

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend

### NORMAL

#### Area SAB2 Machine Id SAB2 G17 Governor Component

#### Hydraulic System Fluid ESSO TERESSO ISO 46 (6160 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.



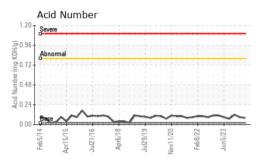


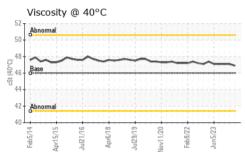
## 2014 An/2015 Jul/2016 An/2018 Jul/2019 Nov/2020 Feb/2022 Jul/2023

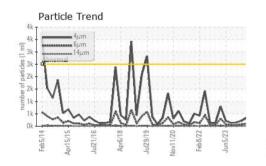
SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0890845	WC0801584	WC0858077
Sample Date		Client Info		27 Mar 2024	07 Jan 2024	25 Oct 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	<1	<1	<1
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	0	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	0	<1	0
Lead	ppm	ASTM D5185(m)	>20	0	<1	<1
Copper	ppm	ASTM D5185(m)	>20	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>20	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			history2
ADDITIVES		method	iiiiii/base	current	history1	Thistory2
Boron	ppm	ASTM D5185(m)	0	0	0	<1
Boron Barium	ppm ppm			0 0	0	<1 <1
Boron		ASTM D5185(m)		0 0 0	0 0 0	<1
Boron Barium Molybdenum Manganese	ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0	0 0 0 0	0 0 0 0	<1 <1 0 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0	0 0 0 0 0	0 0 0 0 0	<1 <1 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	<1 <1 0 0 0 <1
Boron Barium Molybdenum Manganese Magnesium	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 0 2.4	0 0 0 0 0 0 2	0 0 0 0 0 0 2	<1 <1 0 0 0 <1 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 0 2.4	0 0 0 0 0 2 1	0 0 0 0 0 0 2 <1	<1 <1 0 0 0 <1 3 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 2.4	0 0 0 0 0 0 2 1 1124	0 0 0 0 0 2 <1 1205	<1 <1 0 0 0 <1 3 <1 1132
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)	0 0 0 0 2.4 0	0 0 0 0 0 2 1	0 0 0 0 0 0 2 <1	<1 <1 0 0 0 <1 3 <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 0 0 0 2.4 0	0 0 0 0 0 2 1 1124 <1	0 0 0 0 0 2 <1 1205 <1 history1	<1 <1 0 0 <1 3 <1 1132 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm 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) <b>method</b> ASTM D5185(m)	0 0 0 0 2.4 0	0 0 0 0 0 2 1 1124 <1 current 0	0 0 0 0 0 2 <1 1205 <1 history1 0	<1 <1 0 0 <1 3 <1 1132 <1 history2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	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 0 0 2.4 0 limit/base	0 0 0 0 0 2 1 1124 <1	0 0 0 0 0 2 <1 1205 <1 history1 0 0	<1 <1 0 0 <1 3 <1 1132 <1 history2
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) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	0 0 0 2.4 0 limit/base >15 >20	0 0 0 0 0 2 1 1124 <1 current 0	0 0 0 0 0 2 <1 1205 <1 history1 0	<1 <1 0 0 <1 3 <1 1132 <1 history2 <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 0 0 2.4 0 imit/base >15 >20 imit/base	0 0 0 0 2 1 1124 <1 current 0 0 <1 current	0 0 0 0 0 2 <1 1205 <1 history1 0 0 <1 history1	<1 <1 0 0 0 <1 3 <1 1132 <1 history2 <1 0 0 0 history2
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 0 0 2.4 0 2.4 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 2 1 1124 <1 <b>current</b> 0 0 <1 <b>current</b> 347	0 0 0 0 0 2 <1 1205 <1 <b>history1</b> 0 0 <1 <b>history1</b> 218	<1 <1 0 0 0 <1 3 <1 1132 <1 history2 <1 0 0 0 history2 148
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 0 0 2.4 0 2.4 0 3 1 1 1 5 20 1 1 1 1 1 2 2 0 1 1 1 1 1 2 2 0 1 1 1 1	0 0 0 0 2 1 1124 <1 <b>current</b> 0 0 <1 <b>current</b> 347 99	0 0 0 0 0 2 <1 1205 <1 <b>history1</b> 0 0 0 <1 <b>history1</b> 218 74	<1 <1 0 0 0 <1 3 <1 1132 <1 history2 <1 0 0 0 history2 148 43
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 ASTM D7647	0 0 0 2.4 0 2.4 0 3 3 1 1 1 5 2 0 1 1 1 1 1 2 2 0 1 1 1 1 1 2 2 0 1 1 1 1	0 0 0 0 2 1 1124 <1 0 0 0 <1 0 0 <1 0 0 4 1 0 0 347 99 9 9	0 0 0 0 0 2 <1 1205 <1 1205 <1 <b>history1</b> 0 0 0 <1 <b>history1</b> 218 74 10	<1 <1 0 0 0 1 3 <1 1132 <1 history2 <1 0 0 0 history2 148 43 6
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 ASTM D7647	0 0 0 2.4 0 2.4 0 3 3 1 1 1 5 2 0 1 1 1 1 1 2 2 0 1 1 1 1 1 2 2 0 1 1 1 1	0 0 0 0 2 1 1124 <1 0 0 0 <1 0 0 <1 0 0 347 99 9 9 2	0 0 0 0 0 2 <1 1205 <1 1205 <1 <b>history1</b> 0 0 <1 <b>history1</b> 218 74 10 4	<1 <1 0 0 0 <1 3 <1 1132 <1 1132 <1 1132 <1 1132 <1 1132 <1 10 0 0 1148 43 6 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 2.4 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 2 1 1124 <1 0 0 0 <1 0 0 <1 0 0 <1 347 99 9 9 9 2 0	0 0 0 0 2 <1 1205 <1 history1 0 0 <1 <i>history1</i> 218 74 10 4 1	<1 <1 0 0 0 <1 3 <1 1132 <1 1132 <1 1132 <1 1132 <1 1132 <1 10 0 0 1 148 43 6 1 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 2.4 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 2 1 1124 <1 0 0 0 <1 0 0 <1 0 0 347 99 9 9 2	0 0 0 0 0 2 <1 1205 <1 <b>history1</b> 0 0 <1 <b>history1</b> 218 74 10 4 1 1 0	<1 <1 0 0 0 1 3 <1 1132 <1 1132 <1 1132 <1 1132 <1 1132 <1 1 1132 <1 1 1132 <1 1 1132 <1 1 1 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0</th
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 2.4 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 2 1 1124 <1 0 0 0 <1 0 0 <1 0 0 <1 347 99 9 9 9 2 0	0 0 0 0 2 <1 1205 <1 history1 0 0 <1 <i>history1</i> 218 74 10 4 1	<1 <1 0 0 0 <1 3 <1 1132 <1 1132 <1 1132 <1 1132 <1 1132 <1 10 0 0 1 148 43 6 1 0 0



Particle Trend 41 21 1k 0 eb5/1







# **OIL ANALYSIS REPORT**

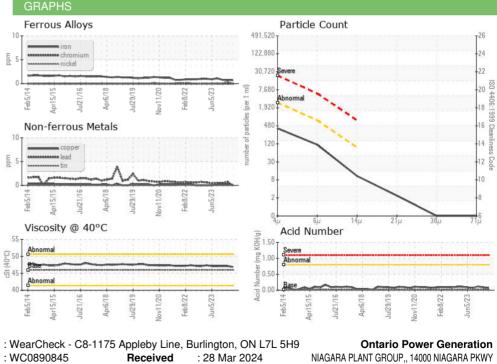
FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	0.08	0.09	0.12
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	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*	>0.05	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPER	ΓIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	46.9	47.1	47.1
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						12

Color

Bottom

bpm





:01 Apr 2024

: 01 Apr 2024 - Kevin Marson

Tested

Diagnosed

NIAGARA PLANT GROUP,, 14000 NIAGARA PKWY NIAGARA ON THE LAKE, ON CA LOS 1J0 Contact: Alex Courtemanche alex.courtemanche@opg.com T: (905)357-0322 F: (905)357-6558



Report Id: ONTQUE [WCAMIS] 02625211 (Generated: 04/01/2024 09:22:57) Rev: 1

CALA

ISO 17025:2017 Accredited Laboratory

Laboratory

Sample No.

Lab Number : 02625211

Unique Number : 5750330

Test Package : IND 2 (Additional Tests: TAN Man)

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.

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Submitted By: ?