



Jody Crawford
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May 25, 2021

Bonnie Bergsma
Sahtu Land and Water Board
P.O. Box 1
Fort Good Hope, NT
X0E 0H0

**Re: Monthly Water Use Report for April 2021
Water Licence S13L1-007, Annex A, Part D, Condition 1
Imperial Oil Resources N.W.T. Limited (Imperial)**

Dear Ms. Bergsma,

Imperial is submitting this report as per Water Licence S13L1-007, Annex A, Part D, Condition 1. Water licence requirements were met for the month of April.

If you require further information please contact Christine Wickens at 587-476-5007 or christine.a.wickens@exxonmobil.com.

Sincerely,

A handwritten signature in blue ink that reads "C Wickens".

Christine Wickens
Environment and Regulatory Advisor
Imperial

cc: D.Penney, CIRNAC, Yellowknife

IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
CPF DAILY VOLUMES
April 2021

Date	VOLUMES (m ³)					TEMP (C)		CHLORINE (mg/L)
	S13L1-007-1 CPF Intake Water	S13L1-007-2 CPF Effluent Water	Fresh Water Injection	Produced Water Injection	Total Water Injection	S13L1-007-1 CPF Intake Water	S13L1-007-2 CPF Effluent Water	S13L1-007-2 CPF Effluent Water
1	5,601	3,770	1,831	6,076	7,907	2.8	8.0	0
2	5,601	3,695	1,906	5,908	7,814	2.7	9.3	0
3	5,601	3,688	1,913	5,777	7,690	2.6	9.5	0
4	5,601	3,822	1,778	6,046	7,824	2.2	9.9	0
5	5,600	3,772	1,828	6,105	7,934	2.7	8.4	0
6	5,601	3,710	1,890	6,093	7,983	2.7	9.0	0
7	5,429	3,432	1,997	6,114	8,111	2.5	8.3	0
8	5,107	3,123	1,984	6,182	8,165	2.8	8.9	0
9	5,530	3,665	1,865	6,238	8,104	2.8	7.0	0
10	5,600	3,868	1,733	6,178	7,911	2.6	7.0	0
11	5,778	4,009	1,769	6,252	8,021	2.5	8.4	0
12	5,768	3,871	1,898	6,128	8,026	2.2	10.1	0
13	5,700	3,929	1,772	6,234	8,006	2.6	11.7	0
14	5,700	3,862	1,839	6,131	7,969	2.1	12.6	0
15	5,700	3,777	1,924	5,991	7,914	2.6	14.6	0
16	5,701	3,768	1,932	5,983	7,915	2.6	15.2	0
17	5,701	3,827	1,873	5,961	7,835	2.3	13.1	0
18	5,700	3,874	1,827	5,999	7,826	2.5	12.5	0.01
19	5,752	3,953	1,798	5,970	7,769	2.1	12.2	0.00
20	5,700	3,978	1,723	5,913	7,636	2.2	10.2	0.00
21	5,700	4,004	1,697	5,854	7,551	2.0	9.3	0.01
22	5,560	3,804	1,756	6,052	7,808	2.2	9.5	0.01
23	5,430	3,639	1,791	6,004	7,795	2.5	10.9	0.01
24	5,401	3,649	1,751	5,948	7,699	2.1	11.5	0
25	5,401	3,648	1,753	5,926	7,679	2.5	11.1	0.00
26	5,401	3,620	1,781	5,969	7,750	2.2	10.6	0.00
27	5,334	3,523	1,810	5,973	7,784	2.4	11.1	0.00
28	5,128	3,395	1,733	5,900	7,633	2.1	11.6	0.01
29	5,487	3,692	1,795	5,891	7,686	2.4	12.4	0.00
30	5,768	3,999	1,768	5,904	7,672	2.4	13.0	0.00
TOTAL	167,080	112,366	54,714	180,701	235,416	0	0	0
AVG	5,569	3,746	1,824	6,023	7,847	2.4	10.6	0.01
HIGH	5,778	4,009	1,997	6,252	8,165			

IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
CPF MONTHLY VOLUMES SUMMARY
April 2021

Water Injection Volumes (m³)

Total fresh water injected	54,714	
Total produced water injected	180,701	
Total Monthly	235,416	Total Injected

CPF Water Volumes (m³)

Total CPF intake water S13L1-007-01	167,080	
Total CPF effluent water S13L1-007-02	112,366	
Highest daily water intake S13L1-007-01	5,778	Max. Allow. 16,000 m3/day.
YTD water intake S13L1-007	618,637	Max. Allow. 3,500,000 m3/yr.

Alternate Water Usage Volumes (m³)

Alternate surface water usage	0
YTD Alternate surface water usage	0

Surface Runoff Water Release Volumes (m³)

Refinery Impound Basin	0
LT 11 Impound Basin	0
Refinery Water flood Basin	0
CPF Impound Basin	0
Misc. Mainland Impound Areas	0
Misc. Bear Island Impound Areas	0
Misc. Goose Island Impound Areas	0
Total - YTD Surface Runoff	0

IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007-1
QUARTERLY CPF WATER INLET DATA
April 2021

SNP S13L1-007-1 (Intake Water)					
Parameter	Q1 2021 (mg/L)	Q2 2021 (mg/L)	Q3 2021 (mg/L)	Q4 2021 (mg/L)	YTD Avg. (mg/L)
pH	7.65	-	-	-	-
Phenols	<0.0015	-	-	-	-
Dissolved Sodium	7.0	-	-	-	-
Total Sodium	7.5	-	-	-	-
Dissolved Potassium	0.78	-	-	-	-
Total Potassium	0.95	-	-	-	-
Dissolved Sulphate	29	-	-	-	-
Dissolved Chloride	10	-	-	-	-
Dissolved Calcium	23	-	-	-	-
Total Calcium	26	-	-	-	-
Dissolved Magnesium	7.6	-	-	-	-
Total Magnesium	9.1	-	-	-	-
Total Alkalinity	75	-	-	-	-
Specific Conductivity	240	-	-	-	-
Total Suspended Solids	3.3	-	-	-	-
Total Dissolved Solids	150	-	-	-	-
Total Petroleum	<2.0	-	-	-	-
Total Phosphorus	<0.1	-	-	-	-
Total Hardness	88	-	-	-	-

IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007-2
QUARTERLY CPF WATER EFFLUENT DATA
April 2021

SNP S13L1-007-2 (Effluent Water)					
Parameter	Q1 2021 (mg/L)	Q2 2021 (mg/L)	Q3 2021 (mg/L)	Q4 2021 (mg/L)	YTD Avg. (mg/L)
pH	7.39	-	-	-	-
Phenols	<0.0015	-	-	-	-
Dissolved Sodium	6.7	-	-	-	-
Total Sodium	7.6	-	-	-	-
Dissolved Potassium	0.78	-	-	-	-
Total Potassium	1.0	-	-	-	-
Dissolved Sulphate	29	-	-	-	-
Dissolved Chloride	10	-	-	-	-
Dissolved Calcium	22	-	-	-	-
Total Calcium	27	-	-	-	-
Dissolved Magnesium	7.3	-	-	-	-
Total Magnesium	9.6	-	-	-	-
Total Alkalinity	76	-	-	-	-
Specific Conductivity	240	-	-	-	-
Total Suspended Solids	9.1	-	-	-	-
Total Dissolved Solids	130	-	-	-	-
Total Petroleum	<2.0	-	-	-	-
Total Phosphorus	<0.10	-	-	-	-
Total Hardness	84	-	-	-	-

IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007-2
QUARTERLY ACUTE LETHALITY
April 2021

SNP S13L1-007-2 (Effluent Water)		
Date	Rainbow Trout (% Survival)	Daphnia Magna (% Survival)
Licence Criteria	> 50% Survival	> 50% Survival
Q1	100%	100%
Q2	100%	100%
Q3		
Q4		

**IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
SURFACE WATER RUNOFF RELEASE REPORT
April 2021**

Discharge Where Contamination Suspected										
	Date	Start/ Middle/ End	Total Discharge Volume (m ³)	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)	Chlorides (mg/L)	pH	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)	Specific Conductivity (uS/cm)
Max Grab Sample Limit				5	0.14	<500	6.0-9.0			
Mainland Areas										

**IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
SURFACE WATER RUNOFF RELEASE REPORT
April 2021**

Discharge Where No Contamination Suspected					
	Date	Total Discharge Volume (m ³)	Chlorides (mg/L)	pH	Sheen Y/N
Sample Limits			< 500	6.0-9.0	N
Mainland					
		0			
Bear Island					
		0			
Goose Island					
		0			