



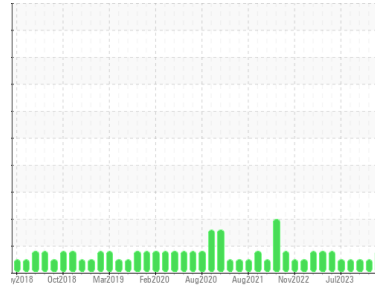
OIL ANALYSIS REPORT

Sample Rating Trend

WEAR



Machine Id
CATERPILLAR D10T 15105048 (S/N CATOD10TCRJG01478)
 Component
Diesel Engine
 Fluid
ROYAL PURPLE MOTOR OIL 15W40 (--- GAL)



DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

▲ Wear

Cylinder, crank, or cam shaft wear is indicated. All other 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		RP0036203	RP0036193	RP0033482
Sample Date	Client Info		19 Dec 2023	08 Nov 2023	05 Oct 2023
Machine Age	hrs	Client Info	70375	70115	69785
Oil Age	hrs	Client Info	1766	1506	1176
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	▲ 108	95	81
Chromium	ppm	ASTM D5185m >20	2	2	2
Nickel	ppm	ASTM D5185m >2	2	1	1
Titanium	ppm	ASTM D5185m >2	<1	<1	<1
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >25	3	1	6
Lead	ppm	ASTM D5185m >40	3	3	2
Copper	ppm	ASTM D5185m >330	14	14	13
Tin	ppm	ASTM D5185m >15	<1	<1	<1
Vanadium	ppm	ASTM D5185m	<1	<1	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	2	3	0
Barium	ppm	ASTM D5185m 0	0	0	2
Molybdenum	ppm	ASTM D5185m 100	98	107	101
Manganese	ppm	ASTM D5185m	1	<1	<1
Magnesium	ppm	ASTM D5185m 60	18	9	12
Calcium	ppm	ASTM D5185m 3050	2666	2600	2230
Phosphorus	ppm	ASTM D5185m 1050	977	887	820
Zinc	ppm	ASTM D5185m 1200	1153	1095	1024

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	5	4	4
Sodium	ppm	ASTM D5185m	3	3	<1
Potassium	ppm	ASTM D5185m >20	<1	0	2
Water	%	ASTM D6304 >0.2	NEG	NEG	NEG

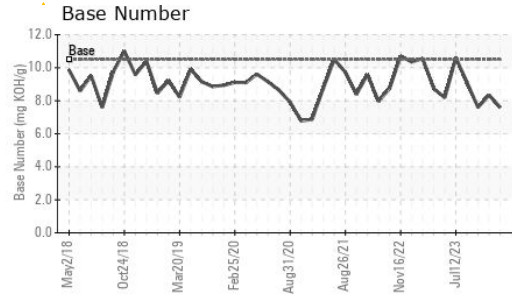
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	1.1	1	1
Nitration	Abs/cm	*ASTM D7624 >20	8.6	8.8	8.8
Sulfation	Abs/.1mm	*ASTM D7415 >30	26.9	26.0	24.1

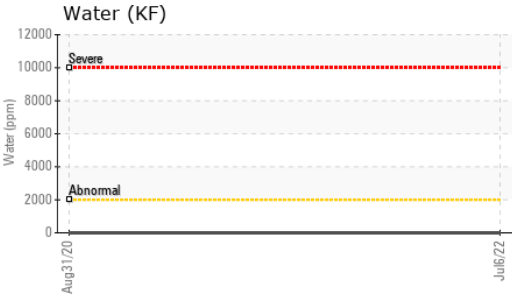
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.7	16.2	14.8
Base Number (BN)	mg KOH/g	ASTM D2896 10.5	7.59	8.34	7.60

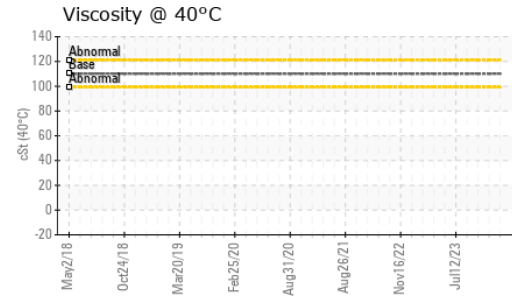
OIL ANALYSIS REPORT



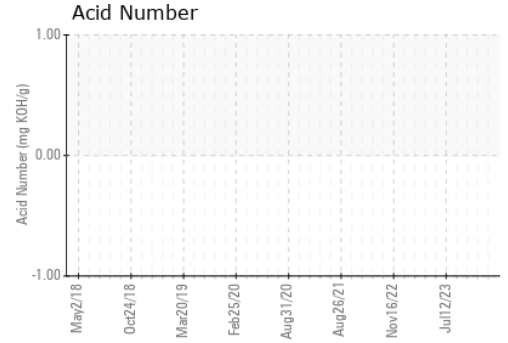
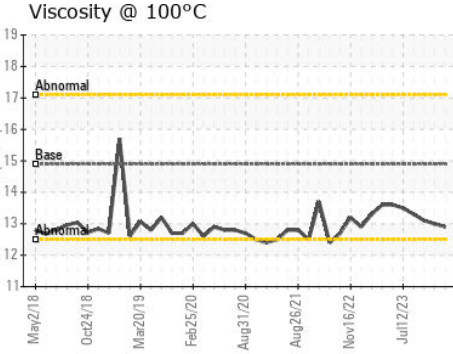
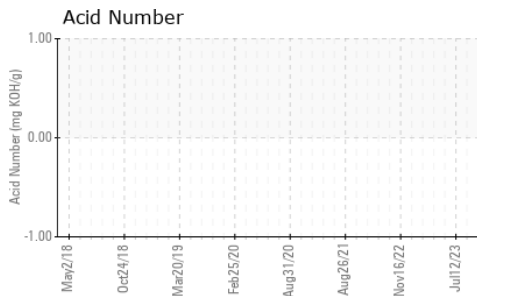
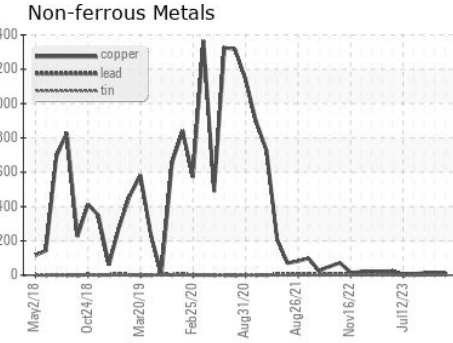
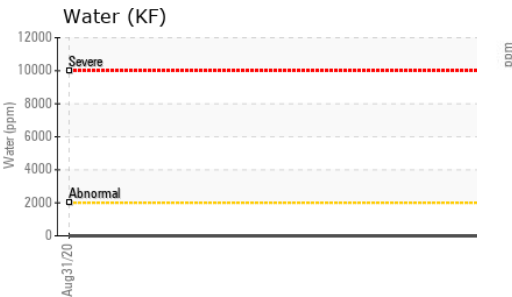
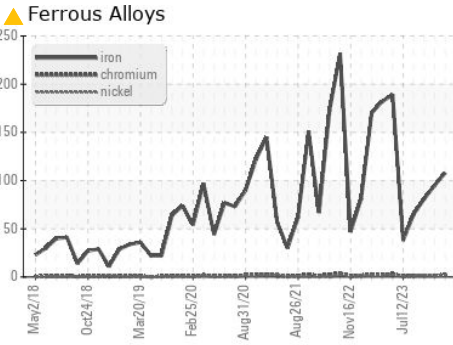
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	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 D445	14.9	12.9	13.0



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0036203 **Received** : 09 Jan 2024
Lab Number : 06055532 **Diagnosed** : 10 Jan 2024
Unique Number : 10821481 **Diagnostician** : Don Baldrige
Test Package : IND 2 (Additional Tests: FT-IR, KV100, TBN)

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Certificate L2367
 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)