



OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
Store 9 - Marietta
Machine Id
CATERPILLAR TL943C E124 (S/N THH00942)
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. 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		LEC0048974	---	---
Sample Date		Client Info		15 May 2024	---	---
Machine Age	hrs	Client Info		6995	---	---
Oil Age	hrs	Client Info		500	---	---
Filter Age	hrs	Client Info		500	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				ABNORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	84	---	---
Chromium	ppm	ASTM D5185m	>20	2	---	---
Nickel	ppm	ASTM D5185m	>2	<1	---	---
Titanium	ppm	ASTM D5185m	>2	<1	---	---
Silver	ppm	ASTM D5185m	>2	0	---	---
Aluminum	ppm	ASTM D5185m	>25	13	---	---
Lead	ppm	ASTM D5185m	>40	0	---	---
Copper	ppm	ASTM D5185m	>330	30	---	---
Tin	ppm	ASTM D5185m	>15	<1	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. There is an abnormal amount of solids and carbon present in the oil.

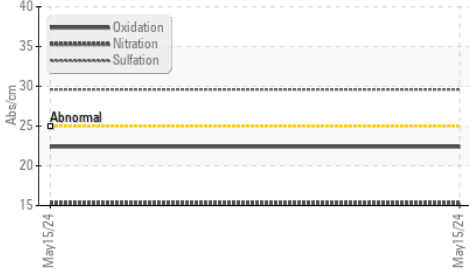
Silicon	ppm	ASTM D5185m	>120	24	---	---
Potassium	ppm	ASTM D5185m	>20	9	---	---
Fuel		WC Method	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	3.8	---	---
Nitration	Abs/cm	*ASTM D7624	>20	15.3	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	29.6	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

FLUID CONDITION

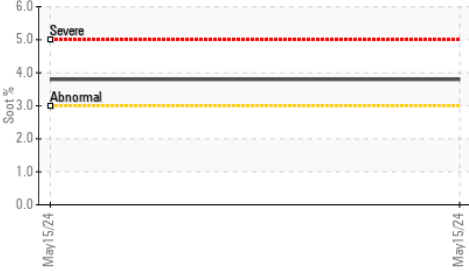
The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>158	3	---	---
Boron	ppm	ASTM D5185m	250	135	---	---
Barium	ppm	ASTM D5185m	10	0	---	---
Molybdenum	ppm	ASTM D5185m	100	57	---	---
Manganese	ppm	ASTM D5185m		1	---	---
Magnesium	ppm	ASTM D5185m	450	458	---	---
Calcium	ppm	ASTM D5185m	3000	1552	---	---
Phosphorus	ppm	ASTM D5185m	1150	1015	---	---
Zinc	ppm	ASTM D5185m	1350	1192	---	---
Sulfur	ppm	ASTM D5185m	4250	3285	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.4	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.2	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	12.7	---	---

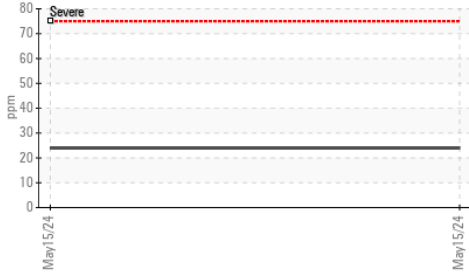
▲ FT-IR (Direct Trend)



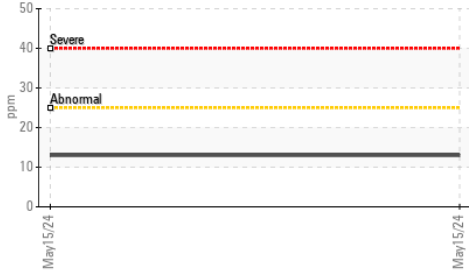
▲ Soot %



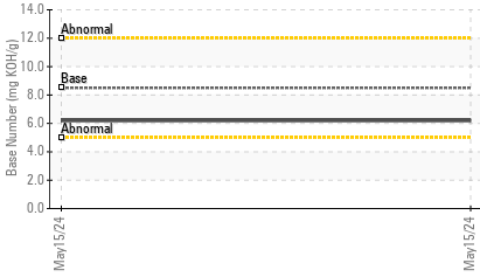
▲ Silicon (ppm)



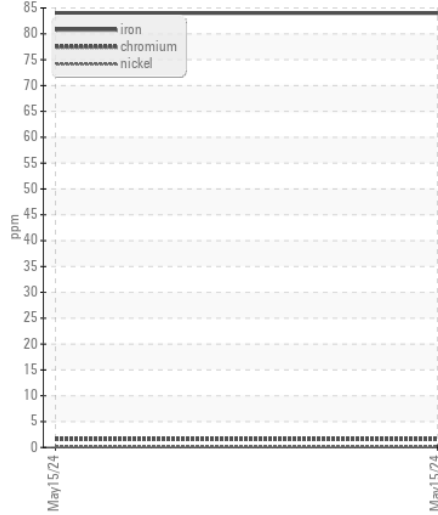
● Aluminum (ppm)



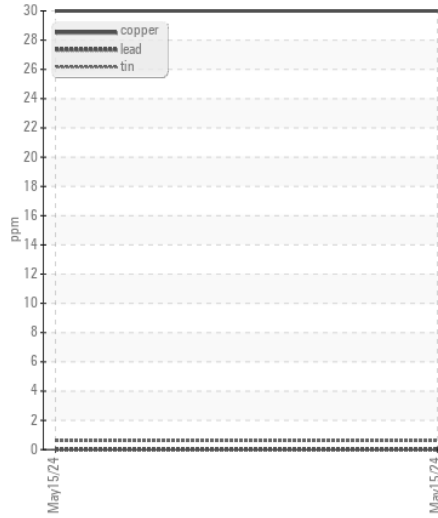
Base Number



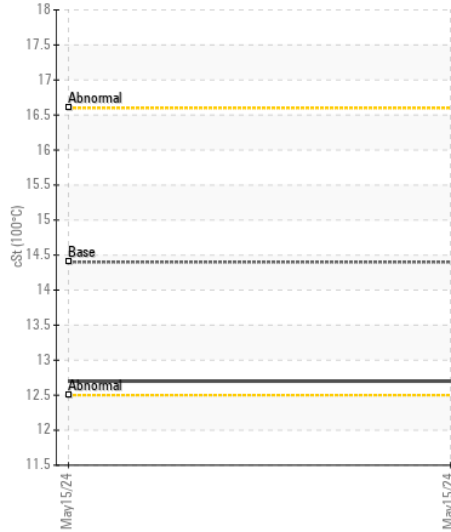
Ferrous Alloys



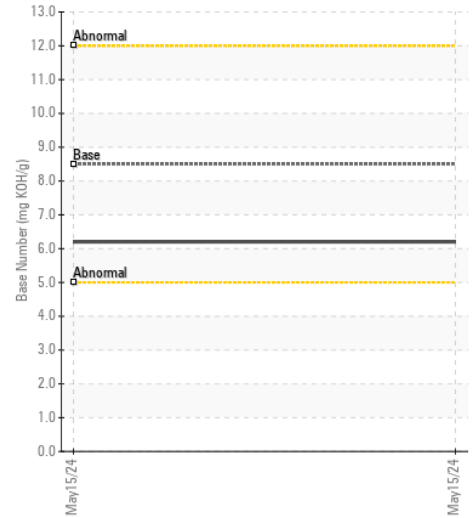
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : LEC0048974

Lab Number : 06196416

Unique Number : 11058539

Test Package : CONST (Additional Tests: TBN)

Received : 31 May 2024

Tested : 02 Jun 2024

Diagnosed : 03 Jun 2024 - Don Baldrige

LANE PIPELINE

2946 E MAIN ST

BRIDGEPORT, WV

US 26330

Contact: JESSE WILBURN

jessewilburn@gmail.com

T: (740)440-0927

F:

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)