OIL ANALYSIS REPORT

Sample Rating Trend

SOOT

Machine Id
NO UNIT CU0019433
Component
Diesel Engine
Fluid
SHELL ROTELLA T4 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. 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. We recommend an early resample to monitor this condition. Please note that the oil was too thick to perform some of the normal laboratory tests.

Wear
All component wear rates are normal.

▲ Contamination
There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition
The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**CU0019433**	---	---
Sample Date		Client Info		**01 Jun 2024**	---	---
Machine Age	hrs	Client Info		**0**	---	---
Oil Age	hrs	Client Info		**410**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**SEVERE**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	---	---
Water		WC Method	>0.2	**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>200	**20**	---	---
Chromium	ppm	ASTM D5185(m)	>20	**0**	---	---
Nickel	ppm	ASTM D5185(m)	>2	**<1**	---	---
Titanium	ppm	ASTM D5185(m)	>2	**0**	---	---
Silver	ppm	ASTM D5185(m)	>2	**0**	---	---
Aluminum	ppm	ASTM D5185(m)	>30	**0**	---	---
Lead	ppm	ASTM D5185(m)	>30	**0**	---	---
Copper	ppm	ASTM D5185(m)	>30	**<1**	---	---
Tin	ppm	ASTM D5185(m)	>15	**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)		**40**	---	---
Barium	ppm	ASTM D5185(m)		**0**	---	---
Molybdenum	ppm	ASTM D5185(m)		**<1**	---	---
Manganese	ppm	ASTM D5185(m)		**0**	---	---
Magnesium	ppm	ASTM D5185(m)		**70**	---	---
Calcium	ppm	ASTM D5185(m)		**1720**	---	---
Phosphorus	ppm	ASTM D5185(m)		**760**	---	---
Zinc	ppm	ASTM D5185(m)		**910**	---	---
Sulfur	ppm	ASTM D5185(m)		**2370**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

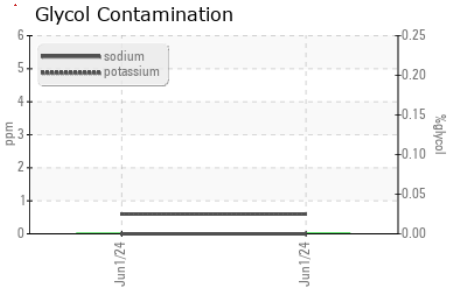
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>30	**0**	---	---
Sodium	ppm	ASTM D5185(m)		**0**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**<1**	---	---
Glycol	%	ASTM D7922*		**0.0**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	▲ **13.9**	---	---
Nitration	Abs/cm	ASTM D7624*	>20	**31**	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**137**	---	---

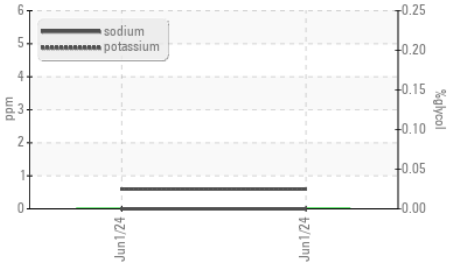
OIL ANALYSIS REPORT

FT-IR (Direct Trend)

Glycol Contamination



Glycol Contamination

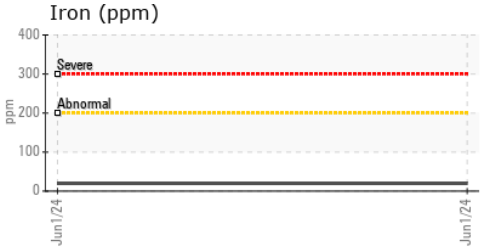


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**30**	---	---

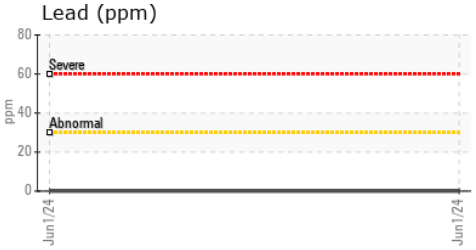
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**NONE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar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

GRAPHS

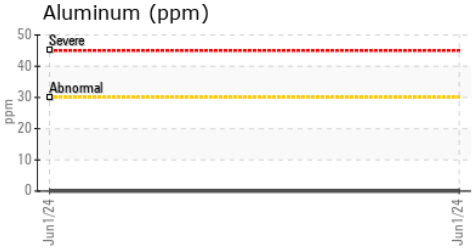
Iron (ppm)



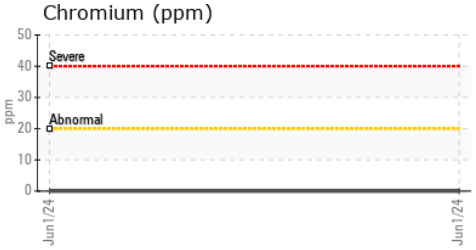
Lead (ppm)



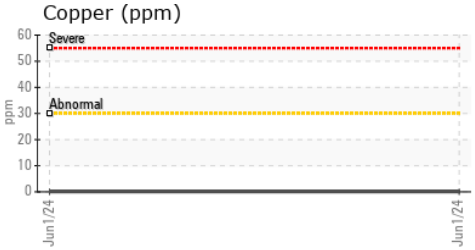
Aluminum (ppm)



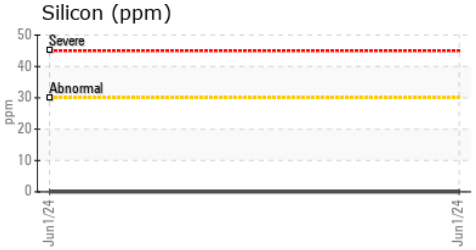
Chromium (ppm)



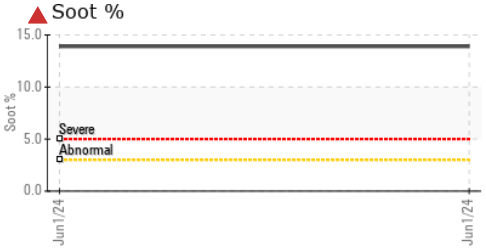
Copper (ppm)



Silicon (ppm)



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : CU0019433 **Received** : 27 Jun 2024
Lab Number : 02644296 **Tested** : 28 Jun 2024
Unique Number : 5801835 **Diagnosed** : 28 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: GLYCOL, KV40, Visual)

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.

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