



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL



Machine Id
MACK GRANITE A-334
Component
Diesel Engine
Fluid
DURAMAX 15W40 (56 QTS)

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.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DC0024238	DC0016948	DCM1022660
Sample Date		Client Info		21 Oct 2023	20 Nov 2021	05 Feb 2020
Machine Age	hrs	Client Info		31001	27350	23372
Oil Age	hrs	Client Info		1528	879	1145
Filter Age	hrs	Client Info		1528	879	1145
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	SEVERE

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>120	▲ 175	106	▲ 242
Chromium	ppm	ASTM D5185m	>20	4	3	6
Nickel	ppm	ASTM D5185m	>5	1	1	1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	2	3
Lead	ppm	ASTM D5185m	>40	3	2	2
Copper	ppm	ASTM D5185m	>330	26	19	180
Tin	ppm	ASTM D5185m	>15	4	3	4
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

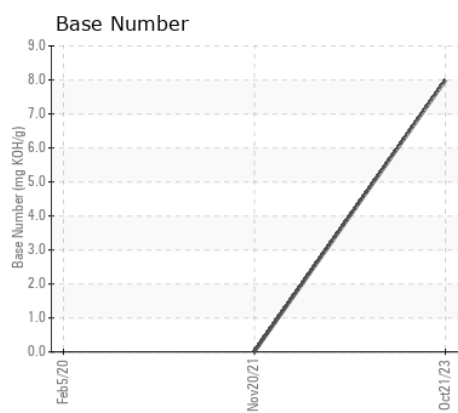
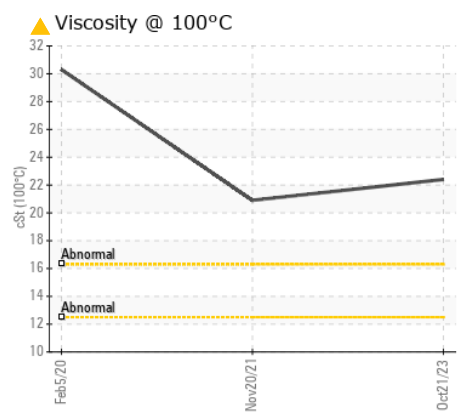
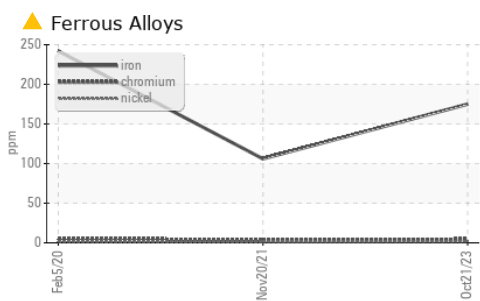
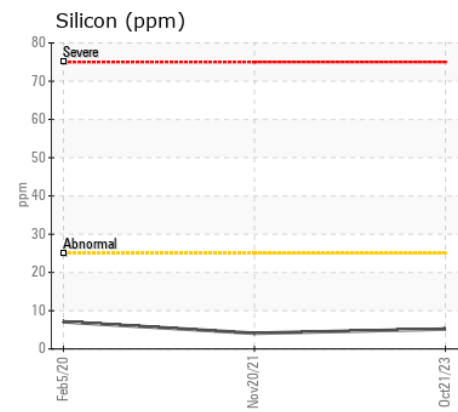
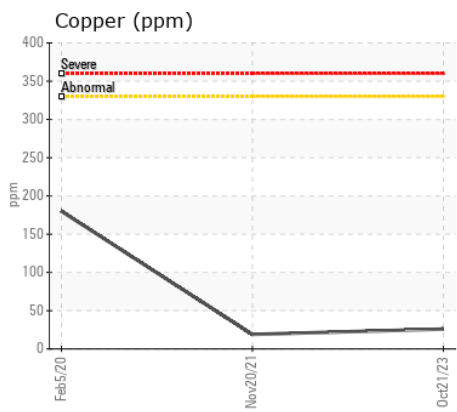
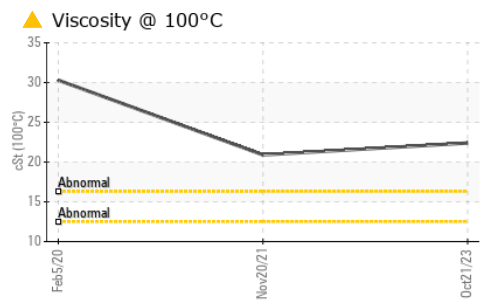
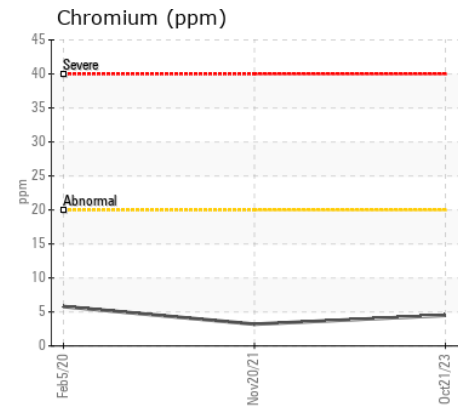
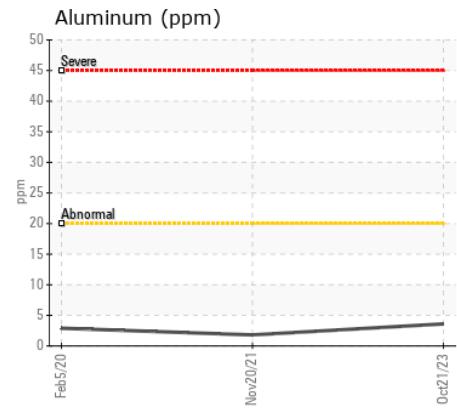
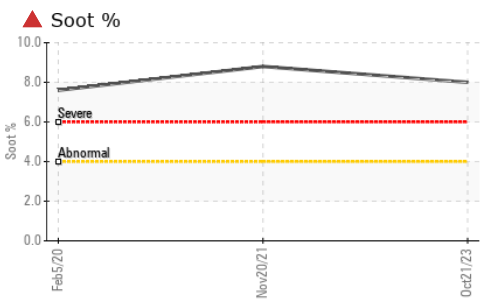
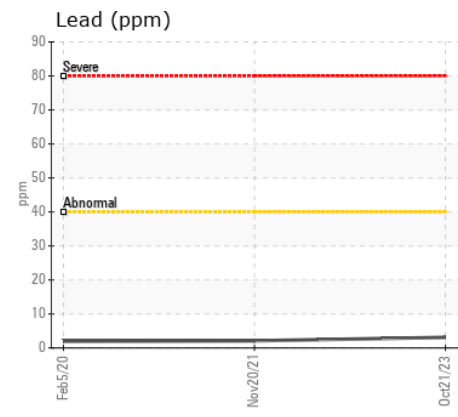
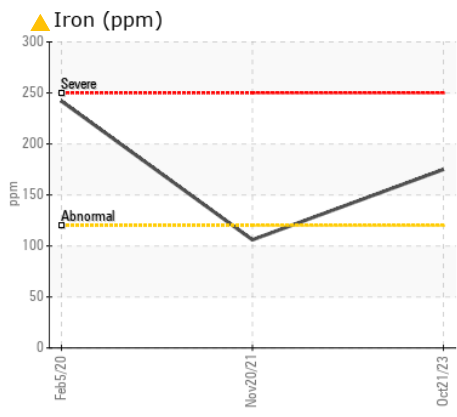
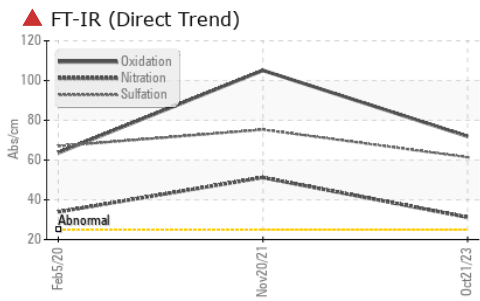
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m	>25	5	4	7
Potassium	ppm	ASTM D5185m	>20	0	1	1
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	▲ 8	▲ 8.8	▲ 7.6
Nitration	Abs/cm	*ASTM D7624	>20	31.2	51.2	33.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	61.4	75.3	67
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<1	2	3
Boron	ppm	ASTM D5185m		2	2	4
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		8	4	43
Manganese	ppm	ASTM D5185m		2	<1	2
Magnesium	ppm	ASTM D5185m		95	56	681
Calcium	ppm	ASTM D5185m		2725	2476	1124
Phosphorus	ppm	ASTM D5185m		965	903	800
Zinc	ppm	ASTM D5185m		1260	1109	952
Sulfur	ppm	ASTM D5185m		4482	3211	1922
Oxidation	Abs/.1mm	*ASTM D7414	>25	71.9	105.1	63.6
Base Number (BN)	mg KOH/g	ASTM D2896		7.99	▲ 0.0	---
Visc @ 100°C	cSt	ASTM D445		▲ 22.4	▲ 20.9	▲ 30.3



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DC0024238
Lab Number : 06146732
Unique Number : 10976810
Test Package : MOB 2
Received : 11 Apr 2024
Tested : 15 Apr 2024
Diagnosed : 15 Apr 2024 - Sean Felton

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Certificate L2367
 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)