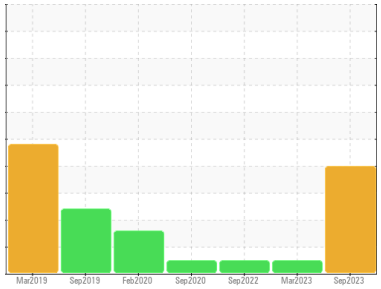
OIL ANALYSIS REPORT

Sample Rating Trend



COOL CHEMICALS

Machine Id
PRIMARY AIR FAN F2 - outboard bearing (S/N 1-31100-F2)
Component
Outboard Bearing
Fluid
ESSO NUTO H ISO 46 (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

Copper ppm levels are abnormal. Lead ppm levels are marginal. Bearing wear is indicated.

Contamination

Elemental levels of potassium (K) and sodium (Na) indicate potash, or flyash contamination. The water content is negligible. Abnormal element levels due to process contamination.

Fluid Condition

Viscosity of sample indicates oil is within ISO 68 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0851405**	WC0794192	WC0736558
Sample Date		Client Info		**10 Sep 2023**	08 Mar 2023	07 Sep 2022
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				**ABNORMAL**	NORMAL	NORMAL

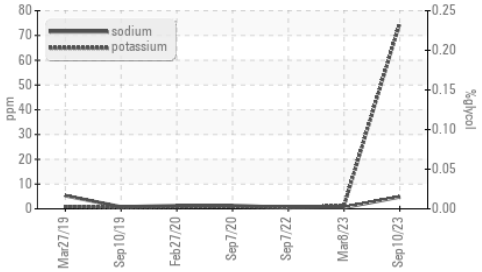
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**<1**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	0	0
Lead	ppm	ASTM D5185(m)	>20	▲ **15**	2	<1
Copper	ppm	ASTM D5185(m)	>20	▲ **37**	<1	<1
Tin	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)	5	**3**	1	<1
Calcium	ppm	ASTM D5185(m)	50	**58**	53	54
Phosphorus	ppm	ASTM D5185(m)	330	**347**	345	366
Zinc	ppm	ASTM D5185(m)	410	**399**	393	407
Sulfur	ppm	ASTM D5185(m)	2700	**1892**	2307	2452
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

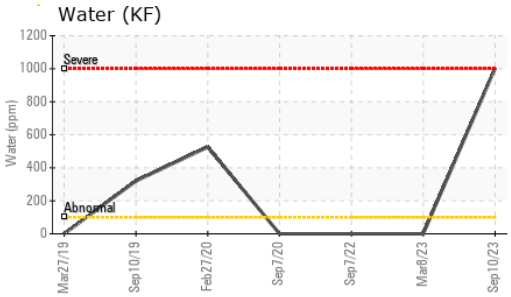
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**3**	2	2
Sodium	ppm	ASTM D5185(m)		**5**	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	▲ **75**	1	<1
Water	%	ASTM D6304*	>2	**0.100**	---	---
ppm Water	ppm	ASTM D6304*		**1002**	---	---

OIL ANALYSIS REPORT

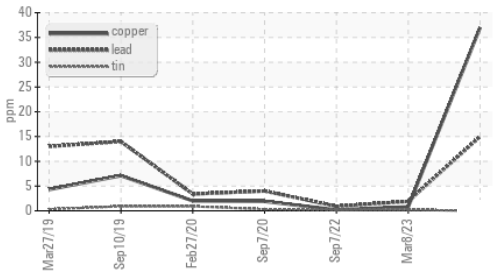
Glycol Contamination



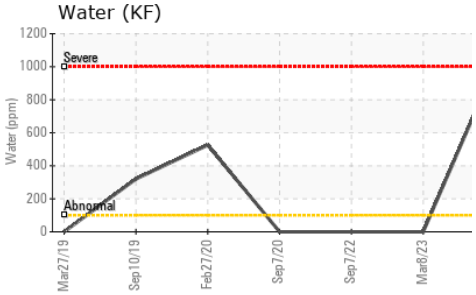
Water (KF)



Non-ferrous Metals

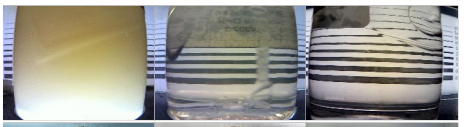


Water (KF)



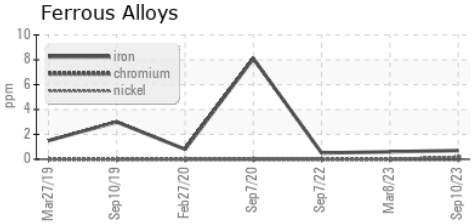
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ **HAZY**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>2	**.2%**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	▲ **58.4**	48.6	48.7

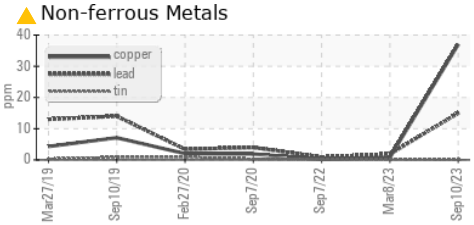
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

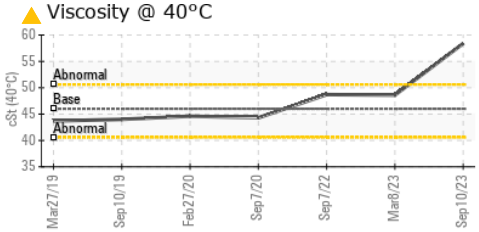
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0851405 **Recieved** : 19 Dec 2023
Lab Number : 02604156 **Diagnosed** : 20 Dec 2023
Unique Number : 5697241 **Diagnostician** : Kevin Marson
Test Package : IND 1 (Additional Tests: KF)

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

Ontario Power Generation
ATIKOKAN T.G.S., BOX 1900
ATIKOKAN, ON
CA P0T 1C0
Contact: Dale Anthony
dale.anthony@opg.com
T:
F: (807)597-1198