



Machine Id
MACK 20
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (10 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PCA0110135	WC0721456	WCM2280323
Sample Date		Client Info		27 Jun 2024	01 Sep 2022	22 Nov 2017
Machine Age	mls	Client Info		698594	642699	507611
Oil Age	mls	Client Info		3643	31559	10019
Filter Age	mls	Client Info		3643	31559	10019
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	75	▲ 199	31
Chromium	ppm	ASTM D5185m	>20	4	7	1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	11	4
Lead	ppm	ASTM D5185m	>40	0	28	1
Copper	ppm	ASTM D5185m	>330	3	17	7
Tin	ppm	ASTM D5185m	>15	0	3	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

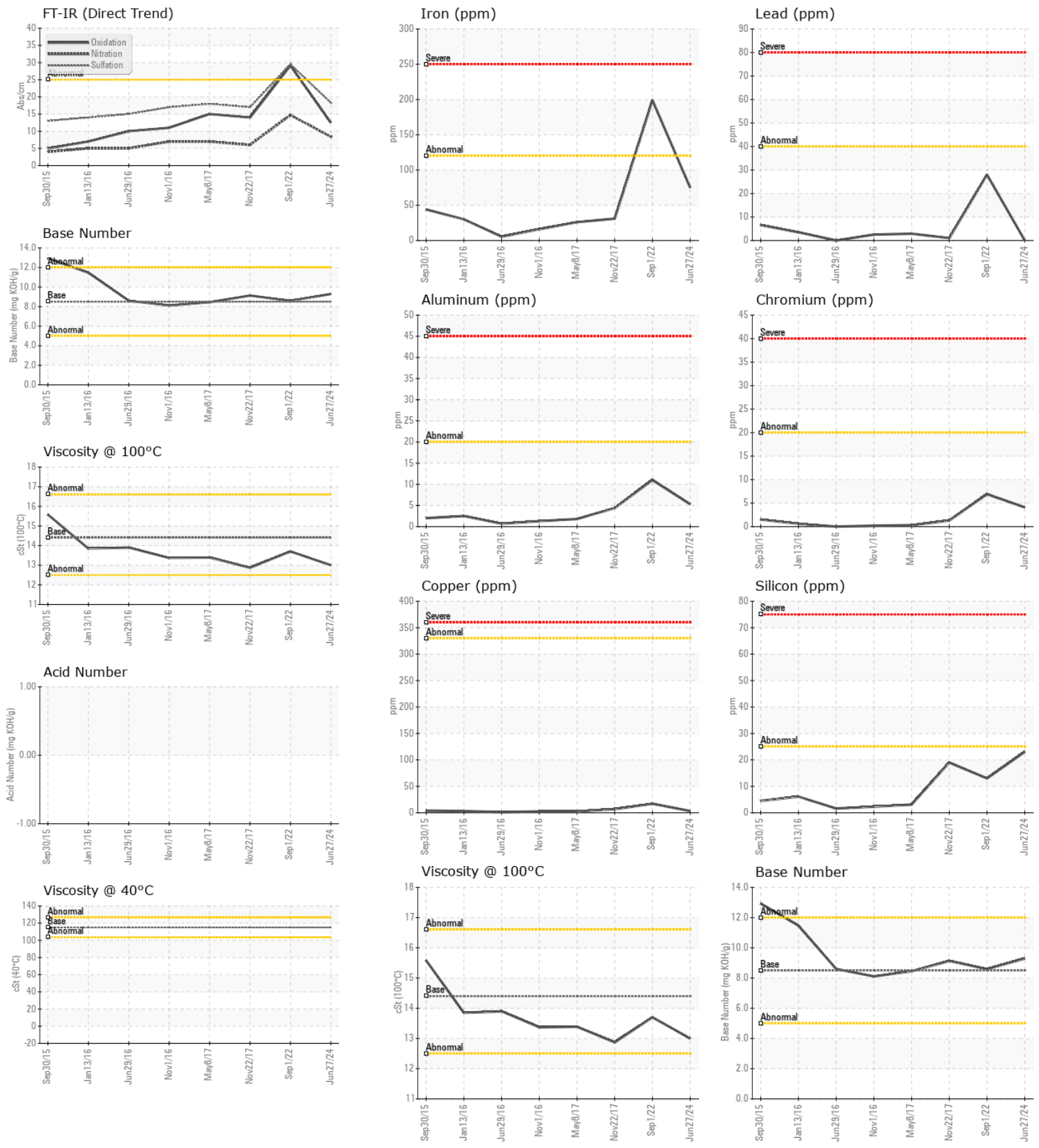
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	23	13	19
Potassium	ppm	ASTM D5185m	>20	1	13	7
Fuel		WC Method	>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	0.3	1	0
Nitration	Abs/cm	*ASTM D7624	>20	8.4	14.7	6.
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	29.5	17.
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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	4	4	3
Boron	ppm	ASTM D5185m	250	5	15	260
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	8	65	104
Manganese	ppm	ASTM D5185m		<1	2	<1
Magnesium	ppm	ASTM D5185m	450	74	874	501
Calcium	ppm	ASTM D5185m	3000	2280	1243	1374
Phosphorus	ppm	ASTM D5185m	1150	939	1011	677
Zinc	ppm	ASTM D5185m	1350	1061	1257	801
Sulfur	ppm	ASTM D5185m	4250	4155	2665	2114
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.5	29.1	14.
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	9.29	8.59	9.13
Visc @ 100°C	cSt	ASTM D445	14.4	13.0	13.7	12.87



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0110135 **Received** : 01 Jul 2024
Lab Number : 06225342 **Tested** : 03 Jul 2024
Unique Number : 11103539 **Diagnosed** : 03 Jul 2024 - Don Baldridge
Test Package : MOB 2 (Additional Tests: KV40, TAN Man)

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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