



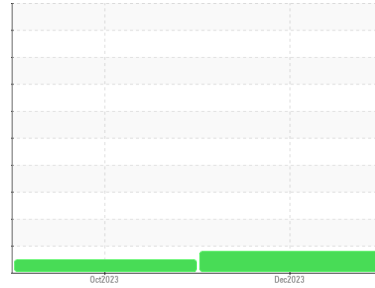
OIL ANALYSIS REPORT

Sample Rating Trend

WEAR



Machine Id
CATERPILLAR R1600H SCP222
 Component
Diesel Engine
 Fluid
SHELL 15W40 (--- GAL)



DIAGNOSIS

▲ Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

▲ Wear

Copper ppm levels are abnormal. Bearing wear is indicated. Component wear metal level(s) high for break in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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		WC0883808	WC0750477	---
Sample Date	Client Info		07 Dec 2023	11 Oct 2023	---
Machine Age	hrs	Client Info	0	260	---
Oil Age	hrs	Client Info	250	260	---
Oil Changed	Client Info		Changed	Changed	---
Sample Status			ABNORMAL	NORMAL	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	---
Water	WC Method	>0.2	NEG	NEG	---

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	24	25	---
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	---
Nickel	ppm	ASTM D5185(m)	>2	0	0	---
Titanium	ppm	ASTM D5185(m)	>2	0	0	---
Silver	ppm	ASTM D5185(m)	>2	<1	<1	---
Aluminum	ppm	ASTM D5185(m)	>25	2	2	---
Lead	ppm	ASTM D5185(m)	>40	28	25	---
Copper	ppm	ASTM D5185(m)	>330	▲ 742	617	---
Tin	ppm	ASTM D5185(m)	>15	11	10	---
Antimony	ppm	ASTM D5185(m)		0	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
Beryllium	ppm	ASTM D5185(m)		0	0	---
Cadmium	ppm	ASTM D5185(m)		0	0	---

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)		38	48	---
Barium	ppm	ASTM D5185(m)		<1	2	---
Molybdenum	ppm	ASTM D5185(m)		39	40	---
Manganese	ppm	ASTM D5185(m)		<1	<1	---
Magnesium	ppm	ASTM D5185(m)		492	466	---
Calcium	ppm	ASTM D5185(m)		1659	1662	---
Phosphorus	ppm	ASTM D5185(m)		744	859	---
Zinc	ppm	ASTM D5185(m)		880	1021	---
Sulfur	ppm	ASTM D5185(m)		1928	2369	---
Lithium	ppm	ASTM D5185(m)		<1	<1	---

CONTAMINANTS

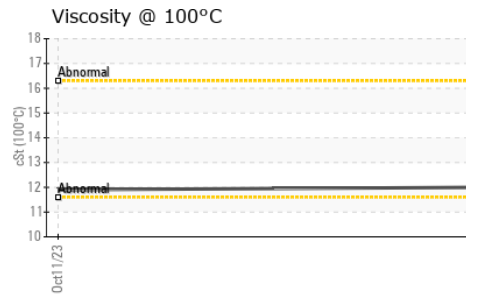
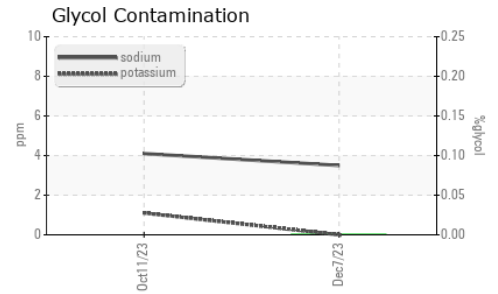
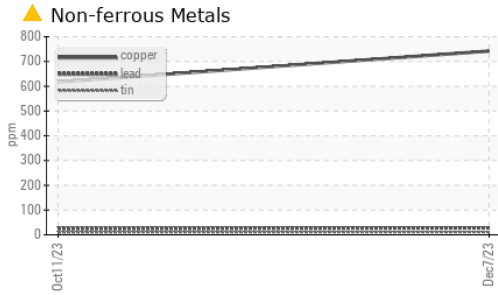
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	21	76	---
Sodium	ppm	ASTM D5185(m)	>150	4	4	---
Potassium	ppm	ASTM D5185(m)	>20	0	1	---
Glycol	%	ASTM D7922*		0.0	NEG	---

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.4	0.2	---
Nitration	Abs/cm	ASTM D7624*	>20	9.3	8.2	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	25.4	25.3	---



OIL ANALYSIS REPORT

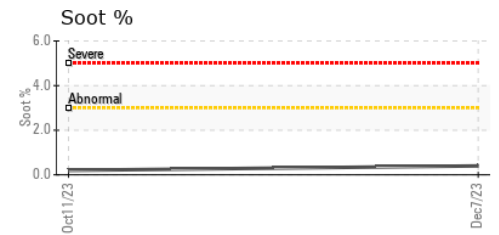
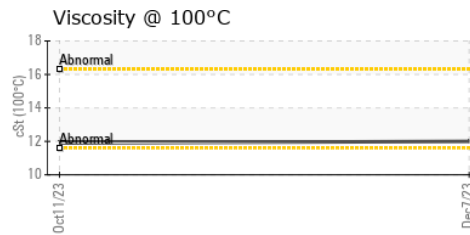
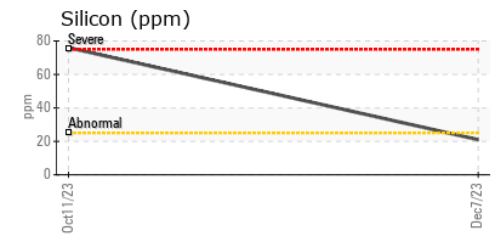
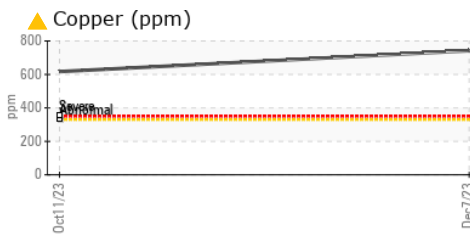
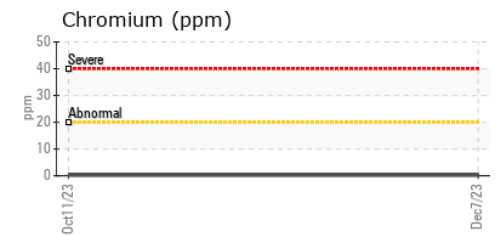
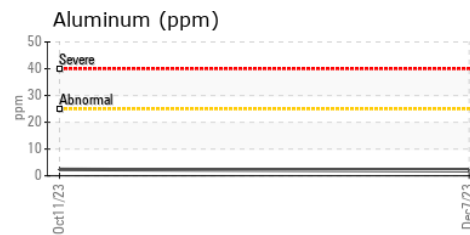
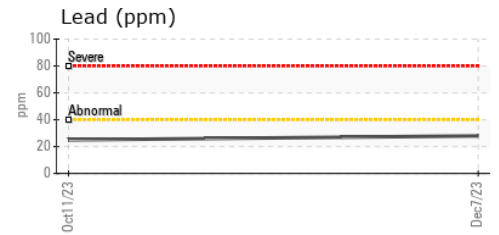
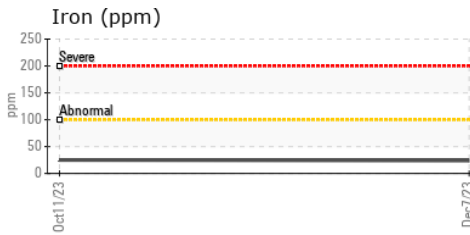


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	25.3	24.5	---

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	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	---
Free Water	scalar	Visual*		NEG	NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.0	11.9	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0883808 **Received** : 15 Dec 2023
Lab Number : 02603411 **Diagnosed** : 18 Dec 2023
Unique Number : 5696496 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: Glycol, Visual)

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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.