

## **OIL ANALYSIS REPORT**



Area SAB2 **SAB2 G20** Component **Thrust Bearing** 

Fluid PETRO CANADA TURBOFLO XL46 (5000 LTR)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

### Wear

Component wear rates appear to be normal (unconfirmed).

### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

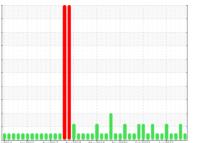
#### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



Particle Filter (Magn: 200 x)

Report Id: ONTQUE [WCAMIS] 02625277 (Generated: 04/01/2024 09:10:06) Rev: 1



Sample Rating Trend



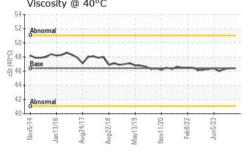
SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0890858	WC0801597	WC0858090
Sample Date		Client Info		27 Mar 2024	07 Jan 2024	25 Oct 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info	0		0	0
Oil Changed		Client Info	N/A		N/A	N/A
Sample Status			NORMAL MA		MARGINAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>85	1	1	1
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	0	<1	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>40	0	<1	0
Lead	ppm	ASTM D5185(m)	>60	0	<1	<1
Copper	ppm	ASTM D5185(m)	>7	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>40	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current 0	history1 0	history2 <1
	ppm ppm		limit/base			
Boron		ASTM D5185(m)	limit/base	0	0	<1
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	0 0	0	<1 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0	0 0 0	<1 <1 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 0	0 0 0 0	<1 <1 0 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	0 0 0 <1	0 0 0 0 0	<1 <1 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		0 0 0 <1 0	0 0 0 0 0 <1	<1 <1 0 0 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		0 0 0 <1 0 <1	0 0 0 0 <1 0	<1 <1 0 0 0 <1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		0 0 0 <1 0 <1 2	0 0 0 0 <1 0 1	<1 <1 0 0 0 <1 1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		0 0 0 <1 0 <1 2 630	0 0 0 0 0 <1 0 1 663	<1 <1 0 0 0 <1 1 1 647
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0	0 0 0 <1 0 <1 2 630 <1	0 0 0 0 0 <1 0 1 663 <1	<1 <1 0 0 0 <1 1 1 647 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 limit/base	0 0 0 <1 0 <1 2 630 <1	0 0 0 0 <1 0 1 663 <1 history1	<1 <1 0 0 0 <1 1 1 647 <1 <b>history2</b>
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 limit/base	0 0 0 <1 0 <1 2 630 <1 current 2	0 0 0 0 0 <1 0 1 663 <1 663 <1 history1 3	<1 <1 0 0 0 <1 1 1 647 <1 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 limit/base >20	0 0 0 <1 0 <1 2 630 <1 2 630 <1 2 0	0 0 0 0 <1 0 1 663 <1 history1 3 0	<1 <1 0 0 0 <1 1 1 647 <1 history2 2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 limit/base >20 >20	0 0 0 <1 0 <1 2 630 <1 2 0 2 0 <1	0 0 0 0 <1 0 1 663 <1 history1 3 0 <1	<1 <1 0 0 0 <1 1 1 647 <1 history2 2 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 limit/base >20 >20 limit/base >20	0 0 0 <1 0 <1 2 630 <1 current 2 0 <1 current	0 0 0 0 ( 1 663 <1 <b>history1</b> 3 0 <1 <b>history1</b>	<1 <1 0 0 0 <1 1 1 647 <1    bistory2   2   1   0   0   0   0   0   0   0   1   1   0   bistory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 limit/base >20 >20 limit/base >10000	0 0 0 (0 <1 2 630 <1 2 630 <1 2 0 <1 2 0 <1 2 0 0 <1 2 0 0 <1 2	0 0 0 0 0 1 663 <1 <b>history1</b> 3 0 <1 <b>history1</b> 805	<1 <1 0 0 0 <1 1 1 647 <1    bistory2   2   <1   0   bistory2   2   <1   0   bistory2   545
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 limit/base >20 >20 limit/base >10000 >1300 >160	0 0 0 (0 <1 2 630 <1 2 630 <1 2 0 <1 2 0 <1 2 0 506 109	0 0 0 0 ( 0 ( 1 663 ( 1 663 ( 1 ) 663 ( 1 ) 663 ( 1 ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	<1 <1 0 0 0 <1 1 1 1 647 <1 history2 2 <1 0 history2 545 93
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647	0 limit/base >20 >20 limit/base >10000 >1300 >160	0 0 0 (0 <1 2 630 <1 2 630 <1 2 0 <1 2 0 <1 2 0 506 109 11	0 0 0 0 0 1 663 <1 history1 3 0 <1 history1 805 143 8	<1    <1   0   0   0   <1   1   647   <1   history2   2   <1   0   history2   545   93   5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	0 1 20 20 20 20 20 20 20 20 20 20 20 20 20	0 0 0 (0 <1 2 630 <1 2 630 <1 2 0 <1 2 0 <1 506 109 11 4	0 0 0 0 0 1 663 <1 history1 3 0 <1 history1 805 143 8 4	<1 <ul> <li>&lt;1</li> <li>0</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>1</li> <li>647</li> <li>&lt;1</li> </ul> history2 2 <ul> <li>&lt;1</li> <li>0</li> <li>bistory2</li> <li>&gt;545</li> <li>93</li> <li>5</li> <li>2</li> </ul>

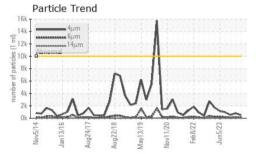
Submitted By: ?



# **OIL ANALYSIS REPORT**

Par 1,520 т	ticle (	Count						-26	
2,880 Severe								-24	
0,720 Abnon 7,680 -	mai							-22 ISO 440	
1,920-		-						4406:1999 Cleanliness Code	
480	-	200						-16 Ce	
120-								14 anline	
30 8			-					-12 %	
2-					-			-10 8	
0. 4µ							71		
	6µ		14µ	21,	l	38µ	1	μ	
0.20 T	d Nun	nber							
0.15				1					
	~	71	4	A					
0.15 0.10 0.05 - Base		V	1	1			٨		1
0.05		11	U	1	$\sim$	~	-1	1	
0.05 - Base									
0.00									
Nov5/14	Jan13/16	Aug24/17	2/18	May13/19	Nov11/20	Feb8/22	Jun5/23		
Nov	Jan1	Augž	Aug22/18 -	May1	Nov1	Feb	Jun		
		@ 40	00						



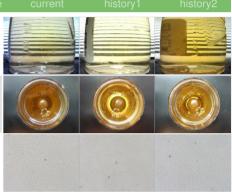


FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.04	0.05	0.05	0.08
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	🔺 VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46.39	46.4	46.4	46.3
SAMPLE IMAGES		method	limit/base	current	history1	history2

Color

Bottom

PrtFilter



: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Ontario Power Generation** Laboratory CALA NIAGARA PLANT GROUP,, 14000 NIAGARA PKWY Sample No. : WC0890858 Received : 28 Mar 2024 Lab Number : 02625277 Tested : 01 Apr 2024 NIAGARA ON THE LAKE, ON ISO 17025:2017 Accredited Laboratory Unique Number : 5750396 Diagnosed : 01 Apr 2024 - Kevin Marson CA LOS 1J0 Test Package : IND 2 (Additional Tests: BottomAnalysis, FilterPatch, PrtFilter, TAN Man) Contact: Michael Brochu To discuss this sample report, contact Customer Service at 1-800-268-2131. mike.brochu@opg.com T: (905)357-0322 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied. F: (905)374-5466