



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL



Machine Id
MACK T00519
Component
Diesel Engine
Fluid
CASTROL VECTON 15W40 CK4 (10 GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0800387	WC0701055	WC0557588
Sample Date		Client Info		06 Feb 2024	04 Oct 2022	17 Mar 2022
Machine Age	mls	Client Info		792887	744797	721558
Oil Age	mls	Client Info		15000	23239	21536
Filter Age	mls	Client Info		15000	23239	21536
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	113	▲ 260	▲ 253
Chromium	ppm	ASTM D5185m	>20	2	4	4
Nickel	ppm	ASTM D5185m	>5	2	3	3
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	4	4
Lead	ppm	ASTM D5185m	>40	5	35	23
Copper	ppm	ASTM D5185m	>330	5	13	15
Tin	ppm	ASTM D5185m	>15	2	5	6
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

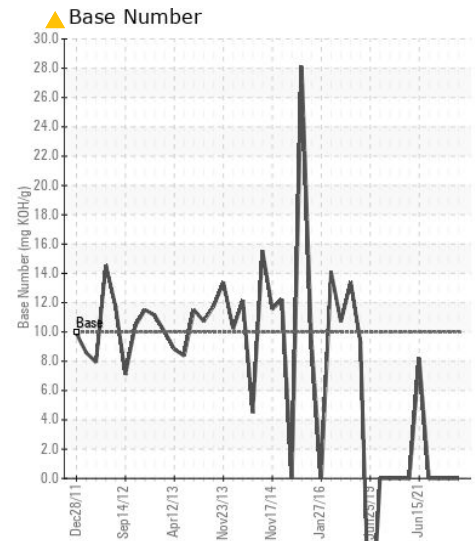
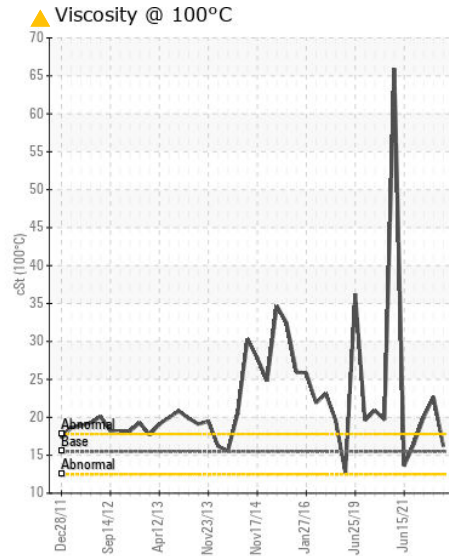
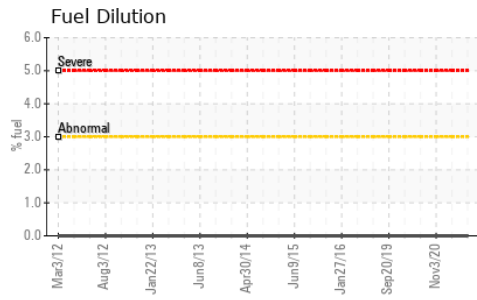
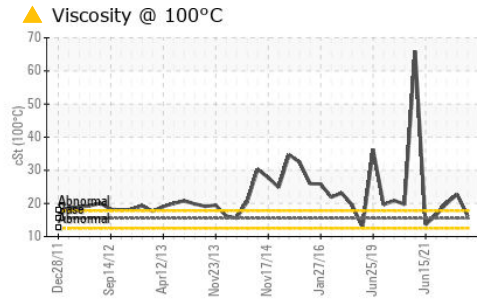
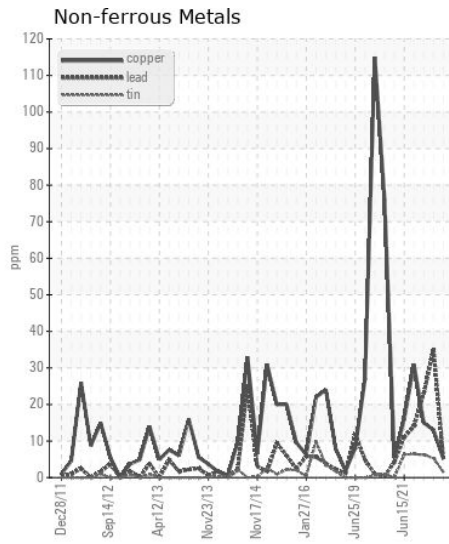
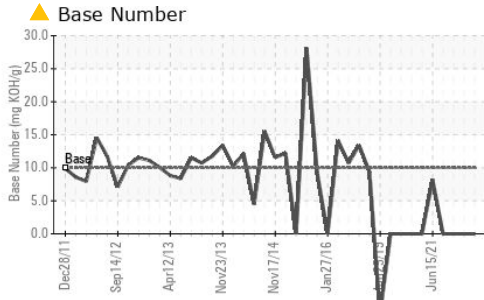
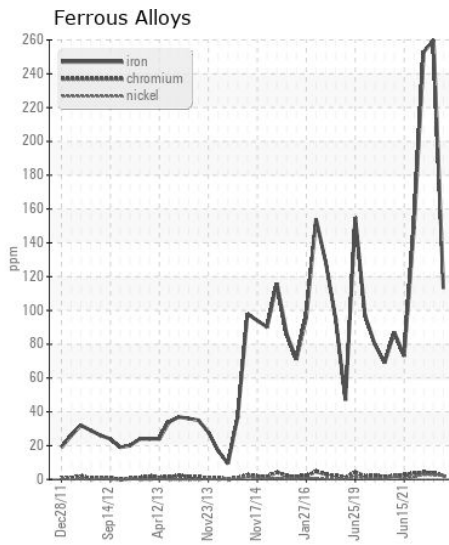
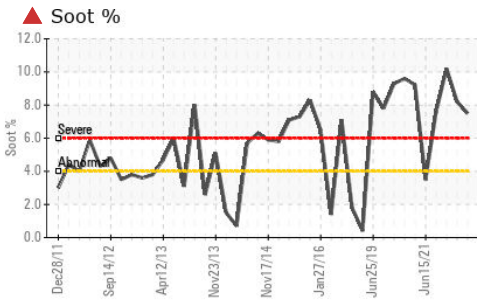
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m	>25	7	10	10
Potassium	ppm	ASTM D5185m	>20	3	5	2
Fuel	%	ASTM D3524	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	▲ 7.5	▲ 8.2	▲ 10.2
Nitration	Abs/cm	*ASTM D7624	>20	52.2	35.6	34.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	65.0	62.9	66.2
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is higher than normal. The BN level is low.

Sodium	ppm	ASTM D5185m		5	8	6
Boron	ppm	ASTM D5185m		22	15	19
Barium	ppm	ASTM D5185m		1	0	0
Molybdenum	ppm	ASTM D5185m		80	99	95
Manganese	ppm	ASTM D5185m		1	2	2
Magnesium	ppm	ASTM D5185m		64	93	109
Calcium	ppm	ASTM D5185m		1612	1828	2088
Phosphorus	ppm	ASTM D5185m		761	851	939
Zinc	ppm	ASTM D5185m		951	1044	1077
Sulfur	ppm	ASTM D5185m		3082	3454	2704
Oxidation	Abs/.1mm	*ASTM D7414	>25	96.1	107.5	65.0
Base Number (BN)	mg KOH/g	ASTM D2896	10	▲ 0.0	▲ 0.0	▲ 0.0
Visc @ 100°C	cSt	ASTM D445	15.5	▲ 16.2	▲ 22.7	▲ 20.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0800387

Lab Number : 06102245

Unique Number : 10900475

Test Package : CONST (Additional Tests: FuelDilution, TBN)

Received : 27 Feb 2024

Tested : 28 Feb 2024

Diagnosed : 28 Feb 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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