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April 30, 2018

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

**Re: Monthly Water Use Report for March 2018
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. All water licence requirements were met for the month of March.

As per the March 2017 report, the Norman Wells facility remains temporarily shutdown.

If you require further information, please contact Sloan Leavitt at 587-476-4449 or sloan.n.leavitt@esso.ca.

Sincerely,

A handwritten signature in black ink that reads "Sloan Leavitt". The signature is written in a cursive style and is centered within a light grey rectangular box.

Sloan Leavitt
Environment and Regulatory Advisor

cc: T. Morton, INAC, Yellowknife

IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
CPF DAILY VOLUMES
March 2018

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*	0	0	0	0	0	0	0	0
2*	0	0	0	0	0	0	0	0
3*	0	0	0	0	0	0	0	0
4*	0	0	0	0	0	0	0	0
5*	0	0	0	0	0	0	0	0
6*	0	0	0	0	0	0	0	0
7*	0	0	0	0	0	0	0	0
8*	0	0	0	0	0	0	0	0
9*	0	0	0	0	0	0	0	0
10*	0	0	0	0	0	0	0	0
11*	0	0	0	0	0	0	0	0
12*	0	0	0	0	0	0	0	0
13*	0	0	0	0	0	0	0	0
14*	0	0	0	0	0	0	0	0
15*	0	0	0	0	0	0	0	0
16*	0	0	0	0	0	0	0	0
17*	0	0	0	0	0	0	0	0
18*	0	0	0	0	0	0	0	0
19*	0	0	0	0	0	0	0	0
20*	0	0	0	0	0	0	0	0
21*	0	0	0	0	0	0	0	0
22*	0	0	0	0	0	0	0	0
23*	0	0	0	0	0	0	0	0
24*	0	0	0	0	0	0	0	0
25*	0	0	0	0	0	0	0	0
26*	0	0	0	0	0	0	0	0
27*	0	0	0	0	0	0	0	0
28*	0	0	0	0	0	0	0	0
29*	0	0	0	0	0	0	0	0
30*	0	0	0	0	0	0	0	0
31*	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0			
AVG	0	0	0	0	0	0	0	-
HIGH	0	0	0	0	0			

* Norman Wells facility temporarily shutdown as a result of the Enbridge Line 21 outage

IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
CPF MONTHLY VOLUMES SUMMARY
March 2018

Water Injection Volumes (m³)

Total fresh water injected	0	
Total produced water injected	0	
Total Monthly	0	Total Injected

CPF Water Volumes (m³)

Total CPF intake water S13L1-007-01	0	
Total CPF effluent water S13L1-007-02	0	
Highest daily water intake S13L1-007-01	0	Max. Allow. 16,000 m ³ /day.
YTD water intake S13L1-007	0	Max. Allow. 3,500,000 m ³ /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
CPF MONTHLY WATER DATA
March 2018

SNP S13L1-007-1 (Intake Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
Max. Grab Limit			
Feb 26 - Mar 1*	N/A	N/A	N/A
Mar 1 - 5*			
Mar 5 - 8*			
Mar 8 - 12*			
Mar 12 - 15*			
Mar 15 - 19*			
Mar 19 - 22*			
Mar 22 - 26*			

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SNP S13L1-007-2 (Effluent Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
Max. Grab Limit		6.0 - 9.0	
Feb 26 - Mar 1*	N/A	N/A	N/A
Mar 1 - 5*			
Mar 5 - 8*			
Mar 8 - 12*			
Mar 12 - 15*			
Mar 15 - 19*			
Mar 19 - 22*			
Mar 22 - 26*			

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SNP S13L1-007-1 (Intake Water)		
Dates	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)
Max. Grab Limit		
Feb 26 - Mar 5*	N/A	N/A
Mar 5 - 12*		
Mar 12 - 19*		
Mar 19 - 26*		

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SNP S13L1-007-2 (Effluent Water)				
Dates	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)	Daily Chlorine (mg/L)	Temp (C)
Max. Grab Limit	5	0.14		
Feb 26 - Mar 5*	N/A	N/A	N/A	N/A
Mar 5 - 12*				
Mar 12 - 19*				
Mar 19 - 26*				

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IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
CPF MONTHLY WATER DATA
March 2018

SNP S13L1-007-2 (Effluent Water) - FOUR WEEK AVERAGE CONCENTRATION							
Parameter	Total Petroleum Hydrocarbons (mg/L)	Phenol (mg/L)	Suspend Solids (mg/L)	pH	Specific Conduct. (uS/cm)	Daily Chlorine (mg/L)	Temp (C)
Max. Average Limit	5.00	0.14		6.0 - 9.0			
Feb 5 - Mar 5*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feb 12 - Mar 12*							
Feb 19 - Mar 19*							
Feb 26 - Mar 26*							

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IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007-1
QUARTERLY CPF WATER INLET DATA
March 2018

SNP S13L1-007-1 (Intake Water)					
Parameter	January 2018 (mg/L)	April 2018 (mg/L)	July 2018 (mg/L)	March 2018 (mg/L)	YTD Avg. (mg/L)
pH	N/A				
Phenols					
Dissolved Sodium					
Total Sodium					
Dissolved Potassium					
Total Potassium					
Dissolved Sulphate					
Dissolved Chloride					
Dissolved Calcium					
Total Calcium					
Dissolved Magnesium					
Total Magnesium					
Total Alkalinity					
Specific Conductivity					
Total Suspended Solids					
Total Dissolved Solids					
Total Petroleum					
Total Phosphorus					
Total Hardness					

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IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007-2
QUARTERLY CPF WATER EFFLUENT DATA
March 2018

SNP S13L1-007-2 (Effluent Water)					
Parameter	January 2018 (mg/L)	April 2018 (mg/L)	July 2018 (mg/L)	March 2018 (mg/L)	YTD Avg. (mg/L)
pH	N/A				
Phenols					
Dissolved Sodium					
Total Sodium					
Dissolved Potassium					
Total Potassium					
Dissolved Sulphate					
Dissolved Chloride					
Dissolved Calcium					
Total Calcium					
Dissolved Magnesium					
Total Magnesium					
Total Alkalinity					
Specific Conductivity					
Total Suspended Solids					
Total Dissolved Solids					
Total Petroleum					
Total Phosphorus					
Total Hardness					

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IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007-2
QUARTERLY ACUTE LETHALITY
March 2018

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

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**IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
SURFACE WATER RUNOFF RELEASE REPORT
March 2018**

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	Suspend Solids (mg/L)	Total Dissolved Solids (mg/L)	Specific Conduct. (uS/cm)
Max Grab Sample Limit				5	0.14	<500	6.0-9.0			
Mainland Areas										
			0							
Misc. Mainland Impound Areas										
			0							

**IMPERIAL - NORMAN WELLS OPERATIONS
WATER LICENCE S13L1-007
SURFACE WATER RUNOFF RELEASE REPORT
March 2018**

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			