


SINCLAIR UNIT NO. 3  
Waterflood Progress Report 2020

Prepared for:  
Manitoba Industry, Economic Development and Mines  
Petroleum Branch

Prepared by:



TUNDRA OIL & GAS

Date: 2021-08-26

## Introduction

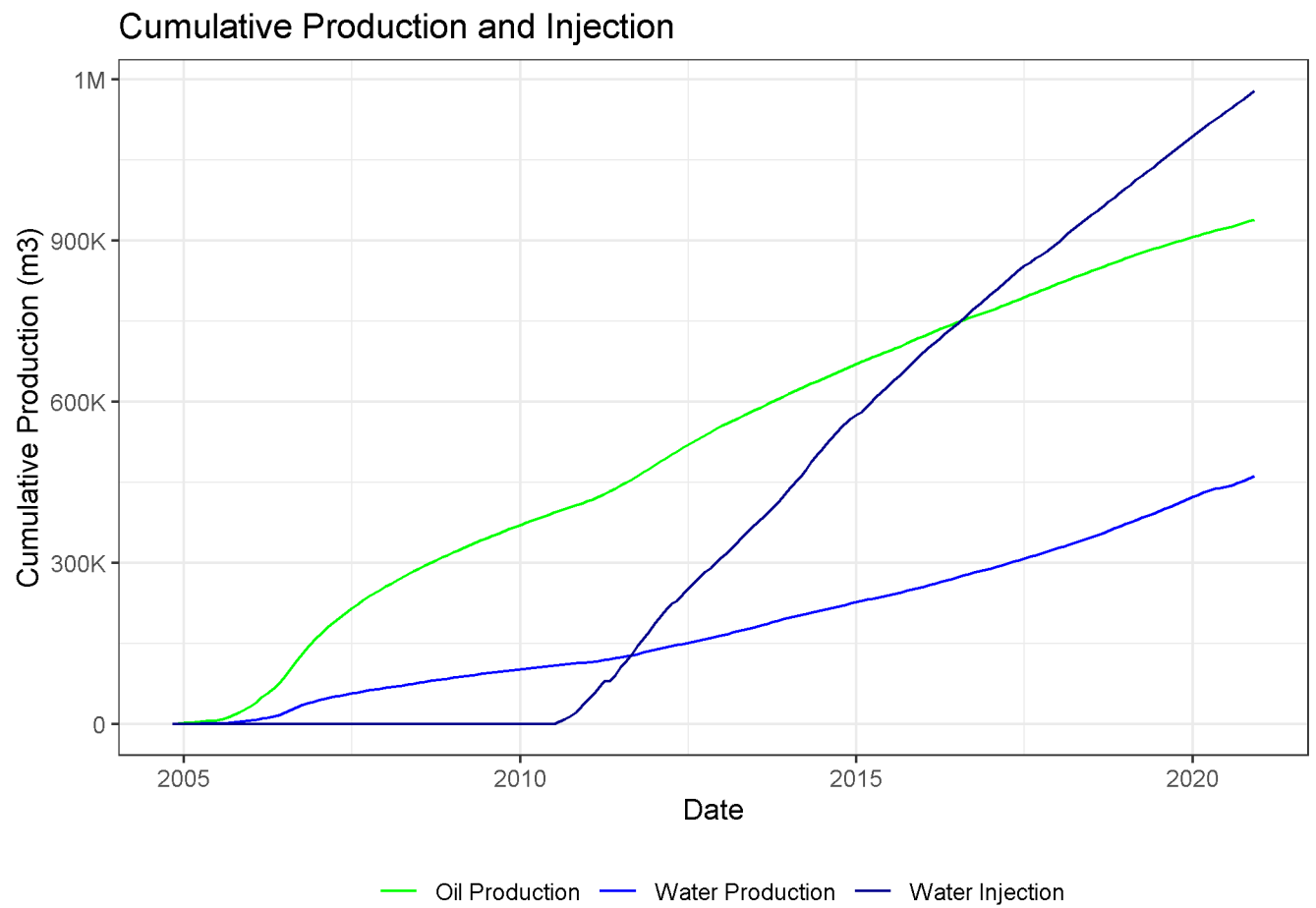
Sinclair Unit No. 3 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 18 effective November 1, 2009 with Tundra Oil and Gas (Tundra) as Operator. The EOR project area contains wells in 6 sections in Township 8, Range 29 W1. The Unit contains 125 wells. 100 producers, 21 injectors, and 4 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	98.82	140.71	267.77	1.42	2.33
FEB 2020	97.83	140.08	267.72	1.43	0.00
MAR 2020	101.73	144.92	242.87	1.42	0.00
APR 2020	96.93	132.65	243.33	1.37	0.00
MAY 2020	93.34	89.48	242.29	0.96	0.00
JUN 2020	76.84	63.56	242.07	0.83	0.00
JUL 2020	83.25	66.09	246.68	0.79	0.00
AUG 2020	89.32	84.86	244.45	0.95	0.00
SEP 2020	101.54	130.58	249.40	1.29	0.00
OCT 2020	113.07	140.27	248.10	1.24	0.00
NOV 2020	104.41	142.71	252.87	1.37	0.00
DEC 2020	101.49	138.56	257.26	1.37	0.00
Average	96.55	117.87	250.40		

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

Categories	m3
Oil Production	35,345
Water Production	43,101
Gas Production	7
Water Injection	91,626
Cumulative Oil	938,895
Cumulative Water	461,275
Cumulative Injection	1,178,145



## Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
102.01-01-008-29W1.00	6,556	6,554	6,556	6,550	6,502	6,514	6,513	6,573	6,568	6,576	6,593	6,526	6,548
102.01-03-008-29W1.00	6,409	6,414	6,426	6,437	6,436	6,430	6,415	6,371	6,454	6,430	6,427	6,444	6,424
102.01-10-008-29W1.00	6,663	6,664	6,663	6,663	6,663	6,665	6,611	6,457	6,665	6,657	6,661	6,663	6,641
102.01-12-008-29W1.00	6,518	6,521	6,524	6,518	6,478	6,488	6,477	6,535	6,514	6,518	6,531	6,508	6,511
102.04-11-008-29W1.00	6,589	6,588	6,592	6,585	6,566	6,558	6,542	6,599	6,583	6,583	6,591	6,585	6,580
102.05-02-008-29W1.00	4,254	4,297	4,363	4,388	5,212	5,580	5,792	6,031	6,070	6,095	6,013	6,052	5,346
102.05-11-008-29W1.00	6,556	6,555	6,561	6,555	6,538	6,536	6,510	6,568	6,547	6,552	6,597	6,562	6,553
102.08-03-008-29W1.00	6,569	6,571	6,575	6,581	6,581	6,580	6,571	6,573	6,579	6,575	6,575	6,576	6,576
102.08-10-008-29W1.00	6,563	6,564	6,578	6,580	6,583	6,596	6,572	6,564	6,605	6,590	6,578	6,587	6,580
102.08-12-008-29W1.00	6,551	6,542	6,554	6,536	6,449	6,482	6,498	6,570	6,494	6,533	6,563	6,537	6,526
102.09-01-008-29W1.00	6,555	6,551	6,555	6,546	6,494	6,500	6,519	6,571	6,528	6,530	6,556	6,569	6,540
102.09-12-008-29W1.00	3,974	3,966	4,051	3,961	3,933	4,399	5,134	5,447	5,809	5,934	6,205	6,349	4,930
102.12-02-008-29W1.00	6,519	6,506	5,718	6,551	6,465	6,485	6,548	6,611	6,521	6,543	6,597	6,563	6,469
102.13-02-008-29W1.00	5,636	5,760	6,255	6,568	6,530	6,534	6,513	6,575	6,561	6,557	6,564	6,561	6,384
102.13-11-008-29W1.00	6,548	6,551	6,556	6,546	6,502	6,530	6,506	6,566	6,532	6,541	6,562	6,553	6,541
102.16-01-008-29W1.00	6,554	6,550	6,094	6,575	6,509	6,539	6,543	6,602	6,573	6,569	6,592	6,578	6,523
102.16-03-008-29W1.00	6,569	6,570	6,575	6,571	6,571	6,574	6,571	6,562	6,571	6,571	6,571	6,570	6,570
102.16-10-008-29W1.00	6,556	6,557	6,136	5,750	5,883	6,573	6,488	6,310	6,573	6,567	6,561	6,568	6,377
103.01-10-008-29W1.00	6,560	6,472	5,603	5,573	5,573	5,573	5,573	5,573	5,573	5,573	6,035	2,123	5,484
103.01-12-008-29W1.00	6,553	6,555	6,560	6,555	6,543	6,525	6,522	6,569	6,541	6,550	6,598	6,554	6,552
103.05-02-008-29W1.00	6,555	6,553	6,555	6,546	6,481	6,494	6,516	6,576	6,591	6,571	6,672	6,528	6,553

## Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
102.01-01-008-29W1.00	437	408	430	413	427	403	427	423	402	409	391	405	4,975
102.01-03-008-29W1.00	432	403	431	413	399	390	394	384	390	399	378	386	4,799
102.01-10-008-29W1.00	287	262	277	263		259	252	257	261	263	252	258	2,891
102.01-12-008-29W1.00	344	319	336	324	320	311	333	325	307	315	325	313	3,872
102.04-11-008-29W1.00	256	238	251	242	240	223	231	224	222	236	226	225	2,814
102.05-02-008-29W1.00	295	281	300	292	382	395	422	425	396	403	404	449	4,444
102.05-11-008-29W1.00	300	283	305	297	300	285	318	310	296	305	294	303	3,596
102.08-03-008-29W1.00	499	457	478	452	449	437	448	437	415	422	404	415	5,313
102.08-10-008-29W1.00	447	407	442	425	422	407	385	372	354	398	383	391	4,833
102.08-12-008-29W1.00	371	347	370	360	359	350	369	365	350	364	355	368	4,328
102.09-01-008-29W1.00	723	669	702	670	650	582	583	561	600	633	612	626	7,611
102.09-12-008-29W1.00	854	725	724	666	654	733	873	930	1,021	1,021	960	985	10,146
102.12-02-008-29W1.00	397	376	360	400	392	373	407	402	386	393	375	382	4,643
102.13-02-008-29W1.00	169	220	300	296	272	255	267	261	245	250	240	245	3,020
102.13-11-008-29W1.00	291	274	289	277	279	268	285	281	268	274	265	272	3,323
102.16-01-008-29W1.00	521	487	479	523	505	469	494	481	463	483	468	483	5,856
102.16-03-008-29W1.00	332	307	326	313	306	307	322	317	304	310	299	310	3,753
102.16-10-008-29W1.00	281	257	137	127	333	282	269	261	264	261	248	251	2,971
103.01-10-008-29W1.00	488	505	22		263						175	357	1,810
103.01-12-008-29W1.00	208	194	205	198	201	193	204	202	192	196	189	195	2,377
103.05-02-008-29W1.00	369	345	365	349	358	340	364	360	346	356	343	356	4,251
Grand Total	8,301	7,764	7,529	7,300	7,511	7,262	7,647	7,578	7,482	7,691	7,586	7,975	91,626

## 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	3,065	4,363	8,301	906,617	422,532	1,094,819	1.086	0.786
FEB 2020	2,837	4,063	7,764	909,454	426,595	1,102,583	1.093	0.787
MAR 2020	3,156	4,492	7,529	912,610	431,087	1,110,112	0.956	0.788
APR 2020	2,907	3,980	7,300	915,517	435,067	1,117,412	1.029	0.789
MAY 2020	2,894	2,775	7,511	918,411	437,842	1,124,923	1.279	0.791
JUN 2020	2,306	1,907	7,262	920,717	439,749	1,132,185	1.659	0.794
JUL 2020	2,581	2,049	7,647	923,298	441,798	1,139,832	1.589	0.797
AUG 2020	2,769	2,631	7,578	926,067	444,429	1,147,410	1.354	0.799
SEP 2020	3,047	3,916	7,482	929,114	448,345	1,154,892	1.042	0.800
OCT 2020	3,505	4,350	7,691	932,619	452,695	1,162,583	0.949	0.801
NOV 2020	3,133	4,280	7,586	935,752	456,975	1,170,169	0.994	0.802
DEC 2020	3,145	4,296	7,975	938,897	461,271	1,178,144	1.041	0.803

## Workovers

UWI	Date	Description
100.01-02-008-29W1.00	2020-12-03	Rigless Acid Stimulation
100.03-10-008-29W1.00	2020-12-03	Rigless Acid Stimulation
100.05-10-008-29W1.00	2020-12-03	Rigless Acid Stimulation
100.06-10-008-29W1.00	2020-12-03	Rigless Acid Stimulation
100.07-01-008-29W1.00	2020-12-03	Rigless Acid Stimulation
100.07-10-008-29W1.00	2020-12-04	Rigless Acid Stimulation
100.09-03-008-29W1.00	2020-12-04	Rigless Acid Stimulation
100.13-01-008-29W1.00	2020-12-04	Rigless Acid Stimulation
100.14-12-008-29W1.00	2020-12-04	Rigless Acid Stimulation
100.16-03-008-29W1.00	2020-12-04	Rigless Acid Stimulation

## Well List

UWI	Type	Status
100.01-01-008-29W1.00	Vertical	Producing
102.01-01-008-29W1.00	Horizontal	Injection
100.02-01-008-29W1.00	Vertical	Producing
100.03-01-008-29W1.00	Vertical	Producing
100.04-01-008-29W1.00	Vertical	Producing
100.05-01-008-29W1.00	Vertical	Producing
102.06-01-008-29W1.00	Vertical	Producing
100.07-01-008-29W1.00	Vertical	Producing
100.08-01-008-29W1.00	Vertical	Producing
100.09-01-008-29W1.00	Vertical	Producing
102.09-01-008-29W1.00	Horizontal	Injection
100.10-01-008-29W1.00	Vertical	Producing
100.11-01-008-29W1.00	Vertical	Producing
100.12-01-008-29W1.00	Vertical	Producing
100.13-01-008-29W1.00	Vertical	Producing
102.13-01-008-29W1.00	Horizontal	Producing
100.14-01-008-29W1.00	Vertical	Producing
100.15-01-008-29W1.00	Vertical	Producing
100.16-01-008-29W1.00	Vertical	Producing
102.16-01-008-29W1.00	Horizontal	Injection
100.01-02-008-29W1.00	Vertical	Producing
100.02-02-008-29W1.00	Vertical	Producing
100.03-02-008-29W1.00	Vertical	Producing
100.04-02-008-29W1.00	Vertical	Producing
102.04-02-008-29W1.00	Horizontal	Producing
100.05-02-008-29W1.00	Vertical	Producing
102.05-02-008-29W1.00	Horizontal	Injection
103.05-02-008-29W1.00	Horizontal	Injection
100.06-02-008-29W1.00	Vertical	Producing
100.07-02-008-29W1.00	Vertical	Producing
100.08-02-008-29W1.00	Vertical	Producing
100.09-02-008-29W1.00	Vertical	Producing
100.10-02-008-29W1.00	Vertical	Producing
100.11-02-008-29W1.00	Vertical	Producing
100.12-02-008-29W1.00	Vertical	Producing
102.12-02-008-29W1.00	Horizontal	Injection
100.13-02-008-29W1.00	Vertical	Producing
102.13-02-008-29W1.00	Horizontal	Injection
103.13-02-008-29W1.00	Horizontal	Producing
100.14-02-008-29W1.00	Vertical	Producing
100.15-02-008-29W1.00	Vertical	Producing
100.16-02-008-29W1.00	Vertical	Producing
100.01-03-008-29W1.00	Vertical	Producing

UWI	Type	Status
102.01-03-008-29W1.00	Horizontal	Injection
100.02-03-008-29W1.00	Vertical	Producing
100.03-03-008-29W1.00	Vertical	Producing
100.04-03-008-29W1.00	Vertical	Suspended
100.05-03-008-29W1.00	Vertical	Producing
100.06-03-008-29W1.00	Vertical	Producing
100.07-03-008-29W1.00	Vertical	Producing
100.08-03-008-29W1.00	Vertical	Producing
102.08-03-008-29W1.00	Horizontal	Injection
100.09-03-008-29W1.00	Vertical	Producing
100.10-03-008-29W1.00	Vertical	Producing
100.11-03-008-29W1.00	Vertical	Producing
100.12-03-008-29W1.00	Vertical	Producing
100.13-03-008-29W1.00	Vertical	Producing
100.14-03-008-29W1.00	Vertical	Producing
100.15-03-008-29W1.00	Vertical	Producing
100.16-03-008-29W1.00	Vertical	Producing
102.16-03-008-29W1.00	Horizontal	Injection
100.01-10-008-29W1.00	Vertical	Producing
102.01-10-008-29W1.00	Horizontal	Injection
103.01-10-008-29W1.00	Horizontal	Injection
100.02-10-008-29W1.00	Vertical	Producing
100.03-10-008-29W1.00	Vertical	Producing
100.04-10-008-29W1.00	Vertical	Producing
102.04-10-008-29W1.00	Horizontal	Producing
100.05-10-008-29W1.00	Vertical	Producing
100.06-10-008-29W1.00	Vertical	Producing
100.07-10-008-29W1.00	Vertical	Producing
100.08-10-008-29W1.00	Vertical	Producing
102.08-10-008-29W1.00	Horizontal	Injection
100.09-10-008-29W1.00	Vertical	Producing
100.10-10-008-29W1.00	Vertical	Producing
100.11-10-008-29W1.00	Vertical	Producing
100.12-10-008-29W1.00	Vertical	Producing
100.13-10-008-29W1.00	Vertical	Producing
100.14-10-008-29W1.00	Vertical	Producing
100.15-10-008-29W1.00	Vertical	Producing
100.16-10-008-29W1.00	Vertical	Producing
102.16-10-008-29W1.00	Horizontal	Injection
100.01-11-008-29W1.00	Vertical	Producing
100.02-11-008-29W1.00	Vertical	Producing
100.03-11-008-29W1.00	Vertical	Producing
100.04-11-008-29W1.00	Vertical	Producing
102.04-11-008-29W1.00	Horizontal	Injection
103.04-11-008-29W1.00	Horizontal	Producing
100.05-11-008-29W1.00	Vertical	Producing
102.05-11-008-29W1.00	Horizontal	Injection

UWI	Type	Status
103.05-11-008-29W1.00	Horizontal	Producing
100.06-11-008-29W1.00	Vertical	Producing
100.07-11-008-29W1.00	Vertical	Producing
100.08-11-008-29W1.00	Vertical	Producing
100.09-11-008-29W1.00	Vertical	Producing
100.10-11-008-29W1.00	Vertical	Producing
100.11-11-008-29W1.00	Vertical	Producing
100.12-11-008-29W1.00	Vertical	Producing
100.13-11-008-29W1.00	Vertical	Producing
102.13-11-008-29W1.00	Horizontal	Injection
100.14-11-008-29W1.00	Vertical	Producing
100.15-11-008-29W1.00	Vertical	Producing
100.16-11-008-29W1.00	Vertical	Producing
102.16-11-008-29W1.00	Horizontal	Producing
100.01-12-008-29W1.00	Vertical	Producing
102.01-12-008-29W1.00	Horizontal	Injection
103.01-12-008-29W1.00	Horizontal	Injection
100.02-12-008-29W1.00	Vertical	Producing
100.03-12-008-29W1.00	Vertical	Producing
100.04-12-008-29W1.00	Vertical	Producing
100.05-12-008-29W1.00	Vertical	Producing
100.06-12-008-29W1.00	Vertical	Producing
100.07-12-008-29W1.00	Vertical	Suspended
100.08-12-008-29W1.00	Vertical	Suspended
102.08-12-008-29W1.00	Horizontal	Injection
100.09-12-008-29W1.00	Vertical	Producing
102.09-12-008-29W1.00	Horizontal	Injection
100.10-12-008-29W1.00	Vertical	Producing
100.11-12-008-29W1.00	Vertical	Producing
100.12-12-008-29W1.00	Vertical	Producing
100.13-12-008-29W1.00	Vertical	Producing
100.14-12-008-29W1.00	Vertical	Producing
100.15-12-008-29W1.00	Vertical	Producing
100.16-12-008-29W1.00	Vertical	Producing
102.16-12-008-29W1.00	Horizontal	Producing