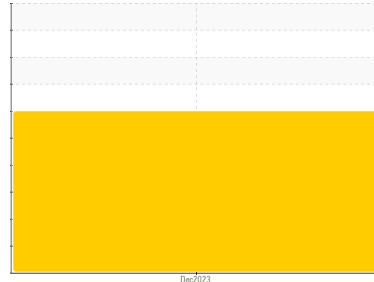




PROBLEM SUMMARY

Sample Rating Trend



WEAR



Area
CHAUDIERE GS5
 Machine Id
GS5-G4-DS-TGB (2)
 Component
Roller Bearing
 Fluid
RENEWABLE LUBRICANTS BIO EP ISO 100 (28 LTR)

COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status	SEVERE	---	---
Iron ppm ASTM D5185(m) >20	▲ 129	---	---

Customer Id: ENE271OTT
 Sample No.: WC0815853
 Lab Number: 02607840
 Test Package: IND 3



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

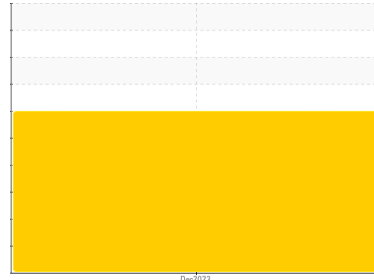
Sample Rating Trend

WEAR

Area
CHAUDIERE GS5
Machine Id
GS5-G4-DS-TGB (2)

Component
Roller Bearing

Fluid
RENEWABLE LUBRICANTS BIO EP ISO 100 (28 LTR)



DIAGNOSIS

▲ Recommendation

The oil change at the time of sampling has been noted. 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

Iron ppm levels are severe. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. The ferrography results are normal indicating no abnormal wear in the system.

Contaminants

There is no indication of any contamination in the oil.

Oil Condition

The AN level is acceptable for this fluid. 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		WC0815853	---	---
Sample Date	Client Info		18 Dec 2023	---	---
Machine Age	Client Info		0	---	---
Oil Age	Client Info		0	---	---
Oil Changed	Client Info		Changed	---	---
Sample Status			SEVERE	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>2	NEG	---	---

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		65	---	---
Iron	ppm ASTM D5185(m)	>20	▲ 129	---	---
Chromium	ppm ASTM D5185(m)	>20	<1	---	---
Nickel	ppm ASTM D5185(m)	>20	<1	---	---
Titanium	ppm ASTM D5185(m)		0	---	---
Silver	ppm ASTM D5185(m)		0	---	---
Aluminum	ppm ASTM D5185(m)	>20	<1	---	---
Lead	ppm ASTM D5185(m)	>20	0	---	---
Copper	ppm ASTM D5185(m)	>20	<1	---	---
Tin	ppm ASTM D5185(m)	>20	0	---	---
Antimony	ppm ASTM D5185(m)		0	---	---
Vanadium	ppm ASTM D5185(m)		0	---	---
Beryllium	ppm ASTM D5185(m)		0	---	---
Cadmium	ppm ASTM D5185(m)		0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)		5	---	---
Barium	ppm ASTM D5185(m)		0	---	---
Molybdenum	ppm ASTM D5185(m)		0	---	---
Manganese	ppm ASTM D5185(m)		<1	---	---
Magnesium	ppm ASTM D5185(m)		<1	---	---
Calcium	ppm ASTM D5185(m)		1	---	---
Phosphorus	ppm ASTM D5185(m)		98	---	---
Zinc	ppm ASTM D5185(m)		11	---	---
Sulfur	ppm ASTM D5185(m)		5469	---	---
Lithium	ppm ASTM D5185(m)		<1	---	---

CONTAMINANTS

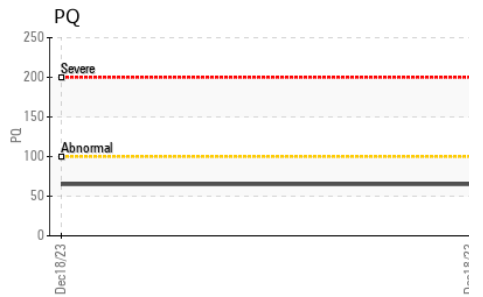
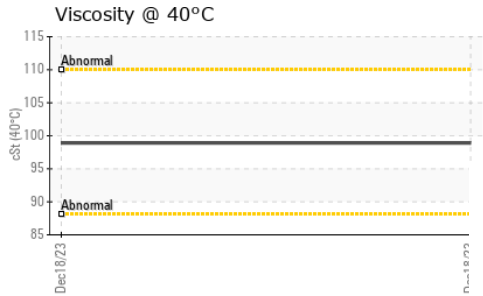
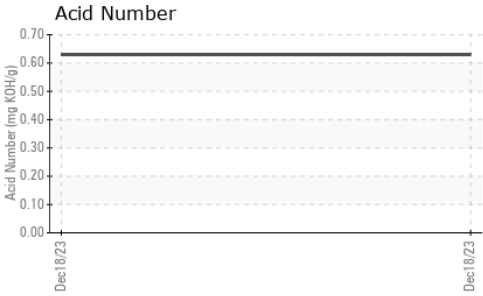
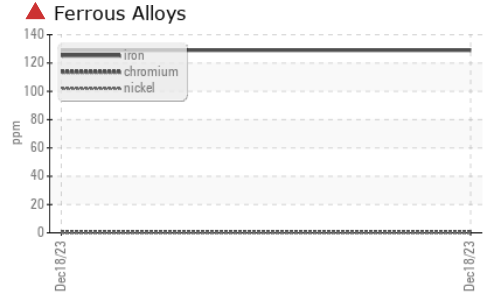
	method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m)	>15	1	---	---
Sodium	ppm ASTM D5185(m)		1	---	---
Potassium	ppm ASTM D5185(m)	>20	1	---	---

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*		0.63	---	---



OIL ANALYSIS REPORT



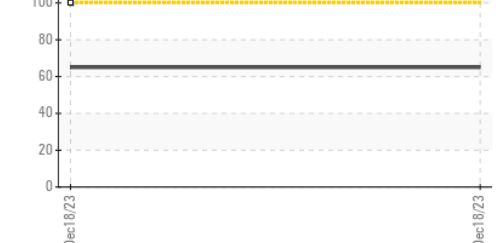
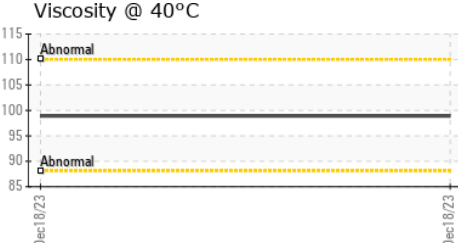
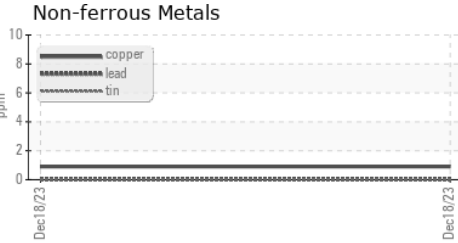
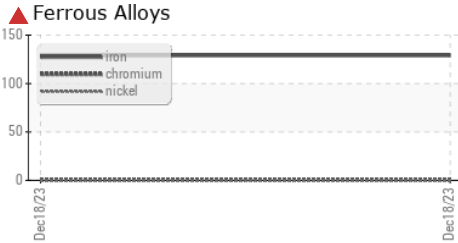
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	98.9	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color		no image	no image
Bottom		no image	no image

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0815853 **Received** : 10 Jan 2024
Lab Number : 02607840 **Tested** : 15 Jan 2024
Unique Number : 5708926 **Diagnosed** : 16 Jan 2024 - Kevin Marson
Test Package : IND 3

Portage Power - Energy Ottawa
 4 Booth Street
 Ottawa, ON
 CA K1R 6K8
 Contact: Cheryl Gharib
 info@portagepower.com

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.

T:
F: x

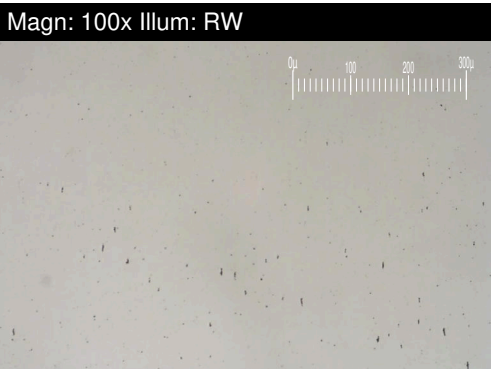
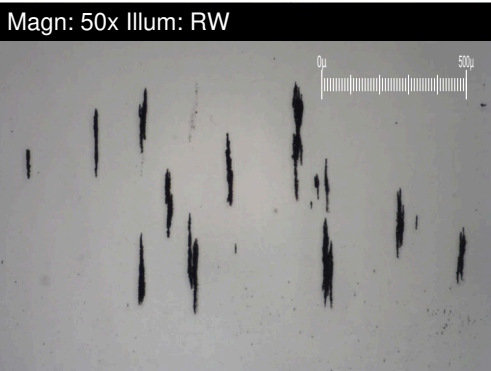
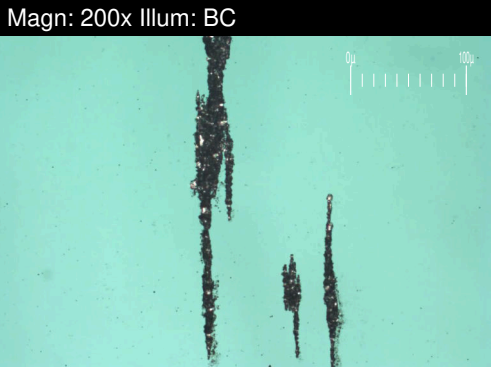


FERROGRAPHY REPORT

Area
CHAUDIERE GS5
 Machine Id
GS5-G4-DS-TGB (2)

Component
Roller Bearing

Fluid
RENEWABLE LUBRICANTS BIO EP ISO 100 (28 LTR)

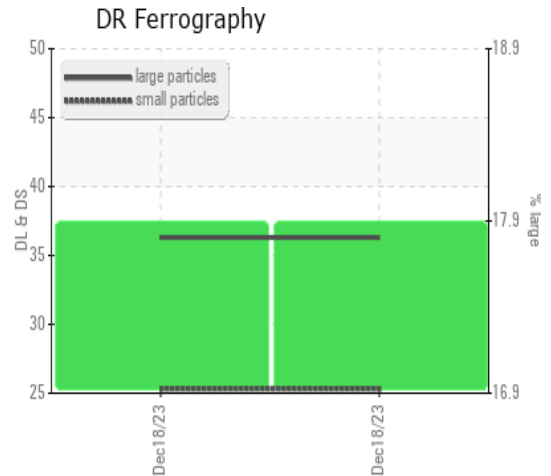


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		36.3	---	---
Small Particles		DR-Ferr*		25.3	---	---
Total Particles		DR-Ferr*	>---	61.6	---	---
Large Particles Percentage	%	DR-Ferr*		17.9	---	---
Severity Index		DR-Ferr*		399	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		3		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		1		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1		

WEAR

Iron ppm levels are severe. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. The ferrography results are normal indicating no abnormal wear in the system.



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