



OIL ANALYSIS REPORT

Sample Rating Trend

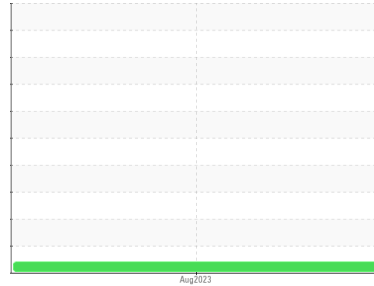
VISCOSITY



Machine Id
10568405

Component
Gearbox

Fluid
GEAR OIL ISO 220 (--- GAL)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

Viscosity of sample indicates oil is within ISO 320 range, advise investigate. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC0304899	---	---
Sample Date	Client Info	15 Aug 2023	---	---
Machine Age	hrs Client Info	0	---	---
Oil Age	hrs Client Info	0	---	---
Oil Changed	Client Info	N/A	---	---
Sample Status		ABNORMAL	---	---

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185(m)	>200	106	---	---
Chromium ppm ASTM D5185(m)	>10	2	---	---
Nickel ppm ASTM D5185(m)	>10	<1	---	---
Titanium ppm ASTM D5185(m)		0	---	---
Silver ppm ASTM D5185(m)		0	---	---
Aluminum ppm ASTM D5185(m)	>25	<1	---	---
Lead ppm ASTM D5185(m)	>50	0	---	---
Copper ppm ASTM D5185(m)	>200	<1	---	---
Tin ppm ASTM D5185(m)	>10	0	---	---
Antimony ppm ASTM D5185(m)	>5	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)	50	2	---	---
Barium ppm ASTM D5185(m)	15	<1	---	---
Molybdenum ppm ASTM D5185(m)	15	0	---	---
Manganese ppm ASTM D5185(m)		1	---	---
Magnesium ppm ASTM D5185(m)	50	<1	---	---
Calcium ppm ASTM D5185(m)	50	42	---	---
Phosphorus ppm ASTM D5185(m)	350	467	---	---
Zinc ppm ASTM D5185(m)	100	3	---	---
Sulfur ppm ASTM D5185(m)	12500	8924	---	---
Lithium ppm ASTM D5185(m)		<1	---	---

CONTAMINANTS

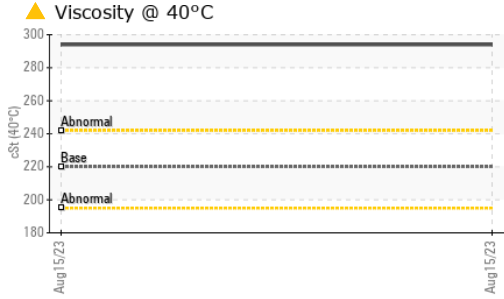
method	limit/base	current	history1	history2
Silicon ppm ASTM D5185(m)	>50	1	---	---
Sodium ppm ASTM D5185(m)		<1	---	---
Potassium ppm ASTM D5185(m)	>20	<1	---	---

VISUAL

method	limit/base	current	history1	history2
White Metal scalar Visual*	NONE	VLITE	---	---
Yellow Metal scalar Visual*	NONE	NONE	---	---
Precipitate scalar Visual*	NONE	NONE	---	---
Silt scalar Visual*	NONE	NONE	---	---
Debris scalar Visual*	NONE	VLITE	---	---
Sand/Dirt scalar Visual*	NONE	NONE	---	---
Appearance scalar Visual*	NORML	NORML	---	---
Odor scalar Visual*	NORML	NORML	---	---
Emulsified Water scalar Visual*	>0.2	NEG	---	---
Free Water scalar Visual*		NEG	---	---



OIL ANALYSIS REPORT

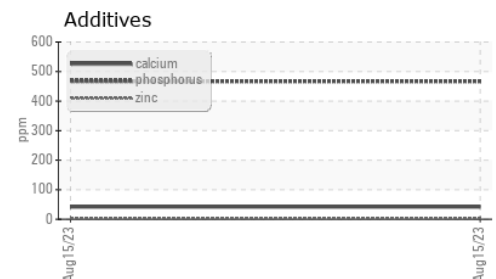
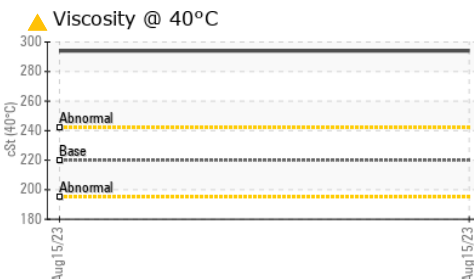
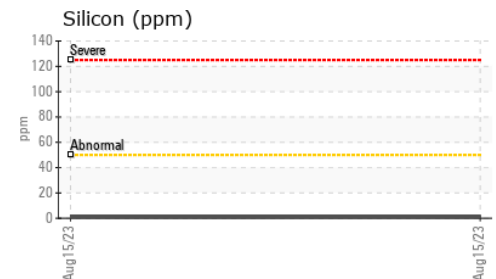
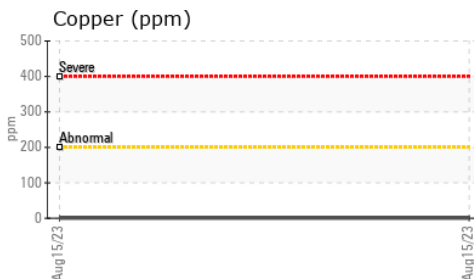
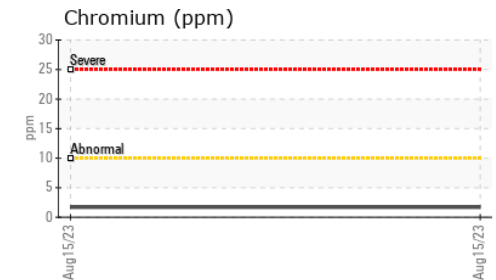
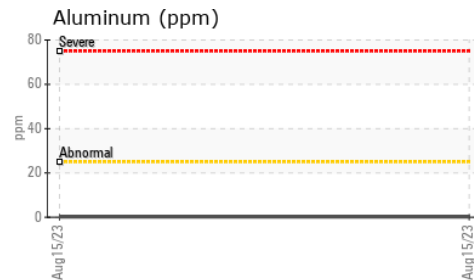
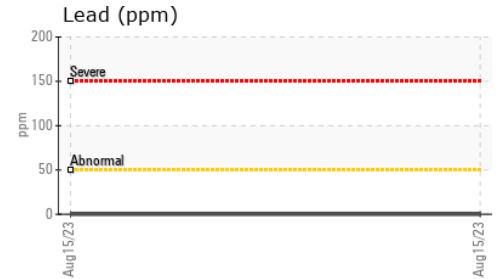
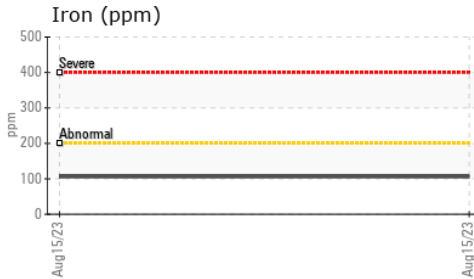


FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	220	▲ 294	---	---

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. : WC0304899 **Received** : 24 Aug 2023
Lab Number : 02578179 **Diagnosed** : 24 Aug 2023
Unique Number : 5631239 **Diagnostician** : Kevin Marson
Test Package : MOB 1

Vale - Copper Cliff Smelter
 COPPER CLIFF SMELTER WAREHOUSE, 155 BALSAM ST.
 COPPER CLIFF, ON
 CA P0M 1N0
 Contact: Jacynthe Gelinat
 jacynthe.gelinat@vale.com
 T: (705)682-5980
 F: (705)682-6535

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.