MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	MARGINAL

Area
GUAY SON [CONHER]
Machine Id
CATERPILLAR NAUTICO 5
Component
Auxilary Power Unit Auxiliary Engine
Fluid
RALOY 15W40 (8 LTR)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Fluid: Raloy 15W40)

WEAR

All component wear rates are normal.

CONTAMINATION

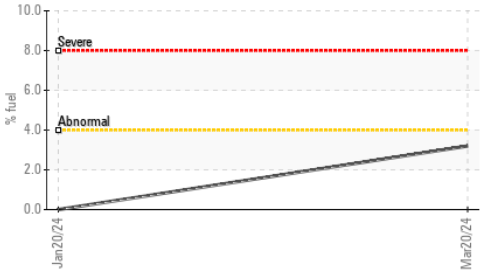
Light fuel dilution occurring. The amount and size of particulates present in the system are acceptable.

FLUID CONDITION

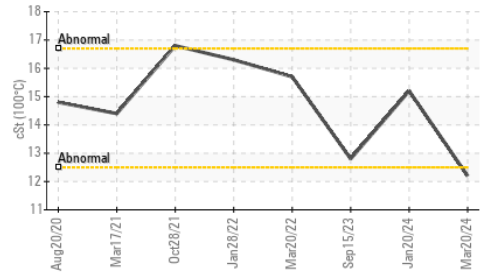
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0014203	KL0013489	KL0012825
Sample Date		Client Info		20 Mar 2024	20 Jan 2024	15 Sep 2023
Machine Age	hrs	Client Info		0	0	13005
Oil Age	hrs	Client Info		12	72	60
Filter Age	hrs	Client Info		12	72	60
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				MARGINAL	ATTENTION	ABNORMAL
Iron	ppm	ASTM D5185m	>100	19	63	60
Chromium	ppm	ASTM D5185m	>20	<1	2	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	<1
Lead	ppm	ASTM D5185m	>40	2	12	1
Copper	ppm	ASTM D5185m	>330	3	28	3
Tin	ppm	ASTM D5185m	>15	1	3	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	12	12	▲ 42
Potassium	ppm	ASTM D5185m	>20	4	48	3
Fuel	%	ASTM D3524	>4.0	▲ 3.2	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	0.0	NEG
Soot %	%	*ASTM D7844		0.1	0.2	0
Nitration	Abs/cm	*ASTM D7624	>20	7.5	10.6	7.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	15.6	20.2	16.9
Particles >4µm		ASTM D7647		5951	14024	18000
Particles >6µm		ASTM D7647	>5000	3242	● 7640	▲ 9805
Particles >14µm		ASTM D7647	>640	552	● 1300	▲ 1669
Particles >21µm		ASTM D7647	>160	186	● 438	▲ 562
Particles >38µm		ASTM D7647	>40	29	● 68	▲ 87
Particles >71µm		ASTM D7647	>10	3	7	9
Oil Cleanliness		ISO 4406 (c)	>19/16	19/16	● 20/17	▲ 20/18
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		6	47	1
Boron	ppm	ASTM D5185m		0	8	0
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		<1	12	0
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		7	61	7
Calcium	ppm	ASTM D5185m		2795	2490	2702
Phosphorus	ppm	ASTM D5185m		1161	964	1072
Zinc	ppm	ASTM D5185m		1366	1102	1319
Sulfur	ppm	ASTM D5185m		3931	3789	4019
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.2	19.8	10.9
Base Number (BN)	mg KOH/g	ASTM D2896		4.47	7.78	8.87
Visc @ 100°C	cSt	ASTM D445		▲ 12.2	15.2	12.8

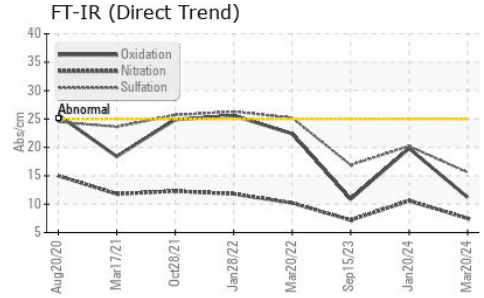
Fuel Dilution



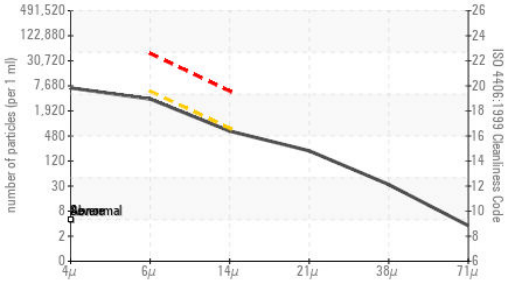
Viscosity @ 100°C



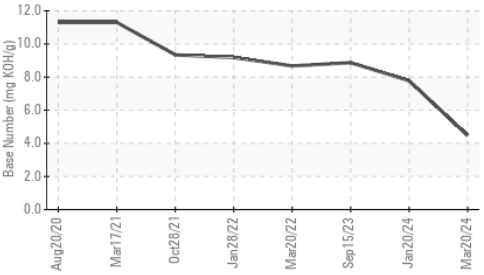
FT-IR (Direct Trend)



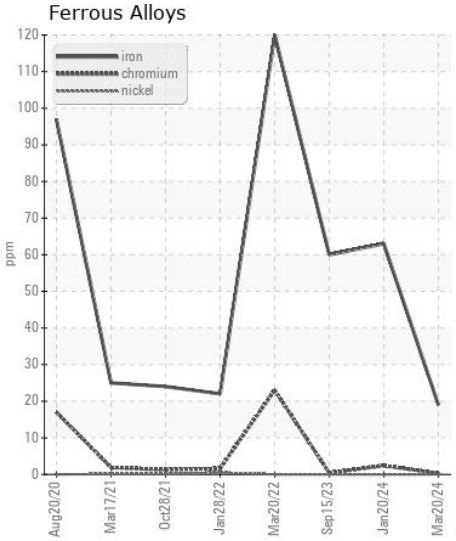
Particle Count



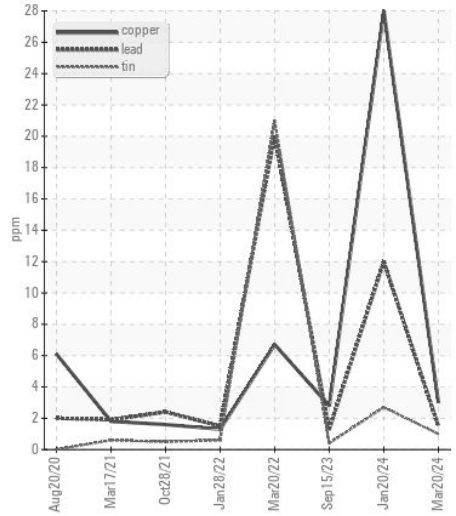
Base Number



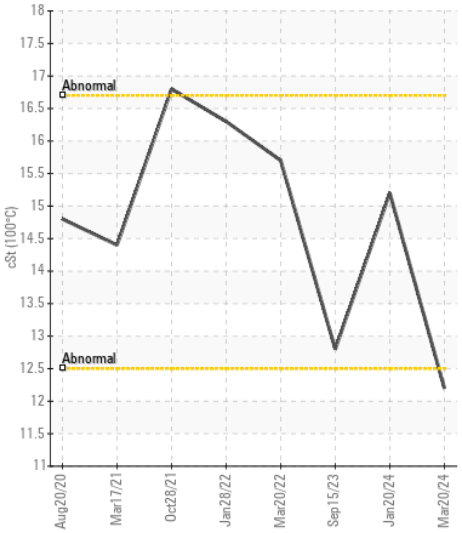
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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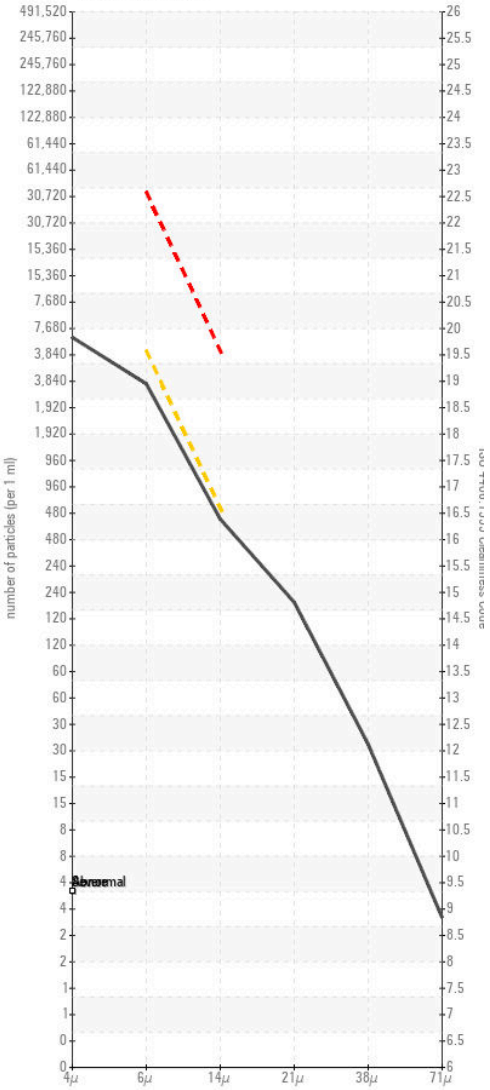

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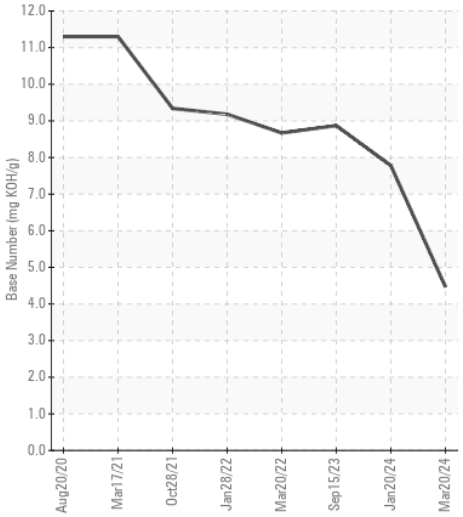

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014203
Lab Number : 06153319
Unique Number : 10983397
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel, PrtCount)

Received : 18 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 23 Apr 2024 - Jonathan Hester

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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