



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
MACK CV513 88

Component
Diesel Engine

Fluid
TRC PRO-SPEC III SYNTHETIC BLEND 15W40 (--- 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. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06124388	TR05747308	---
Sample Date		Client Info		21 Feb 2024	13 Jan 2023	---
Machine Age	hrs	Client Info		21905	20304	---
Oil Age	hrs	Client Info		450	63	---
Filter Age	hrs	Client Info		450	63	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	24	9	---
Chromium	ppm	ASTM D5185m	>20	<1	<1	---
Nickel	ppm	ASTM D5185m	>5	0	0	---
Titanium	ppm	ASTM D5185m	>2	0	<1	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>20	1	2	---
Lead	ppm	ASTM D5185m	>40	<1	1	---
Copper	ppm	ASTM D5185m	>330	9	5	---
Tin	ppm	ASTM D5185m	>15	0	<1	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

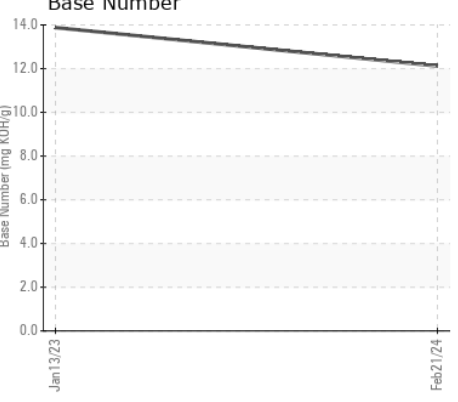
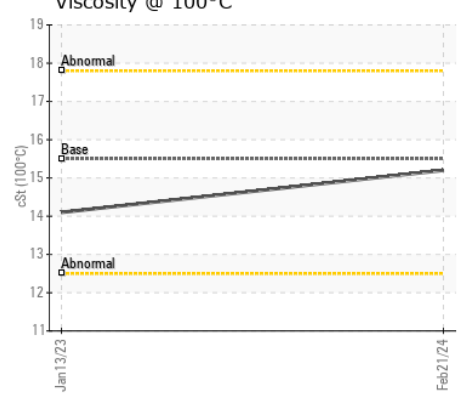
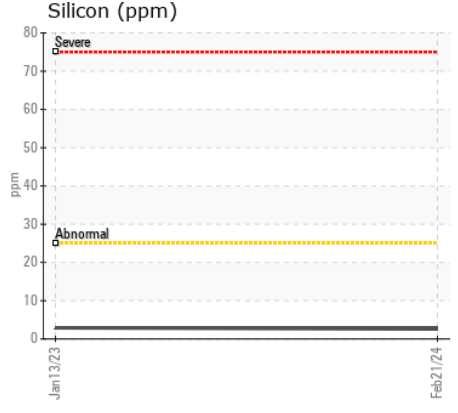
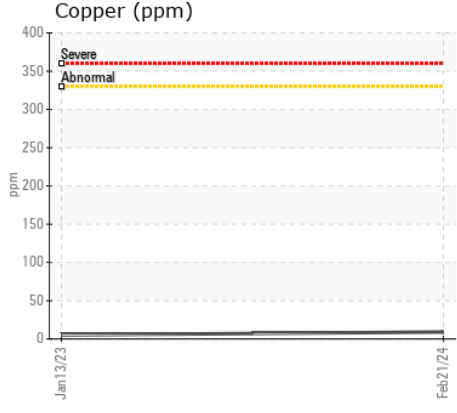
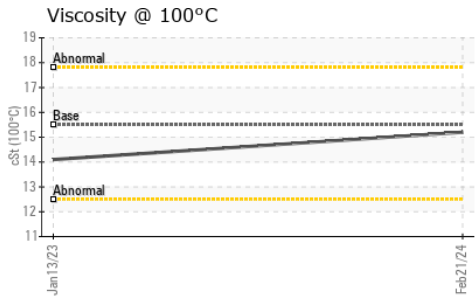
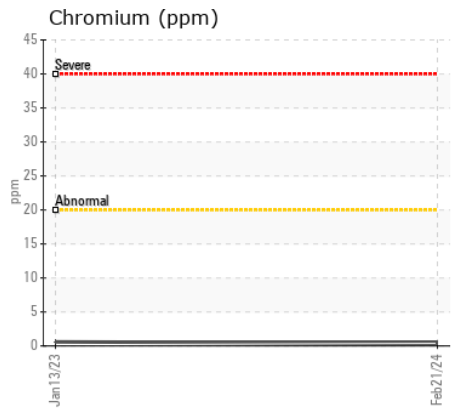
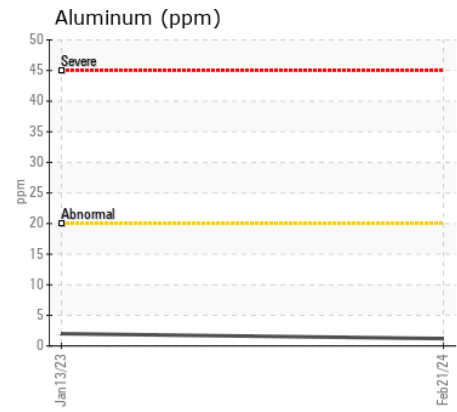
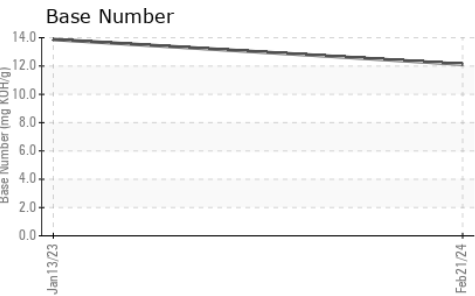
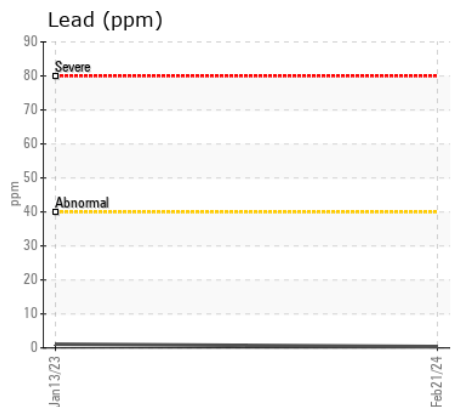
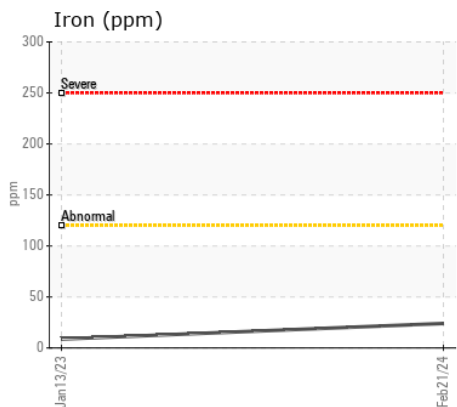
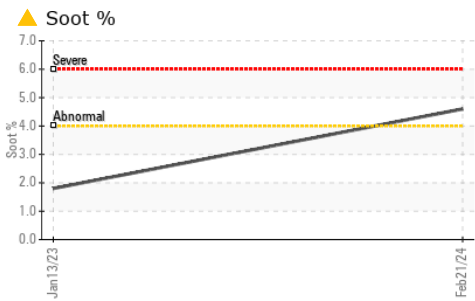
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m	>25	3	3	---
Potassium	ppm	ASTM D5185m	>20	0	<1	---
Fuel	%	ASTM D3524	>3.0	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>4	4.6	1.8	---
Nitration	Abs/cm	*ASTM D7624	>20	9.7	6.2	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.1	19.1	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<1	3	---
Boron	ppm	ASTM D5185m		0	2	---
Barium	ppm	ASTM D5185m		0	2	---
Molybdenum	ppm	ASTM D5185m		6	<1	---
Manganese	ppm	ASTM D5185m		0	<1	---
Magnesium	ppm	ASTM D5185m		114	53	---
Calcium	ppm	ASTM D5185m		4309	3979	---
Phosphorus	ppm	ASTM D5185m		903	870	---
Zinc	ppm	ASTM D5185m		1057	979	---
Sulfur	ppm	ASTM D5185m		4355	4791	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.6	8.6	---
Base Number (BN)	mg KOH/g	ASTM D2896		12.12	13.88	---
Visc @ 100°C	cSt	ASTM D445	15.5	15.2	14.1	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06124388 **Received** : 20 Mar 2024
Lab Number : 06124388 **Tested** : 23 Mar 2024
Unique Number : 10938539 **Diagnosed** : 23 Mar 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: FuelDilution)

HUTH READY MIX AND SUPPLY CO
 501 5TH ST NW
 MASSILLON, OH
 US 44647
 Contact: JIM FITZGERALD

To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - 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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F: