


EWART UNIT NO. 10  
Waterflood Progress Report 2020

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

Prepared by:  
 **TUNDRA OIL & GAS**

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## Introduction

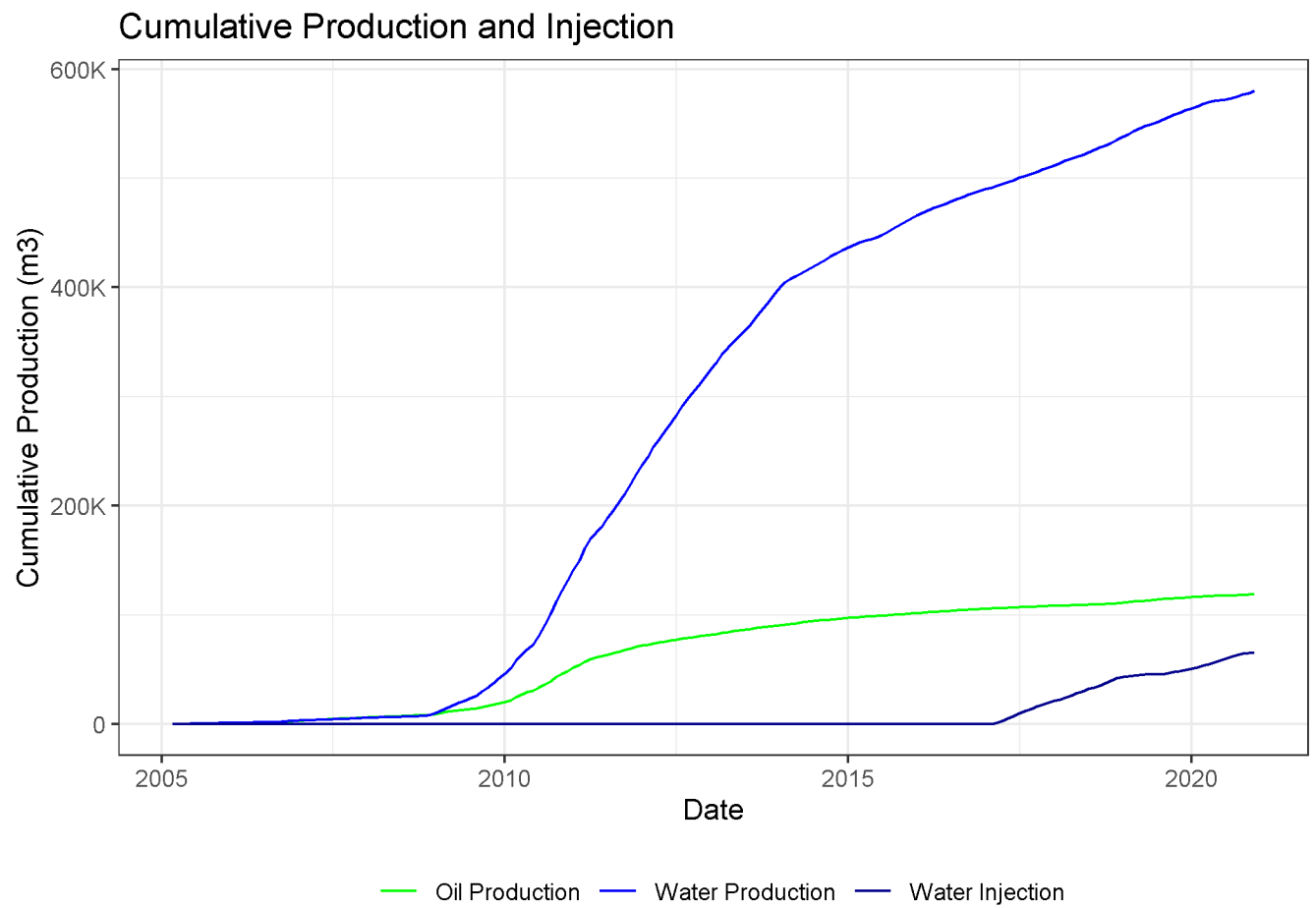
Ewart Unit No. 10 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 56, effective October 1, 2016 with Tundra Oil and Gas (Tundra) as Operator. The EOR project area contains wells in 76 LSDs in Townships 7-8, Range 28W1. The Unit contains 30 wells. 16 producers, 3 injectors, and 11 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	11.14	63.54	36.84	5.70	0
FEB 2020	11.43	62.18	43.38	5.44	0
MAR 2020	9.93	61.84	46.77	6.23	0
APR 2020	8.22	56.04	47.07	6.82	0
MAY 2020	7.13	39.84	52.32	5.59	0
JUN 2020	4.78	19.94	53.23	4.17	0
JUL 2020	6.76	22.47	55.87	3.32	0
AUG 2020	6.35	31.52	56.00	4.96	0
SEP 2020	7.93	59.62	53.43	7.52	0
OCT 2020	8.99	54.51	37.58	6.06	0
NOV 2020	10.36	47.72	21.33	4.61	0
DEC 2020	9.94	63.71	21.52	6.41	0
Average	8.58	48.58	43.78		

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

Categories	m3
Oil Production	3,136
Water Production	17,764
Gas Production	0
Water Injection	16,024
Cumulative Oil	119,091
Cumulative Water	579,910
Cumulative Injection	65,830



## Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
100.01-34-007-28W1.00	2,807	3,196	3,316	3,488	3,489	3,499	4,307	3,480	3,459	3,433	3,511	3,505	3,458
100.05-32-007-28W1.00	1,854	3,392	3,843	4,170	4,170	4,170	4,170	4,170	4,170	4,170	4,170	4,170	3,885
102.04-32-007-28W1.00			-53	-94	-93	-88	978	2,190	2,915	2,976	2,970	2,970	1,467

## Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
100.01-34-007-28W1.00	916	846	904	845	813	726	728	679	664	673	640	667	9,101
100.05-32-007-28W1.00	226	412	417	102									1,157
102.04-32-007-28W1.00			129	465	809	871	1,004	1,057	939	492			5,766
Grand Total	1,142	1,258	1,450	1,412	1,622	1,597	1,732	1,736	1,603	1,165	640	667	16,024

## 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	346	1,970	1,142	116,302	564,125	50,948	0.488	0.074
FEB 2020	331	1,804	1,258	116,633	565,929	52,206	0.583	0.076
MAR 2020	308	1,917	1,450	116,941	567,846	53,656	0.645	0.077
APR 2020	246	1,681	1,412	117,187	569,527	55,068	0.726	0.079
MAY 2020	221	1,235	1,622	117,408	570,762	56,690	1.102	0.081
JUN 2020	143	598	1,597	117,551	571,360	58,287	2.126	0.084
JUL 2020	210	696	1,732	117,761	572,056	60,019	1.881	0.086
AUG 2020	197	977	1,736	117,958	573,033	61,755	1.461	0.088
SEP 2020	238	1,789	1,603	118,196	574,822	63,358	0.784	0.090
OCT 2020	279	1,690	1,165	118,475	576,512	64,523	0.586	0.092
NOV 2020	310	1,432	640	118,785	577,944	65,163	0.363	0.092
DEC 2020	308	1,975	667	119,093	579,919	65,830	0.289	0.093

## Workovers

UWI	Date	Description
100.16-27-007-28W1.00	2020-11-24	Lift Upsize
103.13-07-008-29W1.00	2020-12-19	Rigless Acid Stimulation

## Well List

UWI	Type	Status
100.16-27-007-28W1.00	Horizontal	Producing
100.09-28-007-28W1.00	Horizontal	Producing
102.09-28-007-28W1.00	Horizontal	Producing
100.16-28-007-28W1.00	Horizontal	Suspended
100.02-32-007-28W1.00	Vertical	Abandoned Zone
102.04-32-007-28W1.00	Horizontal	Injection
100.05-32-007-28W1.00	Horizontal	Injection
100.12-32-007-28W1.00	Horizontal	Producing
100.13-32-007-28W1.00	Horizontal	Producing
102.13-32-007-28W1.00	Horizontal	Producing
100.16-32-007-28W1.00	Vertical	Abandoned Zone
100.01-33-007-28W1.00	Horizontal	Producing
100.08-33-007-28W1.00	Vertical	Suspended
102.08-33-007-28W1.00	Horizontal	Producing
100.09-33-007-28W1.00	Horizontal	Producing
100.16-33-007-28W1.00	Vertical	Producing
102.16-33-007-28W1.00	Horizontal	Suspended
100.01-34-007-28W1.00	Horizontal	Injection
100.04-34-007-28W1.00	Vertical	Producing
100.08-34-007-28W1.00	Horizontal	Producing
100.09-34-007-28W1.00	Horizontal	Suspended
100.16-34-007-28W1.00	Horizontal	Suspended
100.03-03-008-28W1.00	Horizontal	Suspended
100.05-03-008-28W1.00	Vertical	Abandoned Zone
100.06-03-008-28W1.00	Horizontal	Suspended
100.01-05-008-28W1.00	Vertical	Abandoned Zone
100.02-05-008-28W1.00	Horizontal	Producing
100.07-05-008-28W1.00	Vertical	Abandoned Zone
102.07-05-008-28W1.00	Horizontal	Producing
103.13-07-008-29W1.00	Horizontal	Producing