

GOODLANDS UNIT NO.1 - WTR FLOOD

Waterflood Progress Report 2020

Prepared for:

Manitoba Industry, Economic Development and Mines

Petroleum Branch

Prepared by:



TUNDRA OIL & GAS

Date: 2021-08-26

Introduction

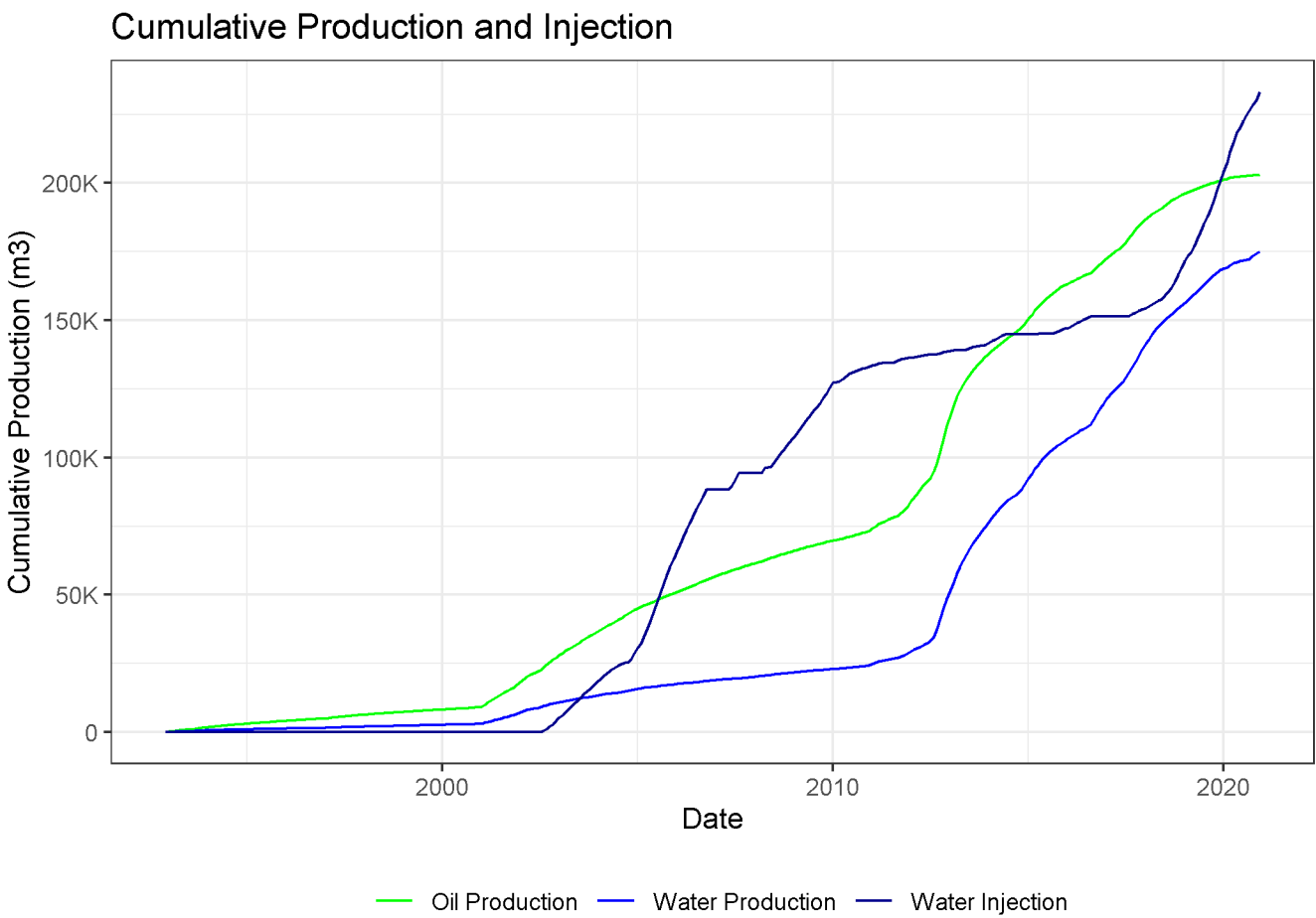
Goodlands Unit No. 1 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 13 effective August 2002. The Unit area contains wells in 15 LSDs in Township 1, Range 24 W1. The Unit contains 35 wells. 12 producers, 9 injectors, and 14 abandoned/suspended/other.

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	10.06	15.61	108.29	1.55	0
FEB 2020	12.63	20.15	118.14	1.60	0
MAR 2020	12.08	23.38	122.06	1.94	0
APR 2020	9.13	24.52	120.33	2.69	0
MAY 2020	2.61	13.84	110.65	5.30	0
JUN 2020	3.28	13.77	56.10	4.20	0
JUL 2020	2.75	5.12	81.10	1.86	0
AUG 2020	2.74	8.58	66.13	3.13	0
SEP 2020	2.57	9.36	62.13	3.64	0
OCT 2020	4.52	33.47	59.71	7.40	0
NOV 2020	6.46	32.15	62.50	4.98	0
DEC 2020	4.67	22.65	94.94	4.85	0
Average	6.12	18.55	88.51		

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

Categories	m3
Oil Production	2,232
Water Production	6,780
Gas Production	0
Water Injection	32,387
Cumulative Oil	203,111
Cumulative Water	175,035
Cumulative Injection	233,142



Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
100.07-10-001-24W1.00	1,800	2,683	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	4,540
100.10-10-001-24W1.00	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
100.12-11-001-24W1.00	6,750	6,750	6,750	6,750	6,750	6,750	6,750	6,750	6,750	6,750	6,750	6,750	6,750
100.13-11-001-24W1.00	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300
100.16-10-001-24W1.00	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100
102.01-15-001-24W1.00	74	393	674	998	1,035	939	531	-98	-98	-98	-92	637	408
102.03-14-001-24W1.00	-88	-88	-91	-91	-92	-93	-95	-96	-94	-91	-90	-88	-91
105.07-10-001-24W1.00	-83	783	1,807	2,768	2,788	2,803	2,860	3,013	3,236	3,381	3,050	3,433	2,487
106.13-11-001-24W1.00	-67	-61	-82	-87	-90	-69	-94	-94	-92	-90	-88	-86	-83

Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
102.01-15-001-24W1.00	1,228	1,149	1,226	1,188	1,168	565	675				203	1,138	8,540
102.03-14-001-24W1.00	840	862	918	891	877	426	762	921	892	914	891	921	10,115
105.07-10-001-24W1.00	1,230	1,359	1,476	1,471	1,325	662	1,022	1,066	911	876	722	823	12,943
106.13-11-001-24W1.00	59	56	164	60	60	30	55	63	61	61	59	61	789
Grand Total	3,357	3,426	3,784	3,610	3,430	1,683	2,514	2,050	1,864	1,851	1,875	2,943	32,387

Voidage

All Volumes are in m3 Oil Formation Volume Factor (Rm3/Sm3) = 1.17								
MONTH	Oil	Water	Injection	Cumulative Oil	Cumulative Water	Cumulative Injection	VRR	Cumulative VRR
JAN 2020	312	484	3,357	201,185	168,729	204,118	3.954	0.505
FEB 2020	366	585	3,426	201,551	169,314	207,544	3.381	0.512
MAR 2020	375	725	3,784	201,926	170,039	211,328	3.252	0.520
APR 2020	274	736	3,610	202,200	170,775	214,938	3.417	0.528
MAY 2020	81	429	3,430	202,281	171,204	218,368	6.549	0.535
JUN 2020	98	413	1,683	202,379	171,617	220,051	3.190	0.539
JUL 2020	85	158	2,514	202,464	171,775	222,565	9.765	0.545
AUG 2020	85	266	2,050	202,549	172,041	224,615	5.610	0.549
SEP 2020	77	281	1,864	202,626	172,322	226,479	5.023	0.553
OCT 2020	140	1,037	1,851	202,766	173,359	228,330	1.541	0.556
NOV 2020	194	964	1,875	202,960	174,323	230,205	1.574	0.559
DEC 2020	145	702	2,943	203,105	175,025	233,148	3.376	0.565

Workovers

UWI	Date	Description
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Well List

UWI	Type	Status
100.07-10-001-24W1.00	Vertical	Injection
102.07-10-001-24W1.00	Horizontal	Producing
103.07-10-001-24W1.00	Horizontal	Suspended
104.07-10-001-24W1.00	Horizontal	Producing
105.07-10-001-24W1.00	Horizontal	Injection
100.08-10-001-24W1.00	Vertical	Producing
1C0.08-10-001-24W1.00	Vertical	Producing
1D0.08-10-001-24W1.00	Dir/Dev	Abandoned Zone
100.09-10-001-24W1.00	Vertical	Abandoned
1W0.09-10-001-24W1.00	Dir/Dev	Abandoned
100.10-10-001-24W1.00	Vertical	Injection
100.15-10-001-24W1.00	Vertical	Producing
100.16-10-001-24W1.00	Vertical	Injection
1B0.16-10-001-24W1.00	Dir/Dev	Abandoned Zone
1C0.16-10-001-24W1.00	Vertical	Producing
100.05-11-001-24W1.00	Vertical	Abandoned Zone
102.05-11-001-24W1.00	Horizontal	Producing
100.11-11-001-24W1.00	Vertical	Abandoned Zone
102.11-11-001-24W1.00	Horizontal	Producing
103.11-11-001-24W1.00	Horizontal	Producing
100.12-11-001-24W1.00	Vertical	Injection
102.12-11-001-24W1.00	Horizontal	Producing
100.13-11-001-24W1.00	Vertical	Injection
105.13-11-001-24W1.00	Horizontal	Producing
106.13-11-001-24W1.00	Horizontal	Injection
1A0.13-11-001-24W1.00	Dir/Dev	Abandoned Zone
1C0.13-11-001-24W1.00	Dir/Dev	Abandoned Zone
1D0.13-11-001-24W1.00	Dir/Dev	Producing
100.14-11-001-24W1.00	Vertical	Abandoned Zone
100.03-14-001-24W1.00	Vertical	Producing
102.03-14-001-24W1.00	Horizontal	Injection
103.03-14-001-24W1.00	Horizontal	Producing
100.04-14-001-24W1.00	Vertical	Abandoned
100.01-15-001-24W1.00	Horizontal	Producing
102.01-15-001-24W1.00	Horizontal	Injection