

SINCLAIR UNIT NO. 19

Waterflood Progress Report 2020

Prepared for:

Manitoba Industry, Economic Development and Mines

Petroleum Branch

Prepared by:



TUNDRA OIL & GAS

Date: 2021-08-26

Introduction

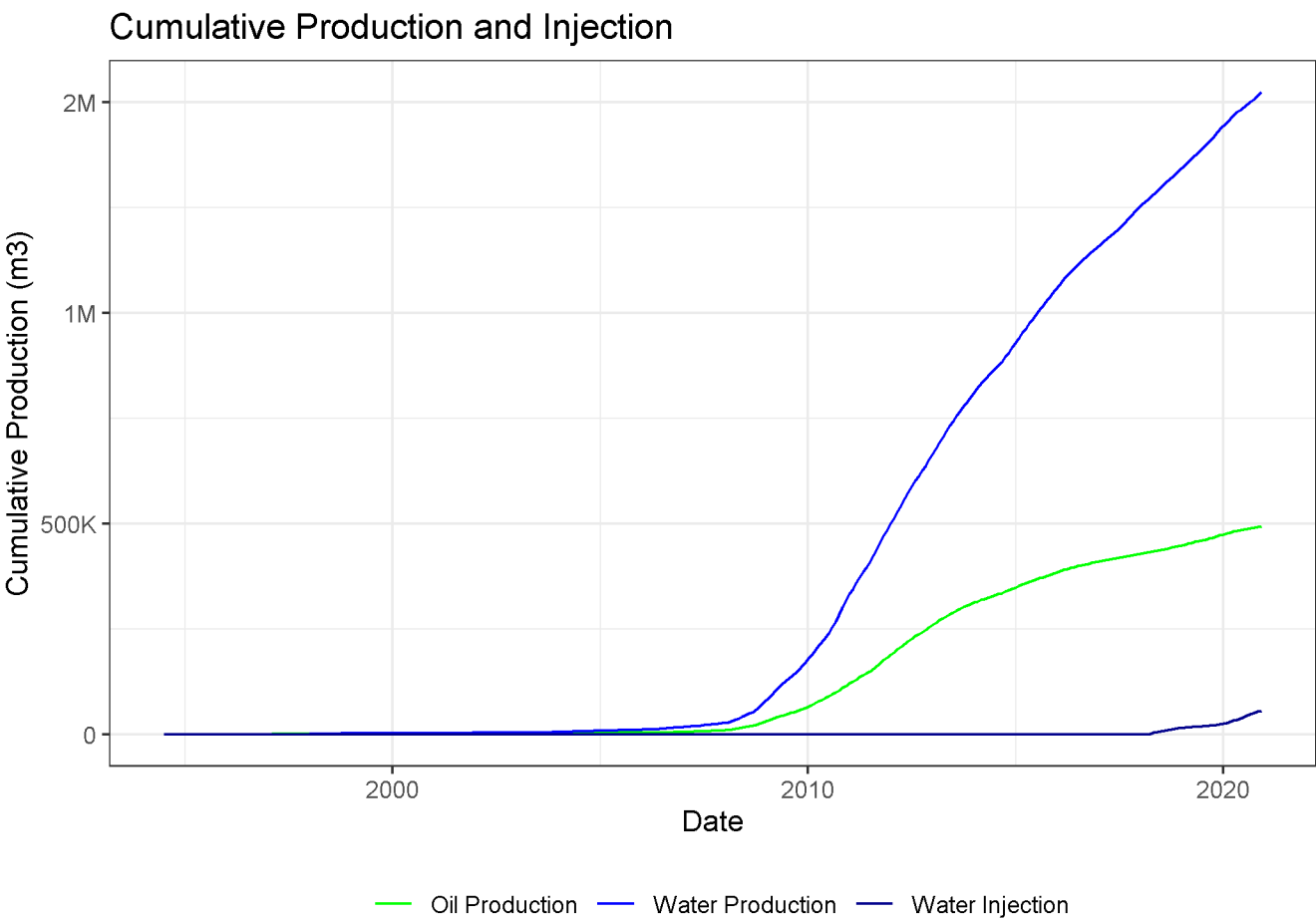
Sinclair Unit No. 19 Enhanced Oil Recovery (EOR) Waterflood Project was approved on October 1, 2017 with Tundra Oil and Gas (Tundra) as Operator. The EOR Unit area contains 83 wells in 192 LSDs in Townships 8 & 9 Range 29 W1. The Unit contains 83 wells. 61 producers, 5 injectors, and 17 abandoned/suspended/other.

Monthly oil and water production rates, injection rate, GOR and WOR

MONTH	Cal Day Oil m3/d	Cal Day Water m3/d	Cal Day Injection m3/d	WOR	GOR
JAN 2020	77.87	292.23	48.84	3.75	0
FEB 2020	75.50	288.24	55.07	3.82	0
MAR 2020	74.33	296.99	81.89	4.00	0
APR 2020	67.27	285.00	105.28	4.24	0
MAY 2020	64.76	234.78	70.88	3.63	0
JUN 2020	51.77	172.47	92.67	3.33	0
JUL 2020	50.54	203.17	98.77	4.02	0
AUG 2020	47.25	201.80	109.54	4.27	0
SEP 2020	54.99	216.38	113.16	3.93	0
OCT 2020	50.76	224.70	103.74	4.43	0
NOV 2020	47.58	236.97	88.34	4.98	0
DEC 2020	49.42	263.69	82.41	5.34	0
Average	59.34	243.04	87.55		

Year summary of produced oil, gas, water and fluid injected

Categories	m3
Oil Production	21,700
Water Production	88,921
Gas Production	0
Water Injection	32,058
Cumulative Oil	494,028
Cumulative Water	1,522,947
Cumulative Injection	56,663



Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
100.04-09-009-29W1.00			117	-94	-18	723	-91	653	1,676	2,696	2,986	2,208	1,086
100.04-14-009-29W1.00	-96	-95	-96	-96	-95	-94	345	1,346	2,078	2,669	3,010	3,738	1,051
100.13-04-009-29W1.00	6,566	6,567	6,568	5,448	5,106	5,106	5,106	2,022	1,331	1,267	1,267	1,782	4,011
100.16-03-009-29W1.00	6,515	6,567	6,465	6,568	6,471	6,565	6,573	6,571	6,548	6,555	6,543	6,566	6,542
102.12-11-009-29W1.00		-84	252	2,607	2,932	2,985	2,946	3,873	4,886	4,958	4,962	4,957	3,207

Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
100.04-09-009-29W1.00			115	608	10	827	1,075	1,061	979	976	782	550	6,983
100.04-14-009-29W1.00	592	680	1,064	1,190	1,166	1,105	1,181	1,221	1,137	1,173	996	1,158	12,663
100.13-04-009-29W1.00	304	259	255	58								40	916
100.16-03-009-29W1.00	618	478	457	380	354	322	321	304	281	283	271	270	4,339
102.12-11-009-29W1.00		181	648	922	667	526	485	810	998	784	601	537	7,159
Grand Total	1,514	1,598	2,539	3,158	2,197	2,780	3,062	3,396	3,395	3,216	2,650	2,555	32,060

Voidage

All Volumes are in m3 Oil Formation Volume Factor (Rm3/Sm3) = 1.071

MONTH	Oil	Water	Injection	Cumulative Oil	Cumulative Water	Cumulative Injection	VRR	Cumulative VRR
JAN 2020	2,414	9,059	1,514	474,746	1,443,083	26,120	0.130	0.013
FEB 2020	2,189	8,358	1,597	476,935	1,451,441	27,717	0.149	0.014
MAR 2020	2,304	9,206	2,538	479,239	1,460,647	30,255	0.217	0.015
APR 2020	2,017	8,551	3,158	481,256	1,469,198	33,413	0.295	0.017
MAY 2020	2,008	7,279	2,197	483,264	1,476,477	35,610	0.233	0.018
JUN 2020	1,553	5,174	2,780	484,817	1,481,651	38,390	0.407	0.019
JUL 2020	1,566	6,298	3,062	486,383	1,487,949	41,452	0.384	0.021
AUG 2020	1,464	6,256	3,396	487,847	1,494,205	44,848	0.434	0.022
SEP 2020	1,650	6,491	3,395	489,497	1,500,696	48,243	0.411	0.024
OCT 2020	1,574	6,965	3,216	491,071	1,507,661	51,459	0.372	0.025
NOV 2020	1,428	7,110	2,650	492,499	1,514,771	54,109	0.307	0.026
DEC 2020	1,532	8,175	2,555	494,031	1,522,946	56,664	0.260	0.028

Workovers

UWI	Date	Description
100.01-26-008-29W1.00	2020-12-08	Packers Plus Drill-outs

Well List

UWI	Type	Status
100.09-23-008-29W1.00	Vertical	Producing
100.10-23-008-29W1.00	Vertical	Suspended
100.11-23-008-29W1.00	Vertical	Abandoned Zone
100.12-23-008-29W1.00	Vertical	Abandoned Zone
100.16-23-008-29W1.00	Horizontal	Producing
100.03-25-008-29W1.00	Horizontal	Producing
100.04-25-008-29W1.00	Vertical	Abandoned Zone
100.05-25-008-29W1.00	Horizontal	Producing
100.09-25-008-29W1.00	Vertical	Producing
100.12-25-008-29W1.00	Horizontal	Producing
102.12-25-008-29W1.00	Horizontal	Producing
100.13-25-008-29W1.00	Horizontal	Producing
103.13-25-008-29W1.00	Horizontal	Producing
100.01-26-008-29W1.00	Horizontal	Producing
100.05-26-008-29W1.00	Vertical	Producing
100.08-26-008-29W1.00	Horizontal	Producing
100.09-26-008-29W1.00	Horizontal	Producing
100.12-26-008-29W1.00	Vertical	Producing
100.16-26-008-29W1.00	Vertical	Abandoned Zone
102.16-26-008-29W1.00	Horizontal	Producing
100.01-35-008-29W1.00	Horizontal	Producing
100.05-35-008-29W1.00	Vertical	Producing
100.08-35-008-29W1.00	Vertical	Producing
102.08-35-008-29W1.00	Horizontal	Producing
100.09-35-008-29W1.00	Horizontal	Producing
100.12-35-008-29W1.00	Vertical	Abandoned Zone
100.16-35-008-29W1.03	Vertical	Abandoned Zone
102.16-35-008-29W1.00	Horizontal	Producing
100.09-01-009-29W1.00	Horizontal	Producing
100.16-01-009-29W1.00	Horizontal	Producing
100.04-02-009-29W1.00	Horizontal	Producing
100.05-02-009-29W1.00	Horizontal	Producing
100.12-02-009-29W1.00	Horizontal	Producing
100.13-02-009-29W1.00	Horizontal	Producing
100.16-02-009-29W1.00	Vertical	Producing
100.09-03-009-29W1.00	Horizontal	Producing
102.09-03-009-29W1.00	Horizontal	Producing
100.16-03-009-29W1.00	Horizontal	Injection
100.12-04-009-29W1.00	Vertical	Suspended
102.12-04-009-29W1.00	Horizontal	Producing
100.13-04-009-29W1.00	Horizontal	Injection
100.01-09-009-29W1.00	Horizontal	Suspended
100.04-09-009-29W1.00	Horizontal	Producing

UWI	Type	Status
100.05-09-009-29W1.00	Horizontal	Producing
100.12-09-009-29W1.00	Horizontal	Producing
102.13-09-009-29W1.00	Horizontal	Producing
100.01-10-009-29W1.00	Horizontal	Producing
100.02-10-009-29W1.00	Vertical	Producing
100.08-10-009-29W1.00	Horizontal	Producing
100.09-10-009-29W1.00	Vertical	Producing
102.09-10-009-29W1.00	Horizontal	Producing
104.09-10-009-29W1.00	Horizontal	Producing
100.12-10-009-29W1.00	Vertical	Producing
100.16-10-009-29W1.00	Horizontal	Producing
103.16-10-009-29W1.00	Horizontal	Producing
100.09-11-009-29W1.00	Vertical	Producing
100.12-11-009-29W1.00	Vertical	Abandoned Zone
102.12-11-009-29W1.00	Horizontal	Producing
100.13-11-009-29W1.00	Horizontal	Producing
100.01-12-009-29W1.00	Vertical	Producing
102.01-12-009-29W1.00	Horizontal	Producing
100.04-12-009-29W1.00	Vertical	Producing
100.08-12-009-29W1.00	Horizontal	Producing
100.09-12-009-29W1.00	Horizontal	Producing
100.12-12-009-29W1.00	Vertical	Producing
100.16-12-009-29W1.00	Horizontal	Producing
102.01-13-009-29W1.00	Horizontal	Producing
100.03-13-009-29W1.02	Vertical	Abandoned Zone
100.05-13-009-29W1.00	Vertical	Abandoned Zone
100.08-13-009-29W1.00	Horizontal	Producing
100.12-13-009-29W1.00	Horizontal	Producing
100.13-13-009-29W1.00	Horizontal	Producing
102.16-13-009-29W1.00	Horizontal	Producing
100.04-14-009-29W1.00	Horizontal	Injection
100.05-14-009-29W1.00	Horizontal	Producing
100.01-15-009-29W1.00	Horizontal	Producing
104.01-15-009-29W1.00	Horizontal	Producing
100.05-15-009-29W1.02	Vertical	Producing
100.08-15-009-29W1.02	Vertical	Producing
102.08-15-009-29W1.00	Horizontal	Producing
100.01-16-009-29W1.02	Vertical	Commingled
100.05-16-009-29W1.00	Horizontal	Producing
100.02-17-009-29W1.00	Horizontal	Producing