MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
CATAMARAN X4
Component
Port Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (--- QTS)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

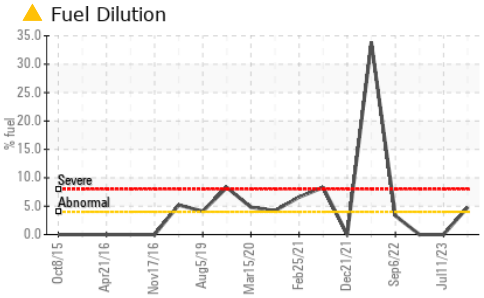
CONTAMINATION

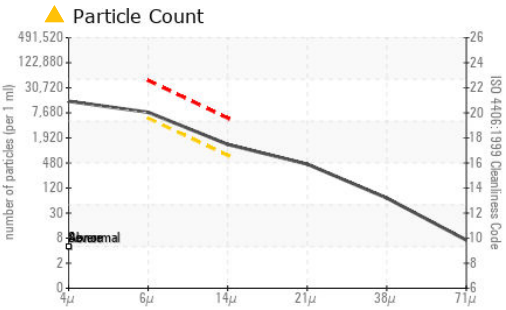
There is a moderate amount of particulates present in the oil. There is a moderate amount of fuel present in the oil.

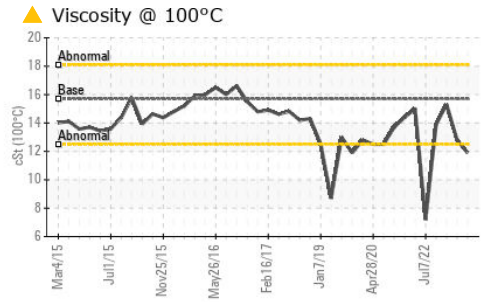
FLUID CONDITION

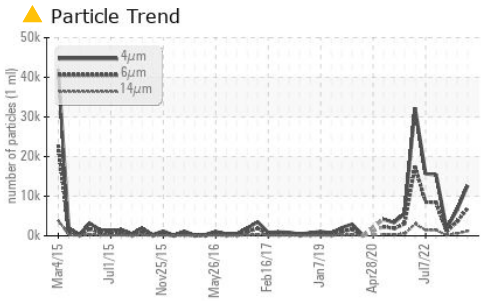
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity.

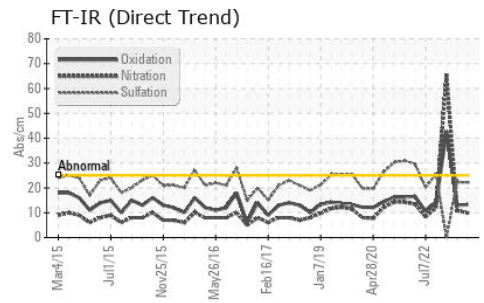
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013495	KL0012668	KL0008921
Sample Date		Client Info		11 Jun 2024	11 Jul 2023	13 Dec 2022
Machine Age	hrs	Client Info		11919	18702	18702
Oil Age	hrs	Client Info		258	294	311
Filter Age	hrs	Client Info		258	294	311
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ATTENTION	SEVERE
Iron	ppm	ASTM D5185m	>75	59	47	▲ 175
Chromium	ppm	ASTM D5185m	>8	1	2	▲ 11
Nickel	ppm	ASTM D5185m	>2	<1	<1	▲ 8
Titanium	ppm	ASTM D5185m	>3	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	4	▲ 60
Lead	ppm	ASTM D5185m	>18	4	3	10
Copper	ppm	ASTM D5185m	>80	41	46	64
Tin	ppm	ASTM D5185m	>14	3	2	2
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	9	9	10
Potassium	ppm	ASTM D5185m	>20	4	10	▲ 250
Fuel	%	ASTM D3524	>4.0	▲ 4.8	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	0.0	▲ 0.10
Soot %	%	*ASTM D7844		1.9	2.2	4.8
Nitration	Abs/cm	*ASTM D7624	>20	9.9	10.9	65.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.2	22.2	0.0
Particles >4µm		ASTM D7647		12675	6568	1860
Particles >6µm		ASTM D7647	>5000	● 6905	3578	1013
Particles >14µm		ASTM D7647	>640	● 1175	609	172
Particles >21µm		ASTM D7647	>160	▲ 396	205	58
Particles >38µm		ASTM D7647	>40	● 61	32	9
Particles >71µm		ASTM D7647	>10	6	3	1
Oil Cleanliness		ISO 4406 (c)	>19/16	● 20/17	19/16	17/15
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	>75	7	● 160	● 4924
Boron	ppm	ASTM D5185m		20	19	59
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		4	<1	2
Manganese	ppm	ASTM D5185m		2	1	2
Magnesium	ppm	ASTM D5185m		717	763	1373
Calcium	ppm	ASTM D5185m		1226	1360	1282
Phosphorus	ppm	ASTM D5185m	1200	718	664	548
Zinc	ppm	ASTM D5185m	1300	783	805	714
Sulfur	ppm	ASTM D5185m	3200	3075	3162	3559
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.2	13.0	42.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	5.7	8.29	6.84
Visc @ 100°C	cSt	ASTM D445	15.7	▲ 11.9	12.8	15.3

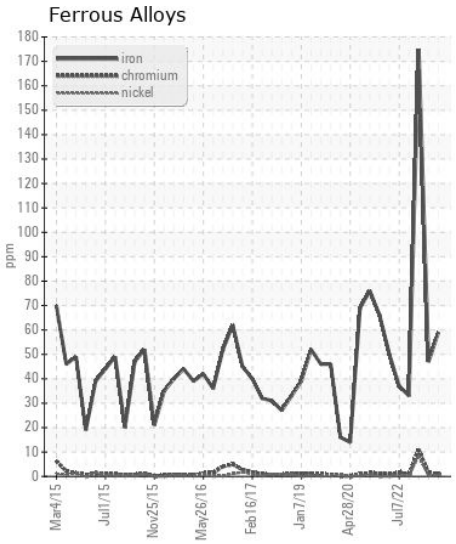


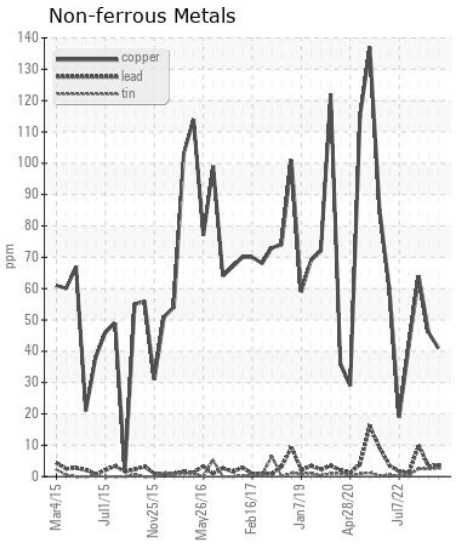


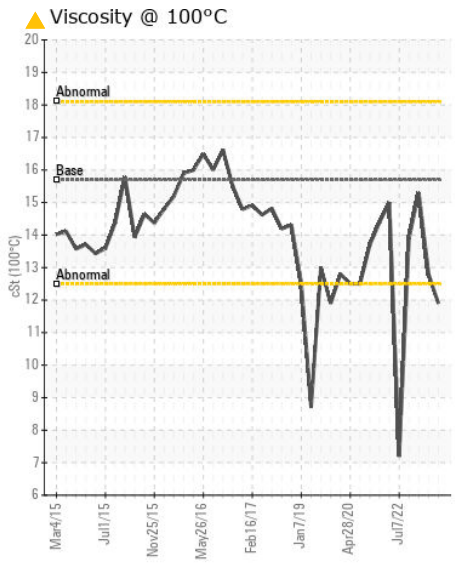


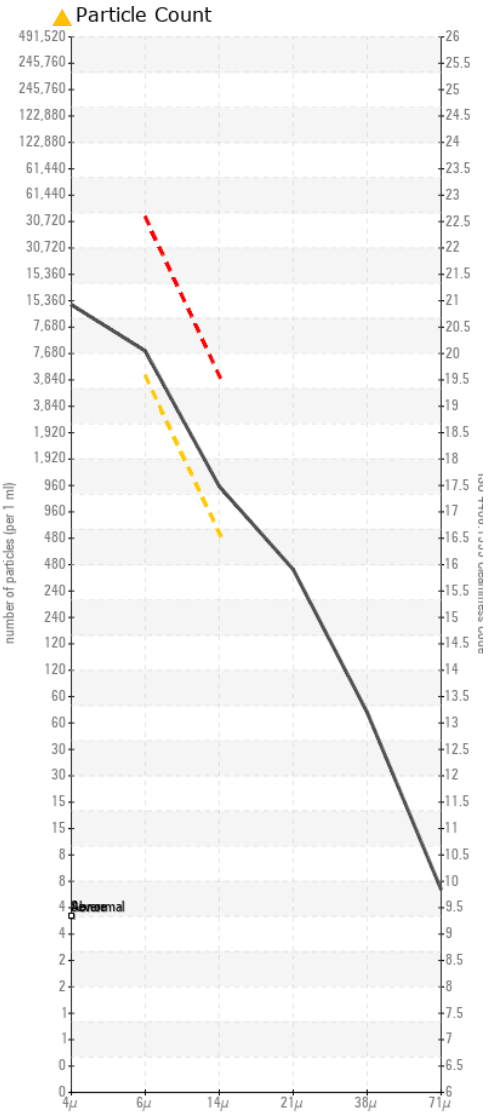


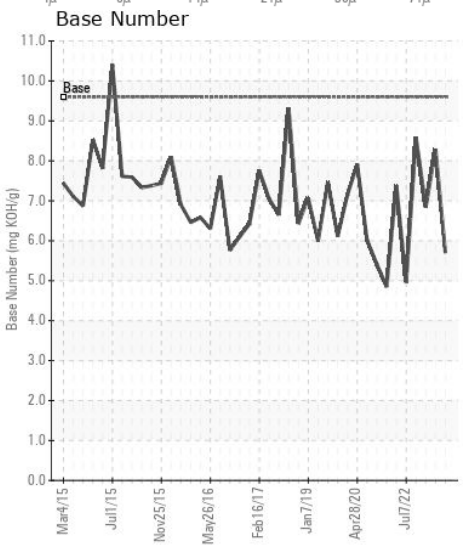












Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013495 **Received** : 17 Jun 2024
Lab Number : 06212754 **Tested** : 20 Jun 2024
Unique Number : 11085618 **Diagnosed** : 20 Jun 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel, PrtCount)

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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