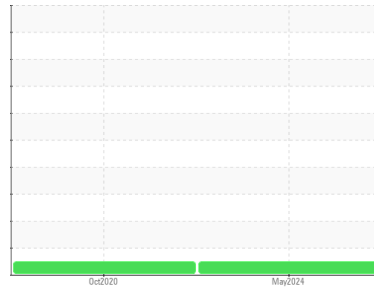


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR 190-150
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PCA0114641	PCA0027455	---
Sample Date	Client Info			28 May 2024	20 Oct 2020	---
Machine Age	hrs	Client Info		10392	10058	---
Oil Age	hrs	Client Info		500	650	---
Oil Changed	Client Info			Changed	Changed	---
Sample Status				NORMAL	NORMAL	---

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>86	42	41	---
Chromium	ppm	ASTM D5185m	>3	<1	<1	---
Nickel	ppm	ASTM D5185m	>3	0	<1	---
Titanium	ppm	ASTM D5185m	>2	<1	1	---
Silver	ppm	ASTM D5185m	>2	0	<1	---
Aluminum	ppm	ASTM D5185m	>15	2	0	---
Lead	ppm	ASTM D5185m	>16	<1	1	---
Copper	ppm	ASTM D5185m	>250	32	68	---
Tin	ppm	ASTM D5185m	>2	<1	<1	---
Antimony	ppm	ASTM D5185m		---	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

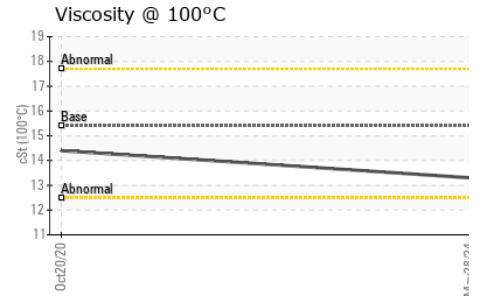
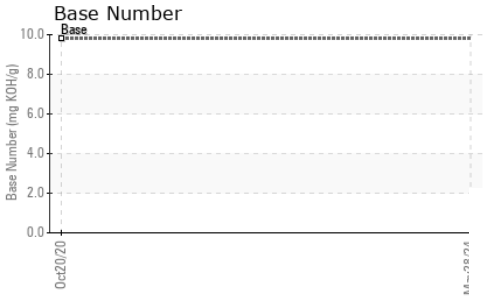
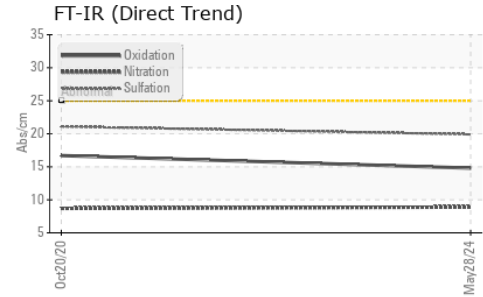
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	13	45	---
Barium	ppm	ASTM D5185m	0	<1	0	---
Molybdenum	ppm	ASTM D5185m	60	45	18	---
Manganese	ppm	ASTM D5185m	0	<1	<1	---
Magnesium	ppm	ASTM D5185m	1010	719	244	---
Calcium	ppm	ASTM D5185m	1070	1214	1936	---
Phosphorus	ppm	ASTM D5185m	1150	992	939	---
Zinc	ppm	ASTM D5185m	1270	1153	1155	---
Sulfur	ppm	ASTM D5185m	2060	3339	3040	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>35	4	3	---
Sodium	ppm	ASTM D5185m		4	4	---
Potassium	ppm	ASTM D5185m	>20	2	2	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	1	0.9	---
Nitration	Abs/cm	*ASTM D7624	>20	8.9	8.7	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.9	21.1	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.8	16.7	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.9	---	---

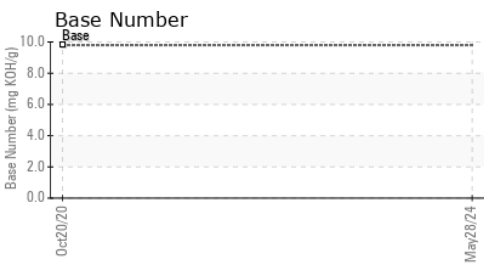
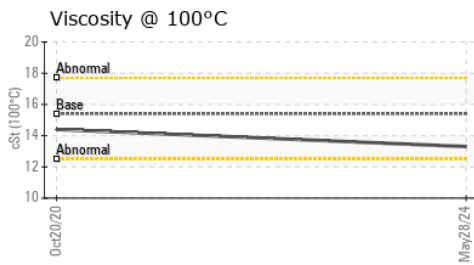
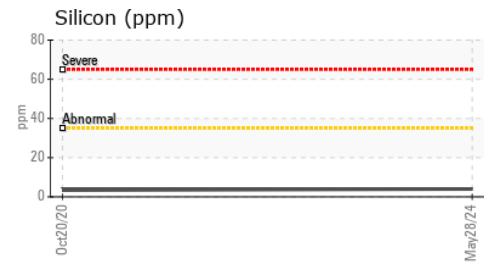
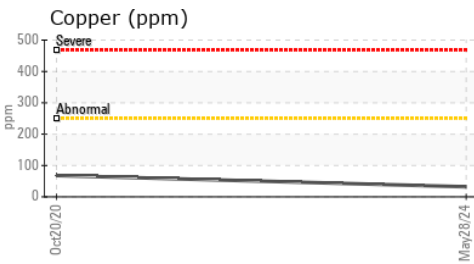
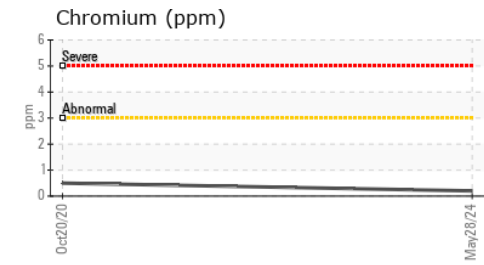
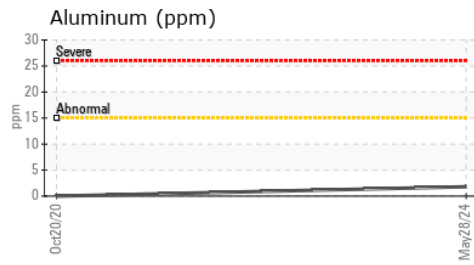
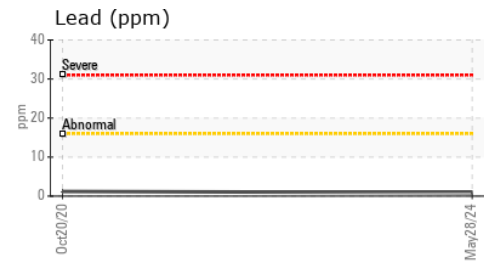
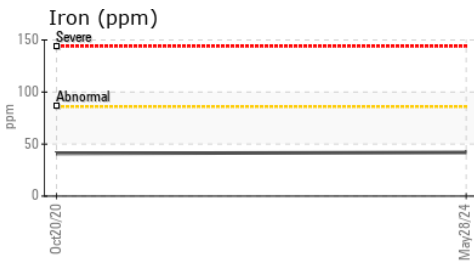
OIL ANALYSIS REPORT



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	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	14.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0114641 **Received** : 06 Jun 2024
Lab Number : **06201167** **Tested** : 07 Jun 2024
Unique Number : 11063290 **Diagnosed** : 07 Jun 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

GE MARSHALL EXCAVATION
 1351 JOLIET RD
 VALPARAISO, IN
 US 46385
 Contact: MARK STEFFEL
 mark.steffel@gemarshall.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)