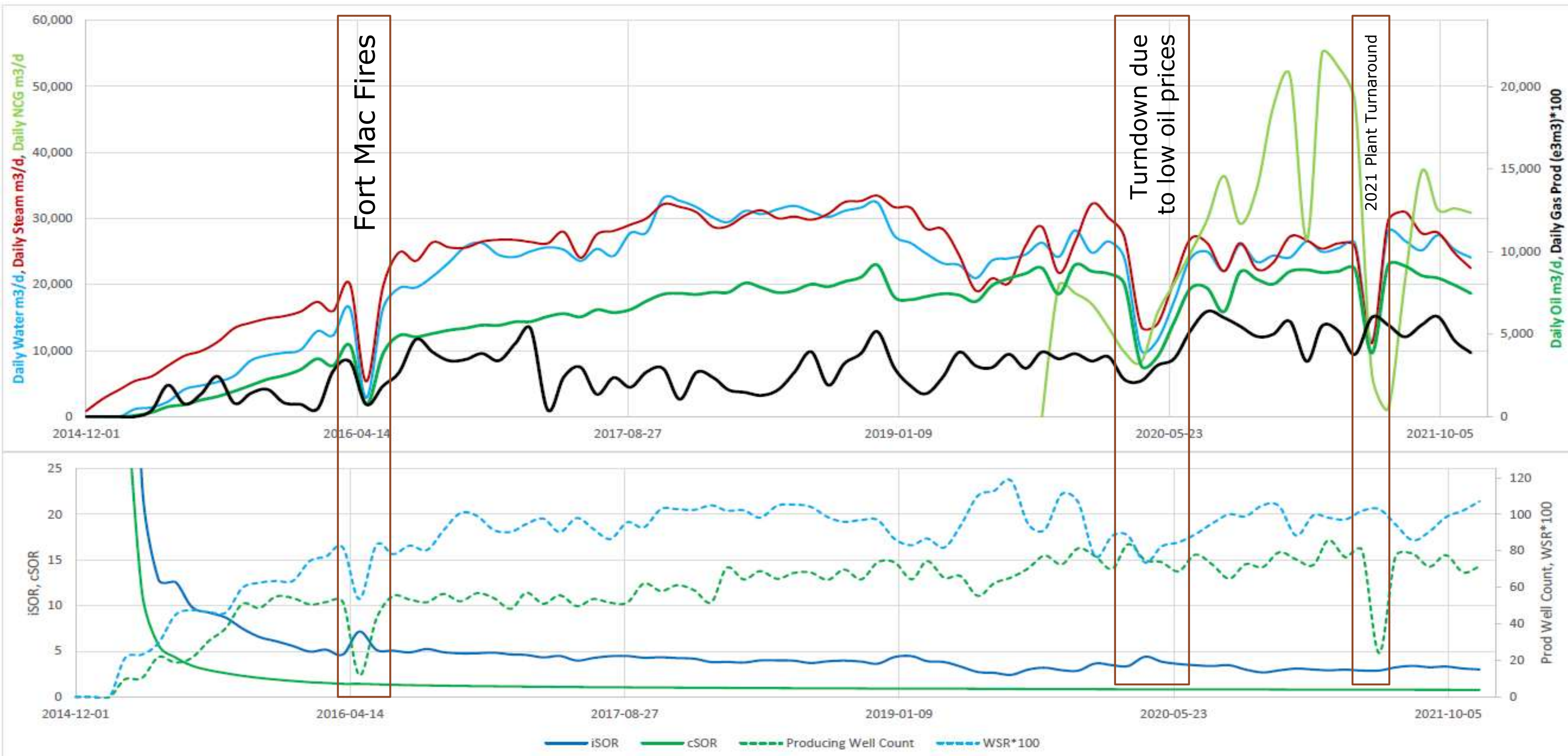
First Steam December 12, 2014

First Production March 8, 2015

Subsection 4.2 2-7
Subsurface

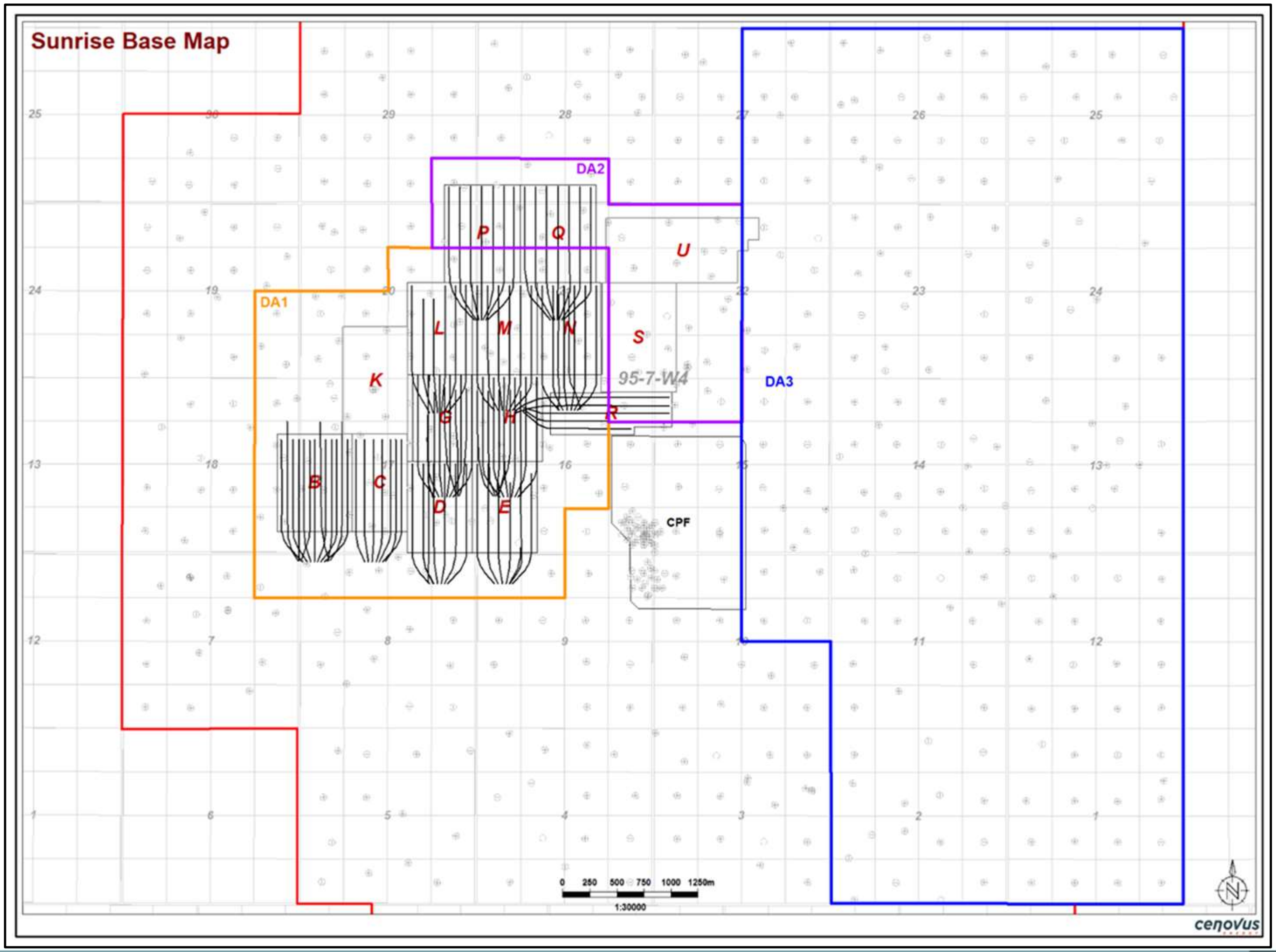
Production Plot

Section 4.2.2



Development Area Map

Section 4.2.3.a

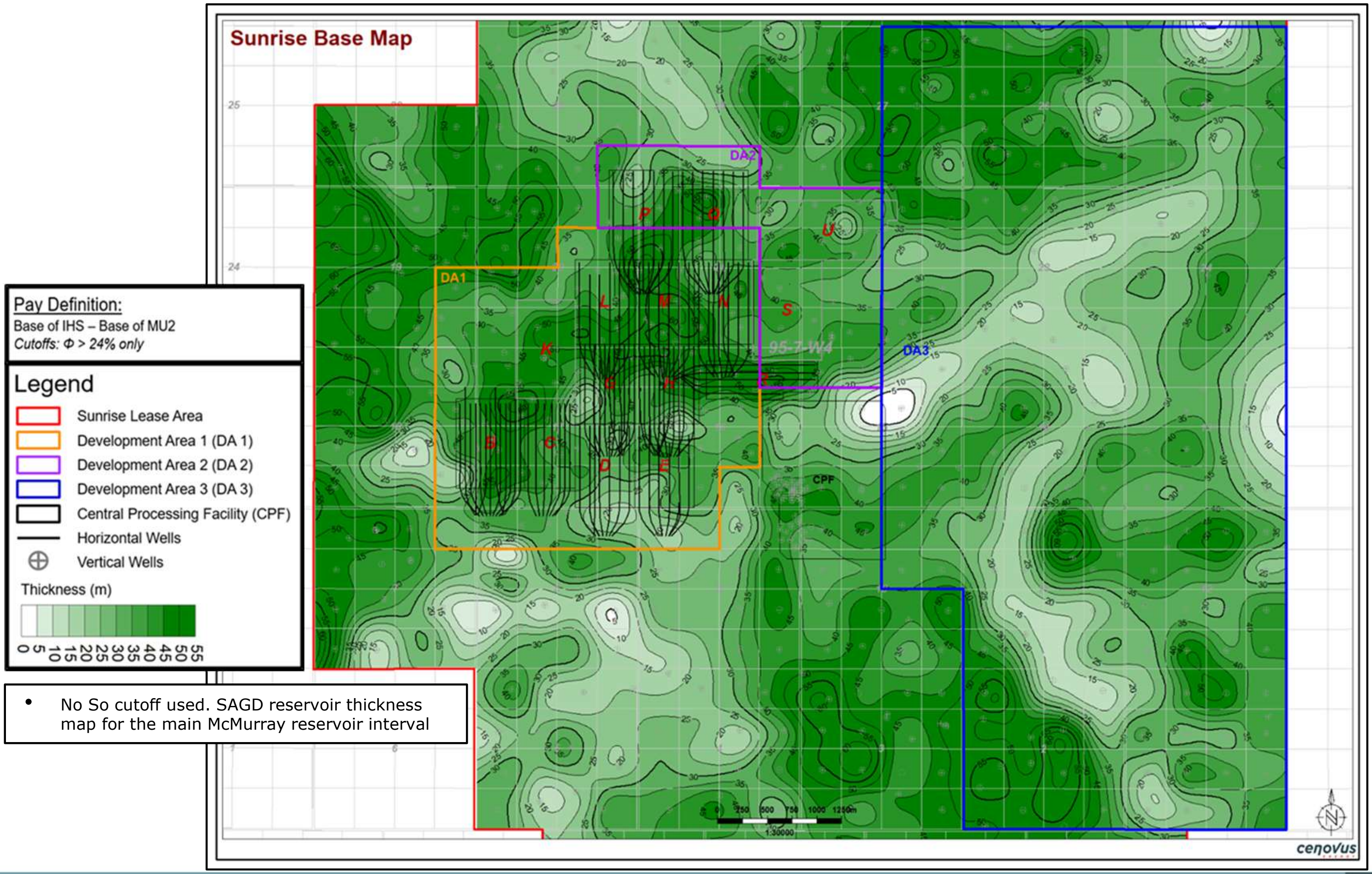


Legend

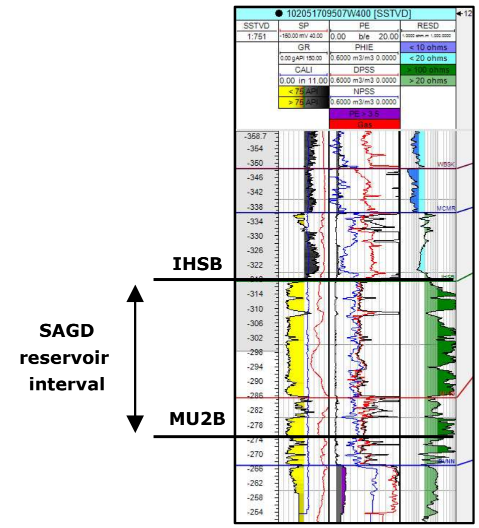
- Sunrise Lease Area
- Development Area 1 (DA 1)
- Development Area 2 (DA 2)
- Development Area 3 (DA 3)
- Drilled Pad
- Approved Pad
- Horizontal Wells
- Vertical Wells

SAGD Reservoir Isopach Map

Section 4.2.3.b



- No So cutoff used. SAGD reservoir thickness map for the main McMurray reservoir interval

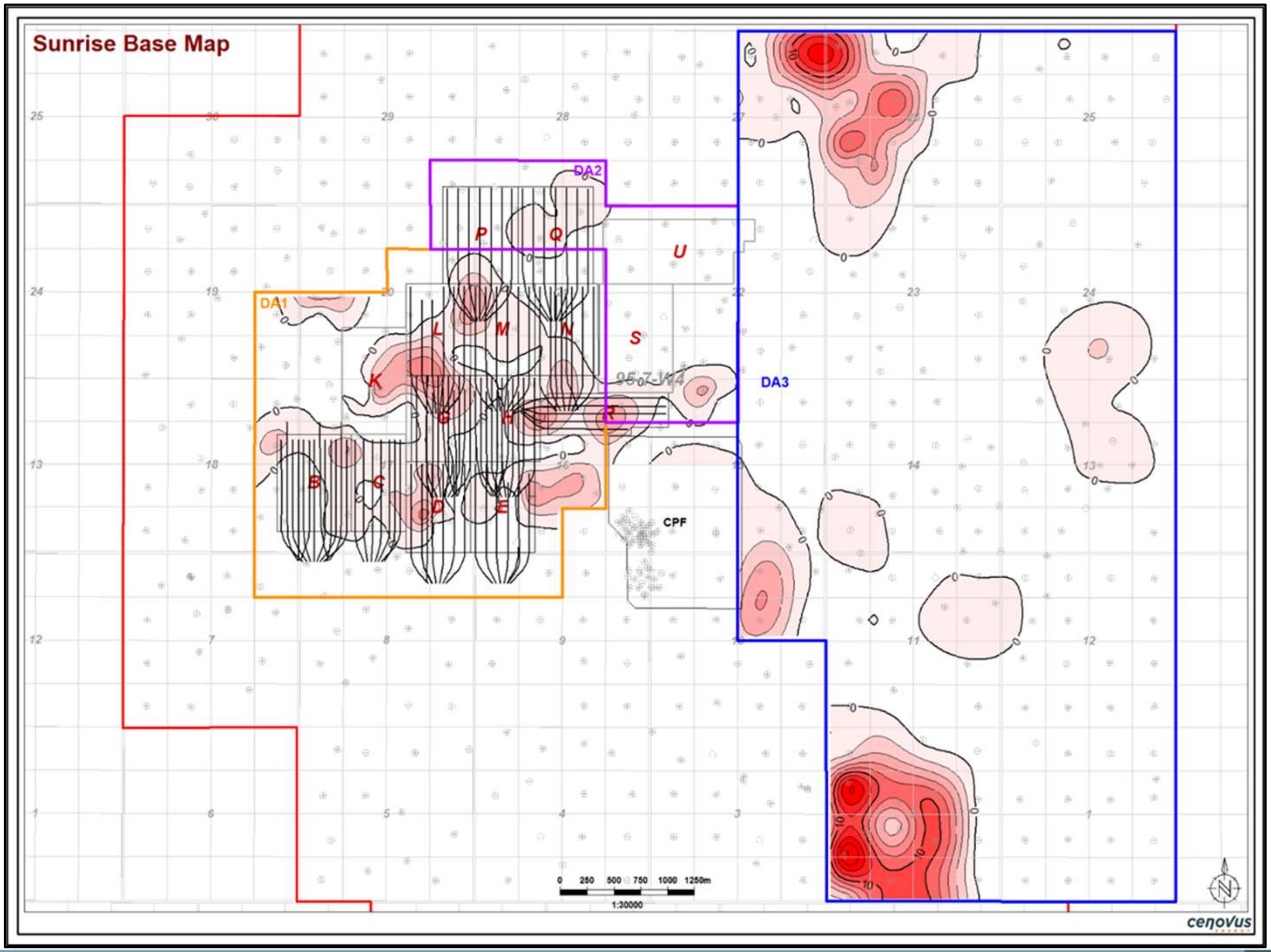


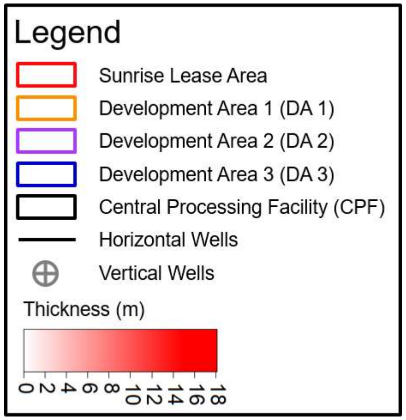
Base of IHS (Inclined Heterolithic Strata)
Lithological surface which marks the base of an extensive mud-rich interval above the McMurray reservoir containing common "inclined heterolithic strata."

Base of MU2 (McMurray Unconformity 2)
Unconformity and surface of tidal/fluvial erosion marking the base of the main McMurray reservoir interval at Sunrise.

SAGD Top Gas Isopach Map

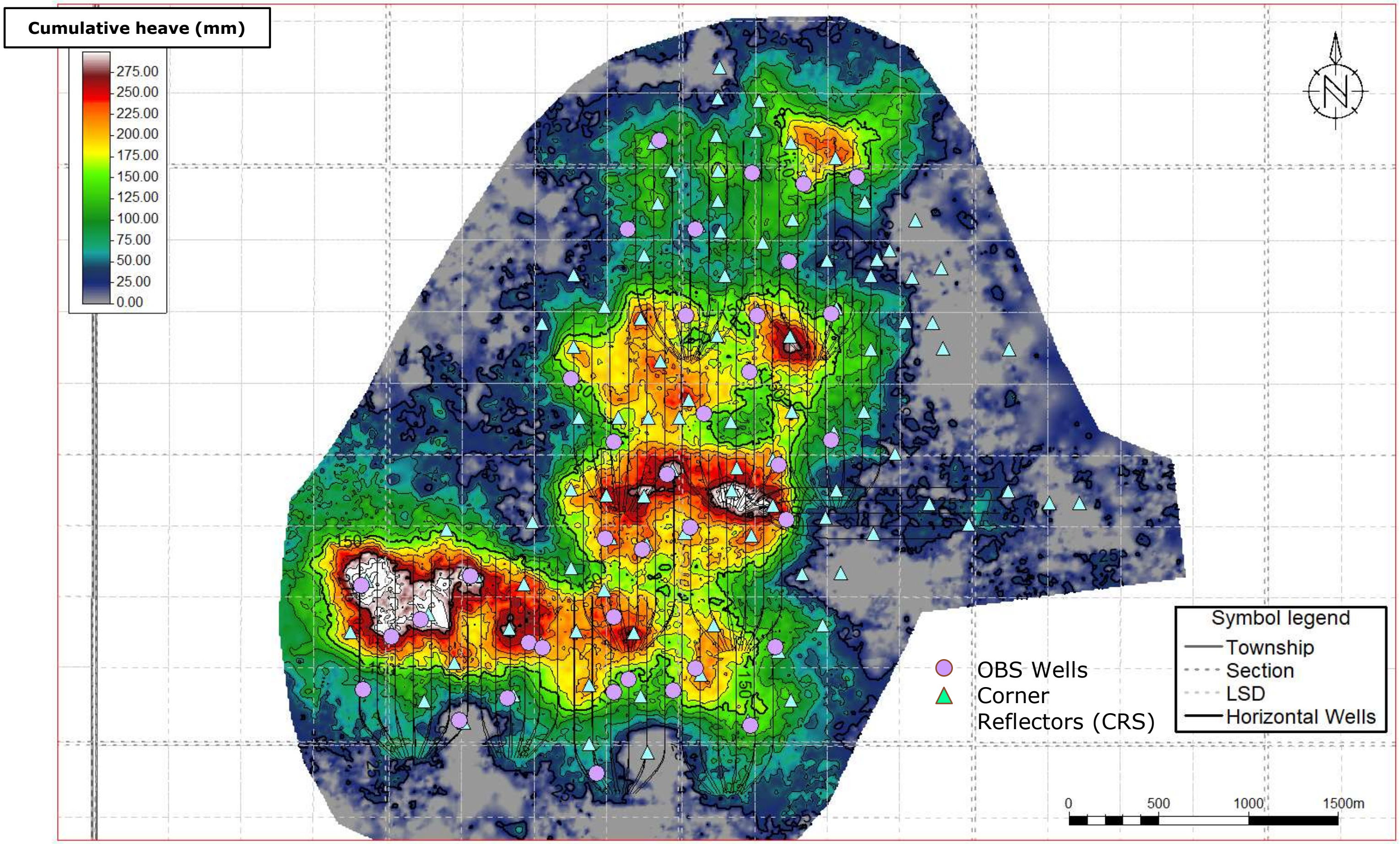
Section 4.2.3.c





Geomechanical – Surface Heave

Section 4.2.3.d

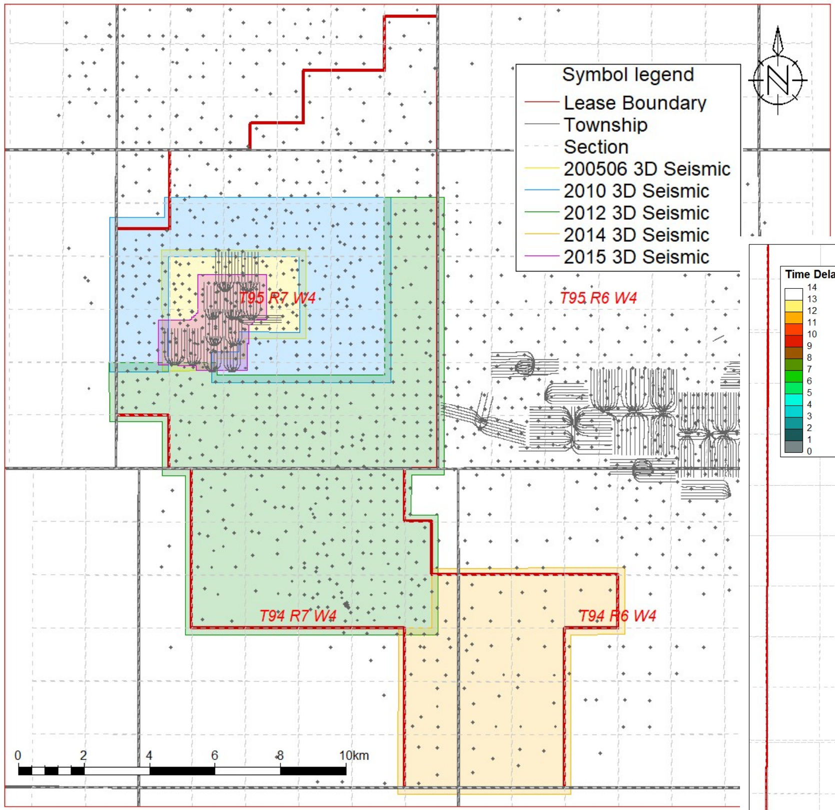


Seismic

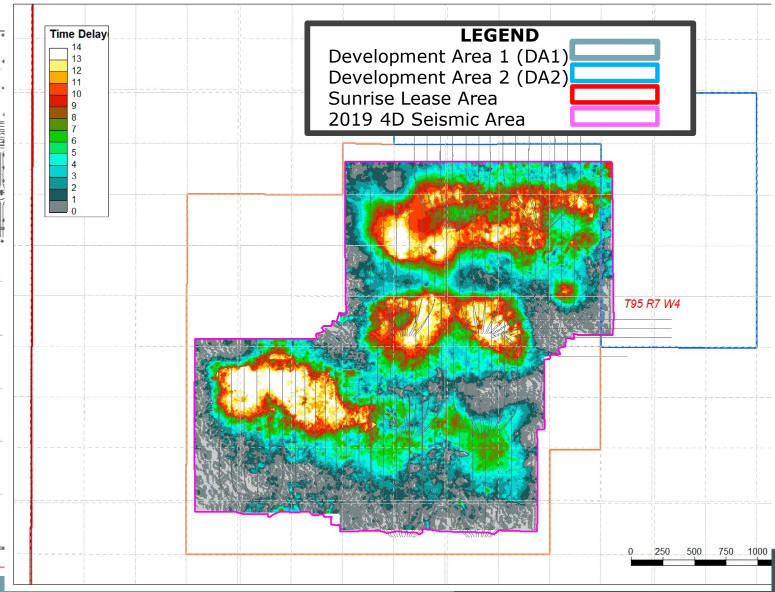
Section 4.2.3.e

- No seismic was acquired during the reporting period

3D Seismic Coverage

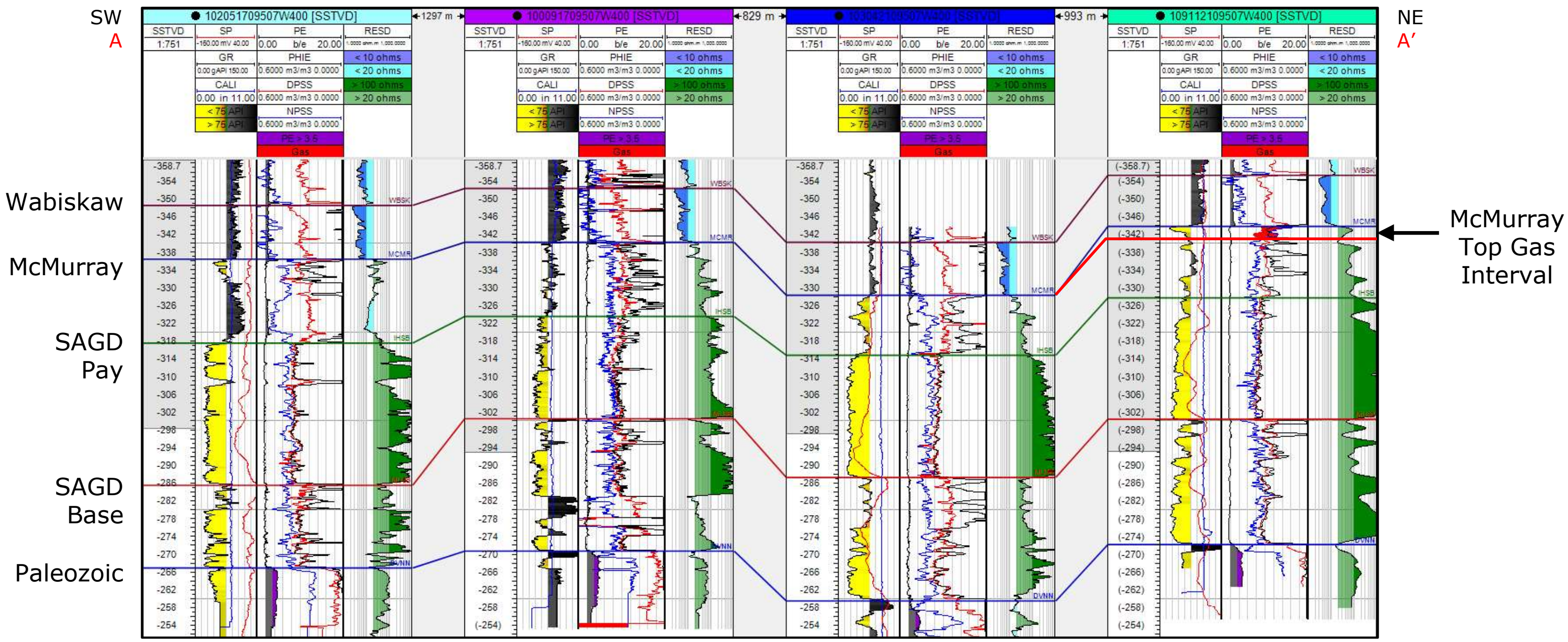


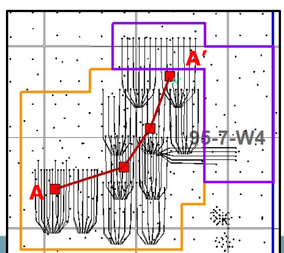
4D Seismic Coverage



Representative Cross-Section

Section 4.2.4





Reservoir Parameters

Sections 4.2.5 and 4.2.6

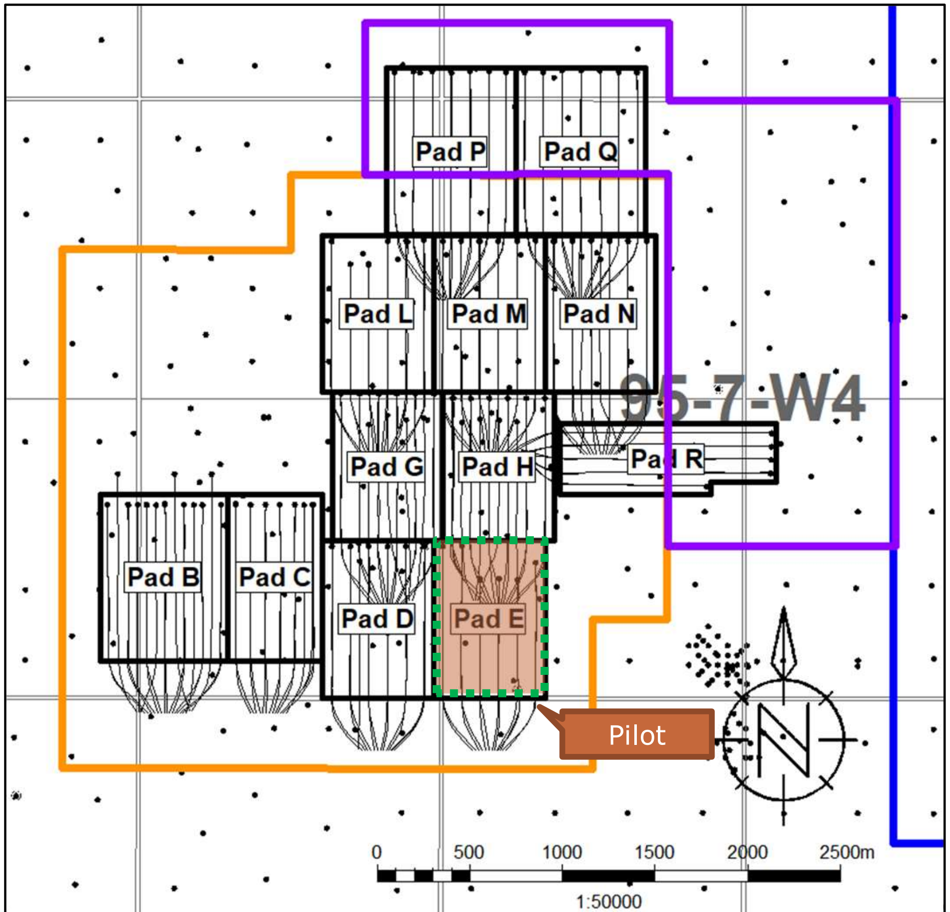
Pad	Area (m^2)	Height (m)	Porosity (%)	So (%)	OBIP (10^3m^3)
Project/Lease Area	169,824,000	35	32	70	1,122,109
Development Area 1	9,652,000	27	31	72	58,399
Development Area 2	4,308,000	23	30	70	20,483
Development Area 3	31,018,000	23	30	70	154,239

Pad	Area (m2)	Height (m)	Average Permeability (D)	Porosity (%)	So (%)	PBIP (Mm3)	OBIP (Mm3)	Cum Oil (Mm3) to Dec 31, 2021	Recovery % PBIP	Recovery % OBIP	Estimated Ultimate Recovery (Mm3)	Ultimate Recovery as % of PBIP	Ultimate Recovery as % of OBIP
B 13-08 (B)	621,000	29	7.0	30%	75%	3,977	4,257	1,999	50%	47%	2,129	54%	50%
B 14-08 (C)	459,000	28	7.0	31%	76%	2,803	3,100	1,630	58%	53%	1,550	55%	50%
B 16-08 (D)	510,000	26	7.0	29%	75%	2,899	3,198	1,211	42%	38%	1,599	55%	50%
B 13-09 (E)	510,000	23	7.0	30%	79%	2,453	3,042	1,185	48%	39%	1,521	62%	50%
B 08-17 (G)	480,000	27	7.0	31%	73%	3,019	3,759	1,639	54%	44%	1,879	62%	50%
B 05-16 (H)	480,000	23	7.0	33%	78%	2,609	3,335	1,520	58%	46%	1,667	64%	50%
B 16-17 (L)	510,000	24	7.0	32%	77%	2,738	3,435	1,301	48%	38%	1,717	63%	50%
B 13-16 (M)	510,000	28	7.0	33%	74%	3,353	3,925	1,498	45%	38%	1,963	59%	50%
B 15-16 (N)	510,000	39	7.0	30%	76%	4,669	6,104	1,849	40%	30%	3,052	65%	50%
B 05-21 (P)	630,000	25	7.0	30%	66%	3,314	6,296	760	23%	12%	3,148	95%	50%
B 06-21 (Q)	630,000	22	7.0	31%	75%	3,351	4,829	810	24%	17%	2,415	72%	50%
B 13-16 (R)	427,320	20	7.0	33%	78%	1,989	2,591	233	12%	9%	1,295	65%	50%
Total SR	**6,277,320**					**37,174**	**47,872**	**15,635**	**42%**	**33%**	**23,936**	**64%**	**50%**

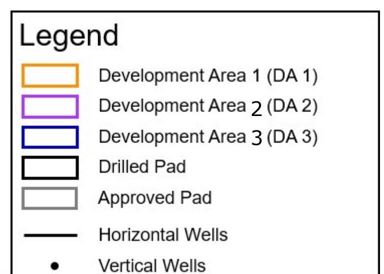
NOTE: PBIP is calculated from 2m below Producer Grid to SAGD Pay Top and aligned with Cenovus Energy methodology.

Co-Injection Map

Section 4.4.7.a



- November 8, 2019 - Non-Condensable Gas (NCG) Pilot started on Pad B13-09 (E)
- Injecting ~40 E3m3/d NCG (Methane) with steam into all six injector wells on Pad B13-09 (E)



Non-Condensable Gas (NCG) Co-Injection Performance

Section 4.2.7

Pad B13-09 (E) NCG Co-Injection Pilot

- NCG Co-Injection Pilot started November 8, 2019, with injection into all six injection wells
  - Stage 1: 15 E^3m^3/d NCG (0.6 volume % or 0.5 mol%) for 6 months
  - Stage 2: 19 E^3m^3/d NCG (0.9 volume % or 0.8 mol%) for 6 months

Cumulative gas injection (December 31, 2021) = 21,476 E^3m^3

Cumulative gas production (December 31, 2021) = 5,276 E^3m^3

Baseline gas production (assuming pre-NCG GOR) = 3 E^3m^3/d

Net gas retained = 16,199 E^3m^3

Current recycle ratio = 40% (Current Recycle ratio does not account for thief zone influence)

Cumulative Recycle Ratio (December 31, 2021) = 25%

Pilot Results

Able to reduce SOR without drops in pad bottom hole pressure (BHP)

NCG Co-Injection Pilot showed decreased SOR, while maintaining pre-NCG oil forecast

Recycle ratio of 40% indicating gas is staying within reservoir

There has been no observed impact of NCG co-injection on aquifers or wellbore integrity

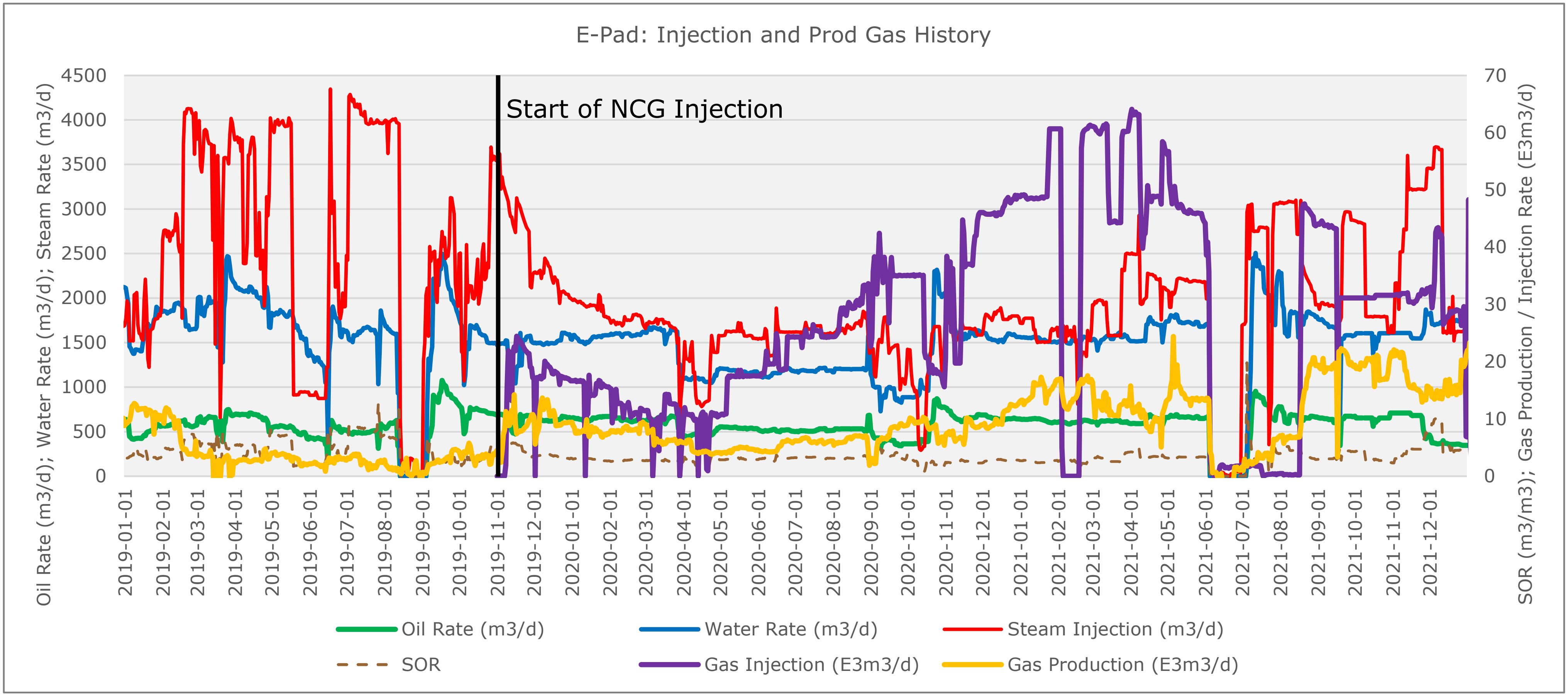
Operational Issues

Low temperatures in injection gas header

Potential for gas handling constraint of surface facilities with field wide implementation

Non-Condensable Gas Co-Injection Performance

Section 4.2.7



Subsection 4.3 8
Surface

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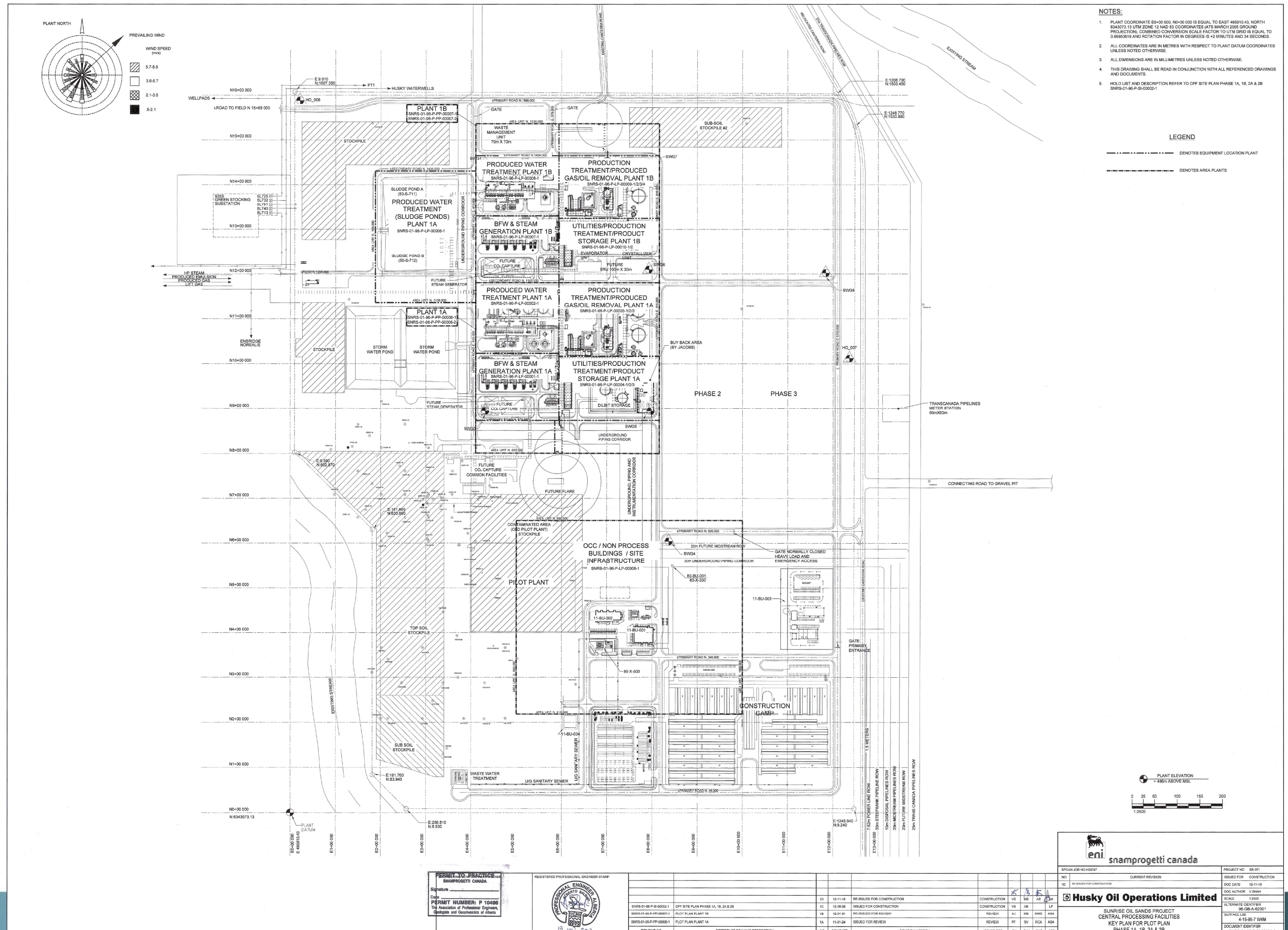
ENERGY

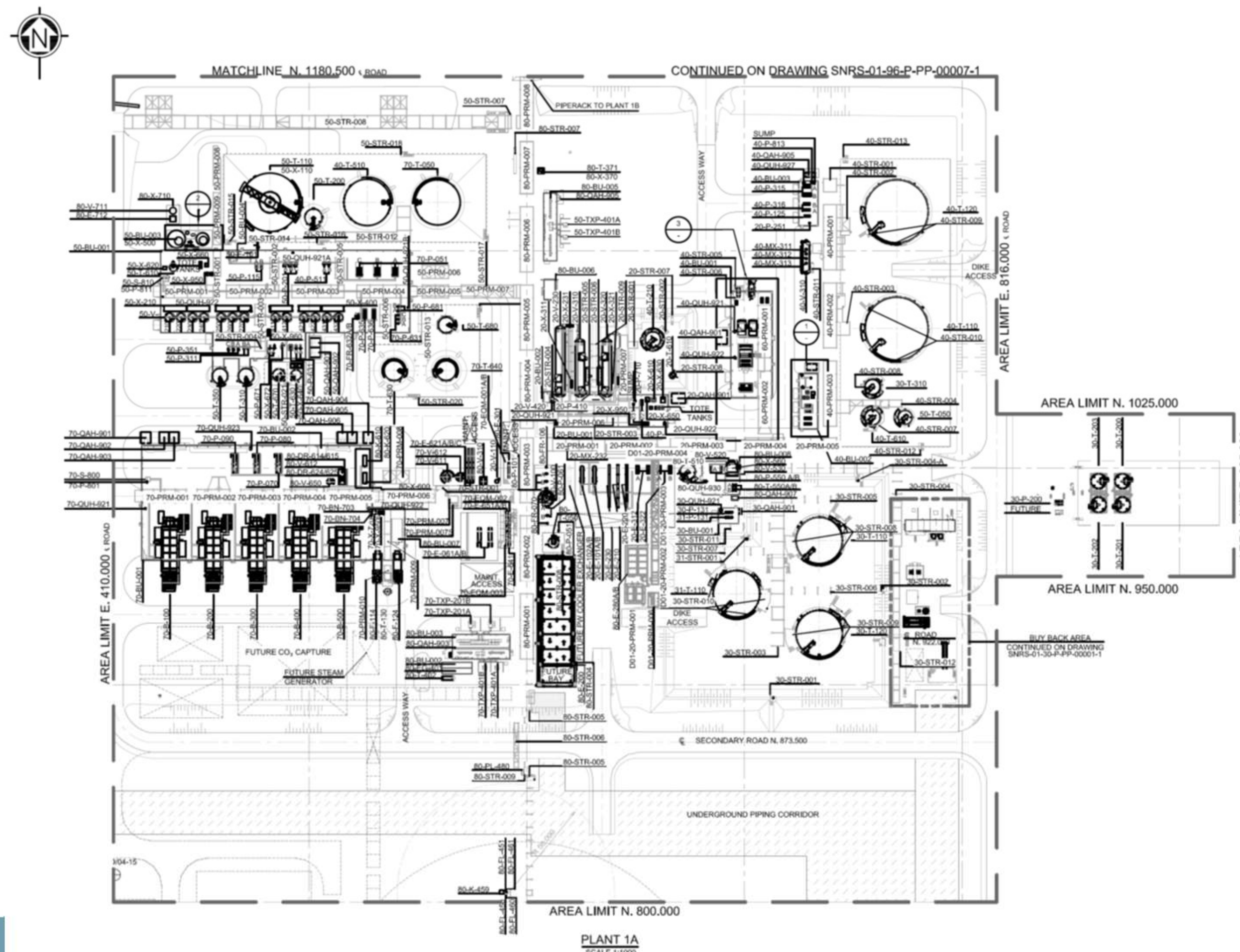
Central Processing Facility – Plot Plan

Section 4.3.8.a



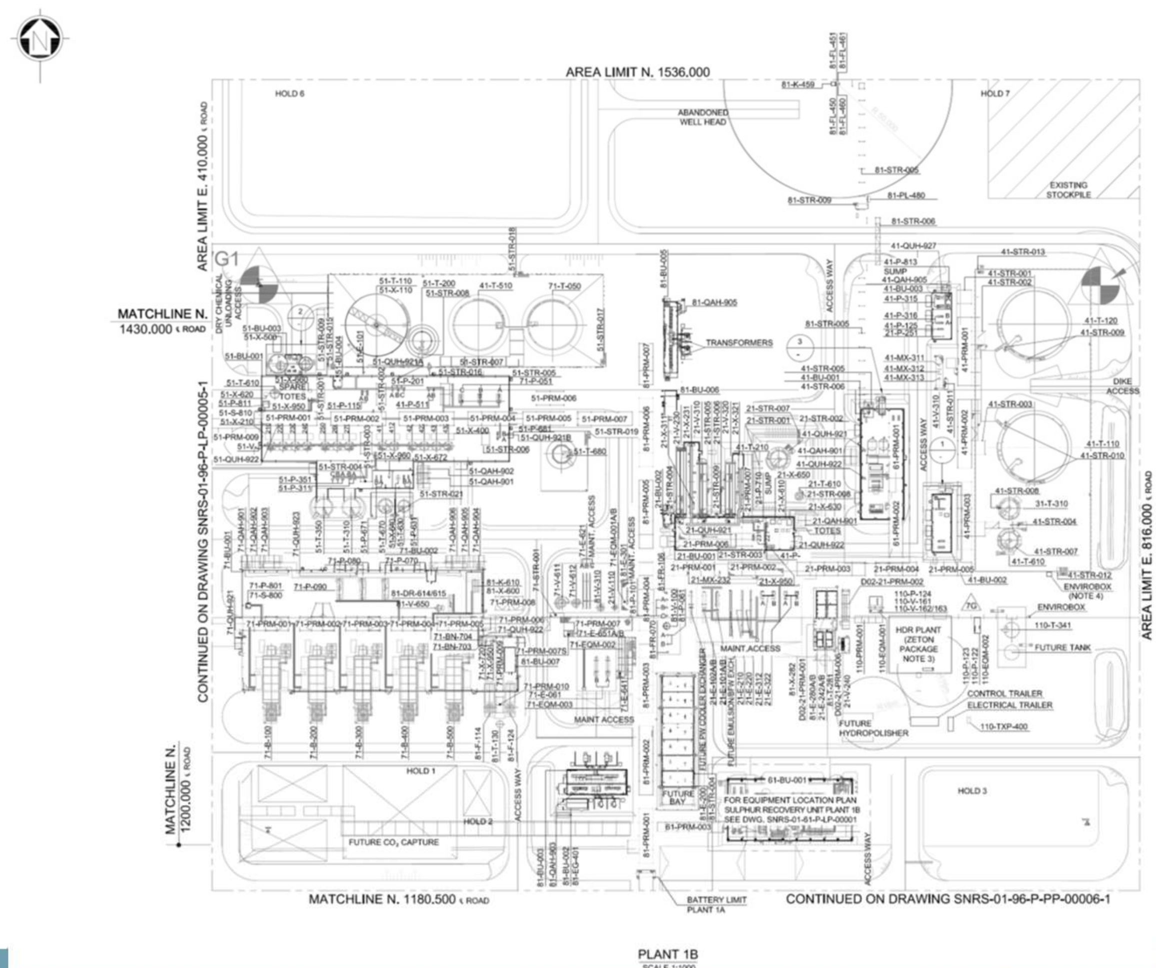
Central Processing Facility 1A – Plot Plan

Section 4.3.8.a



Central Processing Facility 1B – Plot Plan

Section 4.3.8.a



CPF Modifications

Section 4.3.8.b

- RTO Unit project piping, some equipment and tie-ins completed in Q3/Q4 2021. Awaiting delivery of the RTO unit to complete construction and commissioning (Q2 2022).
- The addition of a 3rd Emulsion-BFW Heat Exchanger suspended. The production forecast was revised lower and the requirements for additional heat exchange not required.
- The addition of an Inlet Separation Unit suspended. The production forecast was revised lower and the requirements for inlet degassing not required.
- There were no other CPF modifications completed requiring AER applications or updates

Annual and Design Throughput Comparison

Section 4.3.8.c

- Steam
  - System capacity 35,292 m^3/d of steam
  - January 2021 to December 2021 average flowrate of 26,592 m^3/d | 75% of Capacity

- Bitumen
  - System capacity 10,185 m^3/d of oil (64,059 bbl/d)
  - January 2021 to December 2021 average flowrate of 8,206 m^3/d (51,614 bbl/d) | 81% of capacity
  - Approved bitumen capacity is 11,765 m^3/d of oil (74,000 bbl/d)

Subsection 4.4 9-12 Historical and Upcoming Activity

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Well Suspensions and Abandonments

Section 4.4.9

The following wells have been suspended during the reporting period

Petrinex Data Set (Volumetric Activity):

Well Licence Number	UWI	Surface Location	District	AMU	Licence Status	Final Drill Date	Last Volumetric Activity Date	Directive 13 Inactive Status Date
0488072	02/07-17-095-07W4/0	15-8-95-7W4	Oil Sands Asset	Sunrise - Kearl Lake (Oil Sands)	Issued	14-Mar-2018	31-Oct-2020	31-Oct-2021
0497602	00/06-20-095-07W4/0	6-20-95-7W4	Oil Sands Asset	Sunrise - Kearl Lake (Oil Sands)	Issued	03-Mar-2020		31-Mar-2021
0497604	00/05-02-095-07W4/0	5-2-95-7W4	Oil Sands Asset	Sunrise - Kearl Lake (Oil Sands)	Issued	15-Mar-2020		31-Mar-2021
0497695	02/11-22-095-07W4/0	11-22-95-7W4	Oil Sands Asset	Sunrise - Kearl Lake (Oil Sands)	Issued	09-Mar-2020		31-Mar-2021
0497696	00/13-03-095-07W4/0	13-3-95-7W4	Oil Sands Asset	Sunrise - Kearl Lake (Oil Sands)	Issued	21-Mar-2020		31-Mar-2021

Regulatory Approvals

Section 4.4.10.a

ACT	Application No.	Application Description	Approval Issue Date
OSCA	1932732	Category 1 Amendment Application-Maximum Operation Pressure Monitoring Strategy Test	26-Apr-2021
OSCA	1932816	Development Area 1 (DA1) Permanent Maximum Operating Pressure (MOP) Increase OSCA Commercial Scheme Approval No. 10419	10-Sep-2021
OSCA	1933240	Amendment Application-Addition of Regenerative Thermal Oxidizer	04-Oct-2021
OSCA	1933850	Request for Extension to Temporary MOP Increase Application 1862831 and OSCA Approval 10419Q Development Area 1	28-Jul-2021
OSCA	1934077	Category 2 Amendment Application-Development Area 2 Drainage Pattern B16-16(S) and Development Area 1 Drainage Pattern B06-20(K)	03-Nov-2021
OSCA	1934329	Category 2 Amendment Application-Development Area 2 Drainage Pattern B10-21(U)	15-Dec-2021
OSCA	1935169	Category-1-Three-month Extension on Maximum Operation Pressure Monitoring Strategy Test (Application# 1932732 & Approval# 10419II)	15-Dec-2021
EPEA	016-206355	Amendment Application-Addition of Regenerative Thermal Oxidizer	21-Sep-2021
EPEA	017-206355	SRU Downtime Request for Turnaround Activities	2021/04/28

Material Changes to Performance or Operations

Section 4.4.10.b

- June 2021 to July 2021 - CPF 1A & 1B turnaround activities
- There were no other material changes to the performance, material balance, or energy balance during the reporting period

Lessons, Successes and Failures

Section 4.4.10.c

Oil Treating

- Overall bitumen and production rates were reduced due to market conditions and reduced steam production
- Minimal treating concerns were observed during reporting period
- 2021 (Q2/Q3) Plant 1A & 1B turnaround outage

De-Oiling

- Overall produced water rates were reduced due to market conditions and reduced steam production
- Minimal de-oiling concerns were observed during reporting period

Lessons, Successes and Failures

Section 4.4.10.c

Water Treatment

- Overall boiler feed water rates were reduced due to market conditions and reduced steam production
- Optimization was completed to improve equipment performance:
  - Media replacement in After Filters
  - WAC Resin change-out
  - WLS troubleshooting for improved alkalinity in boiler feed water

Lessons, Successes and Failures

Section 4.4.10.c

Steam Generation

- Overall steam production rates were reduced due to market conditions and limitations of steam system
- High Pressure Steam Separator PSV capacity increased with the replacement and addition of new PSVs

Sulphur Recovery Unit (SRU) & Utilities

- Plugging and overall SRU performance continued to be evaluated and mitigated – unit was cleaned in 2021 Turnaround
- Unplanned cleaning requirements and 2021 turnaround led to approximately 744 hours of downtime in the SRU
- Progressed the regenerative thermal oxidizer (RTO) project. Supplier delivery delays have pushed out final installation and commissioning into Q2 2022.

Update on Pilots or Technical Innovations

Section 4.4.10.d

- Non-Condensable Gas (NCG) Pilot
  - NCG Pilot on Pad B13-09 (E) was on-going throughout 2021

Compliance History

Section 4.4.11

Reportable Incidents

- Please see slides 33-36 for all 2021 reportable non compliances

Voluntary Self-Disclosures

- No new VSD's for Sunrise for the 2021 reporting year

2019-2020 Non-Compliance Summary – AER

Section 4.4.11

Incident Date	AER/CIC Reference no.	Nature of Non-Compliance (Spill exceedance, management issue, etc.)	Product	Volume (m3)	Description
2/4/2021	375796	Spill Exceedance	Process Water	21	The 71-UV-6110 10" isolation valve packing from the 1B high pressure steam separator was found to be leaking by area operator during normal rounds. The leak started out smaller around 200-300 L/day on Jan 30th. The leak hit the 2m3 volume reportable threshold around 3:00 pm on Feb 4th and called into the EDGE hot line. The unit was taken down to repair the valve on Feb 19th.
3/22/2021	377206	Spill Exceedance	Process Water	10	Upon opening UV-6110 to remedy the high level in HP Sep, 71-PSV-0611A on the 1B boiler feed water blowdown exchanger lifted below its set pressure and would not immediately reseat.
5/24/2021	379203	Off Lease	Emulsion	0.001	A small emulsion leak was discovered leaking from a drain valve bonnet located on the emulsion pipeline near Pad Q.
6/14/2021	379955	Spill Exceedance	Steam Condensate	6.3	During ramp up of Pad L and reintroducing steam after turnaround, worker noticed steam condensate spraying from the top of the CMS 221 tank.

Incident Date	AER/CIC Reference no.	Nature of Non-Compliance (Spill exceedance, management issue, etc.)	Product	Volume (m3)	Description
09/16/2021	383572	Spill Exceedance	Produced Water	25	Tree fell on ATCO power station providing power to the Sunrise substation. This power outage caused a plant wide power loss. Unit operator saw leak in the 1A tank farm. No fluid migrated outside the lined bermed area.
11/3/2021	385216	Spill Exceedance	Boiler Feedwater	12	1B lime slurry tank (51-T-512) overflowed during a manual operation. The panel operator missed the high alarm and the tank proceeded to overflow through the overflow piping into the building. The estimate of fluid released was 12m3. All the fluid was released in the building and contained by the sump and trenching system.
11/27/2021	385920	Off Lease	Emulsion	0.1	Area along CMS 220 piping was isolated to replace PSV. An upstream block valve was passing and travelled back up the piping and down through the open drain line on product released to surrounding natural area (off lease).

Incident Date	AER/CIC Reference no.	Nature of Non-Compliance (Spill exceedance, management issue, etc.)	Product	Volume (m3)	Description
2/12/2021	376023	CEMS Code non compliance	N/A	N/A	While checking the 1A CEMS it was noticed there was a "Communication Failure Alarm" and the unit would not pass a daily check cycle. The downtime that resulted from fixing this issue resulted in not meeting the required monthly 90% operational time as required by the Alberta CEMS code.
09/15/2021	383532	EPEA Approval Contravention	N/A	N/A	Lab results for the Sunrise Waste water treatment plant were received indicating a monthly average total phosphorus level of 1.6 mg/L (EPEA approval limit is 1.0 mg/L). A spike in phosphorus due to a tank cleaning caused an elevated monthly average.
09/16/2021	31354178	Directive 60	N/A	N/A	Reportable flaring event from 1A low pressure flare associated with plant outage. Total flare time was 5.93 hours which exceeds the Directive 60 threshold.
09/22/2021	384511	EPEA Approval Contravention	N/A	N/A	While performing groundwater (GW) sampling during the 2021 spring Keg River GW monitoring program event, the pump used to purged the monitoring wells broke down during the program with two monitoring wells remaining to be completed. These two wells were not able to be sampled at the time of the spring monitoring event.

Incident Date	AER/CIC Reference no.	Nature of Non-Compliance (Spill exceedance, management issue, etc.)	Product	Volume (m3)	Description
7/10/2021	381036	AAAQG	N/A	N/A	Wapasu station air monitoring station registered a 24-hour and 1-hour PM2.5 Alberta Ambient Air Quality Objective (AAAQO) and Alberta Ambient Air Quality Guideline (AAAQG) exceedance.
07/15/2021	381285	AAAQG	N/A	N/A	Wapasu station air monitoring station registered a 24-hour and 1-hour PM2.5 Alberta Ambient Air Quality Objective (AAAQO) and Alberta Ambient Air Quality Guideline (AAAQG) exceedance.
07/19/20/21, 2021	381690	AAAQG	N/A	N/A	Wapasu station air monitoring station registered a 24-hour and 1-hour PM2.5 Alberta Ambient Air Quality Objective (AAAQO) and Alberta Ambient Air Quality Guideline (AAAQG) exceedance.
08 3/5/6/2021	382282	AAAQG	N/A	N/A	Wapasu station air monitoring station registered a 24-hour and 1-hour PM2.5 Alberta Ambient Air Quality Objective (AAAQO) and Alberta Ambient Air Quality Guideline (AAAQG) exceedance.
12/11/2021	386331	AAAQG	N/A	N/A	Wapasu station air monitoring station registered a 1-hour PM2.5 Alberta Ambient Air Quality Objective (AAAQO) and Alberta Ambient Air Quality Guideline (AAAQG) exceedance.

Future Plans

Section 4.4.12

Expected Changes to Performance or Operations

- No other material changes to performance to operations are expected

Expected AER Applications

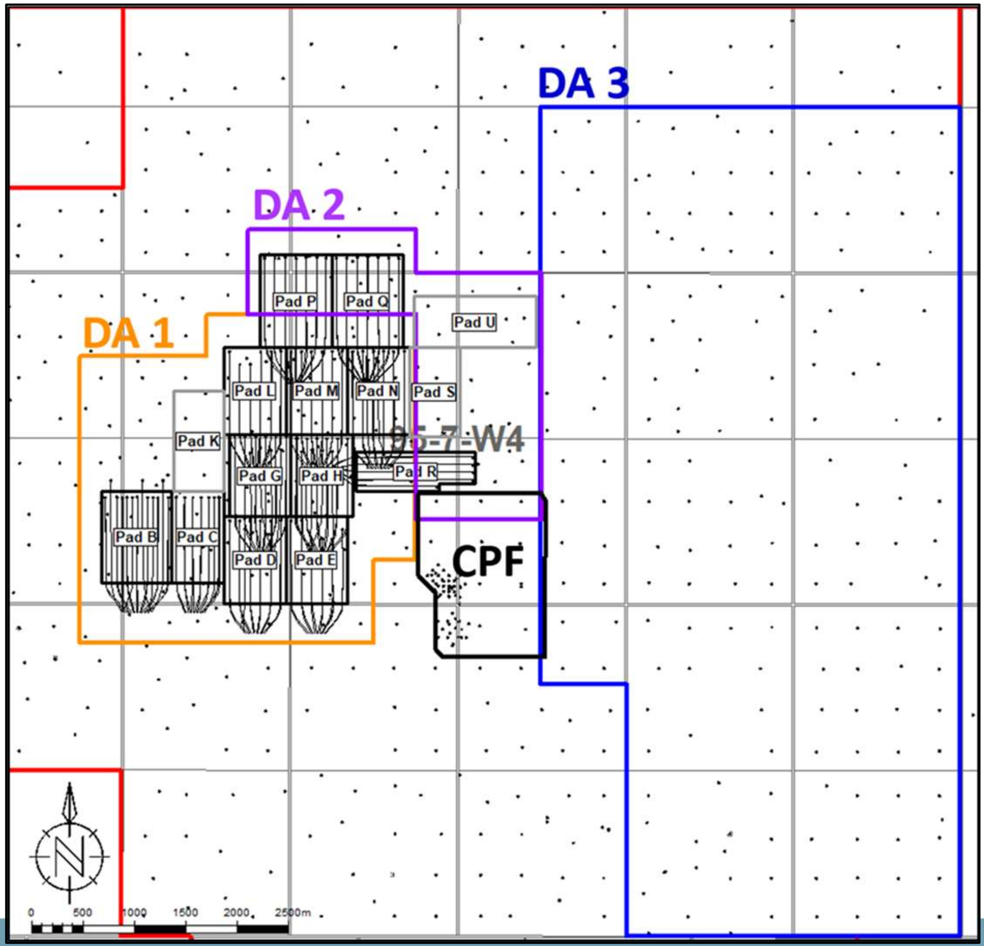
- SRU downtime amendment – submittal to extend allowance SRU downtime to 90% availability

- Produced Water and regen waste disposal – submittal to re-license current observation wells to disposal wells (09-03-095-07W4 & 103/04-22-097-07W4)

- Cat-1 Gas Cooling facility amendment to accommodate future pads development

Planned Development

Section 4.4.12



- Pads B16-16(S), B06-20(K) and B10-21(U) are the next pads in the development plan
- Evaluating development options for DA3

Legend

- Sunrise Lease Area
- Development Area 1 (DA 1)
- Development Area 2 (DA 2)
- Development Area 3 (DA 3)
- Drilled Pad
- Approved Pad
- Horizontal Wells
- Vertical Wells