

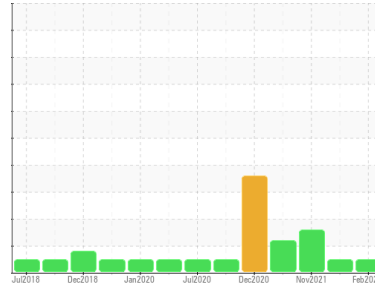


OIL ANALYSIS REPORT



Area
GUAY SON [CONHER]
 Machine Id
CATERPILLAR ESTRELLA DE LOS MARES - IBACO
 Component
Diesel Engine
 Fluid
XTRA REV 15W40 (160 LTR)

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	history 1	history 2
Sample Number	Client Info		KL0009077	KL0009007	KL0007627
Sample Date	Client Info		12 Feb 2022	25 Nov 2021	11 Nov 2021
Machine Age	hrs	Client Info	11463	10440	9968
Oil Age	hrs	Client Info	466	1149	677
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			NORMAL	NORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history 1	history 2
Fuel	WC Method	>5	<1.0	<1.0	<1.0

WEAR METALS

	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m >100	26	29	29
Chromium	ppm	ASTM D5185m >20	1	1	1
Nickel	ppm	ASTM D5185m >2	0	0	<1
Titanium	ppm	ASTM D5185m >2	<1	<1	<1
Silver	ppm	ASTM D5185m >2	0	<1	0
Aluminum	ppm	ASTM D5185m >25	3	2	4
Lead	ppm	ASTM D5185m >40	4	18	22
Copper	ppm	ASTM D5185m >330	11	29	29
Tin	ppm	ASTM D5185m >15	<1	3	0
Antimony	ppm	ASTM D5185m	0	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	67	252	282
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	22	110	116
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	126	490	614
Calcium	ppm	ASTM D5185m	3008	1756	1763
Phosphorus	ppm	ASTM D5185m	901	915	861
Zinc	ppm	ASTM D5185m	1023	1071	1093
Sulfur	ppm	ASTM D5185m	3851	2373	4109

CONTAMINANTS

	method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m >25	16	24	▲ 31
Sodium	ppm	ASTM D5185m	71	3	4
Potassium	ppm	ASTM D5185m >20	3	<1	0
Glycol	%	*ASTM D2982	NEG	NEG	NEG

INFRA-RED

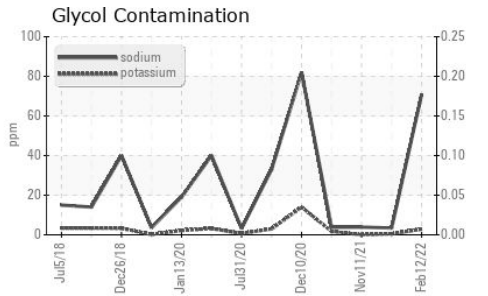
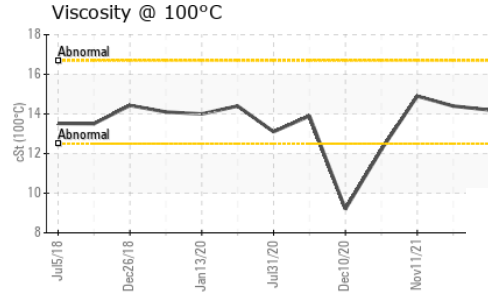
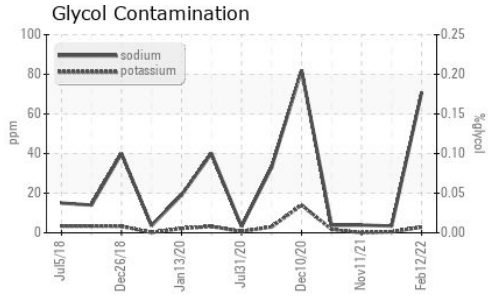
	method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844 >3	0.3	0.6	0.4
Nitration	Abs/cm	*ASTM D7624 >20	6.1	7.7	7.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.2	23	22.8

FLUID DEGRADATION

	method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414 >25	10.3	16.7	16.5
Base Number (BN)	mg KOH/g	ASTM D2896	11.4	9.1	8.4



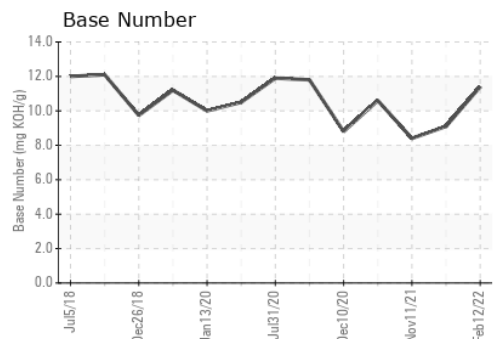
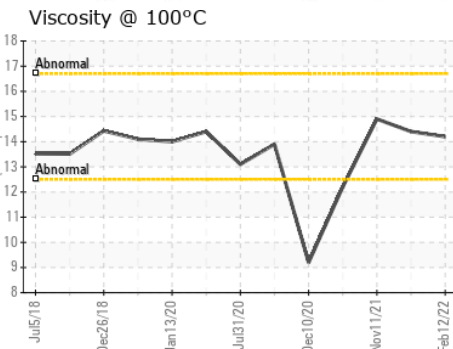
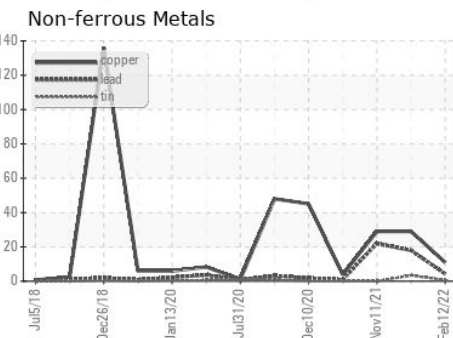
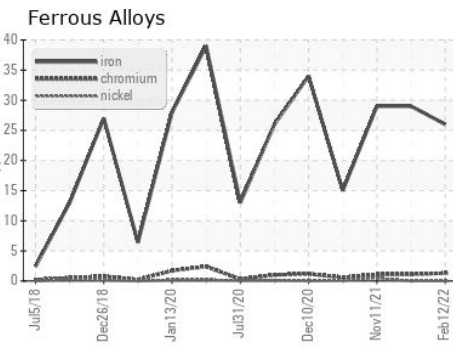
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
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	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	14.2	14.4	14.9

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0009077 **Received** : 25 Feb 2022
Lab Number : 05477675 **Diagnosed** : 28 Feb 2022
Unique Number : 9866889 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: GLYCOL)

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)

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