OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
146801
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

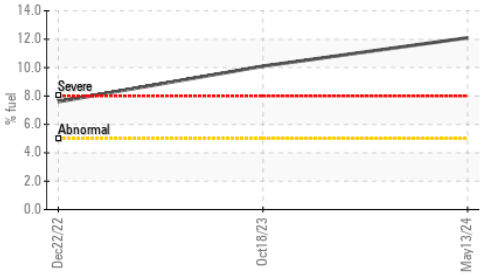
There is a high amount of fuel present in the oil.

FLUID CONDITION

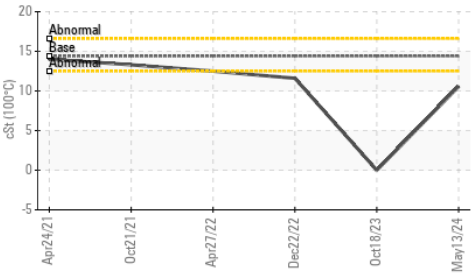
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		RPL0017057	RPL0011187	RPL0006911
Sample Date		Client Info		13 May 2024	18 Oct 2023	22 Dec 2022
Machine Age	mls	Client Info		789000	290212	278001
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Filter Changed		Client Info		Changed	N/A	N/A
Sample Status				SEVERE	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m	>100	37	16	45
Chromium	ppm	ASTM D5185m	>20	1	<1	2
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	11	5	8
Lead	ppm	ASTM D5185m	>40	4	1	7
Copper	ppm	ASTM D5185m	>330	1	<1	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	7	5	9
Potassium	ppm	ASTM D5185m	>20	22	8	14
Fuel	%	ASTM D3524	>5	▲ 12.1	▲ 10.1	▲ 7.6
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.4	0.6
Nitration	Abs/cm	*ASTM D7624	>20	12.6	10.7	13.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.2	22.1	24.9
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
Sodium	ppm	ASTM D5185m	>158	4	2	5
Boron	ppm	ASTM D5185m	250	44	44	17
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	77	63	33
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	570	599	682
Calcium	ppm	ASTM D5185m	3000	1248	1480	1281
Phosphorus	ppm	ASTM D5185m	1150	690	767	747
Zinc	ppm	ASTM D5185m	1350	812	960	920
Sulfur	ppm	ASTM D5185m	4250	2697	2654	2827
Oxidation	Abs/.1mm	*ASTM D7414	>25	29.0	23.6	26.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	4.9	7.5	6.6
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 10.57	▲ 0	▲ 11.6

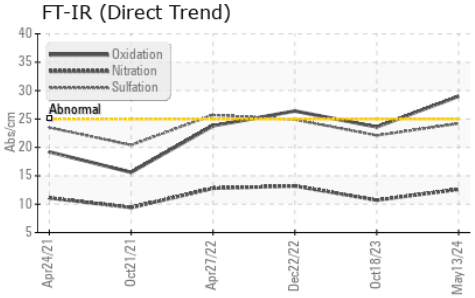
Fuel Dilution



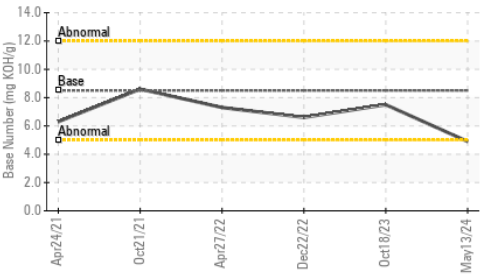
Viscosity @ 100°C



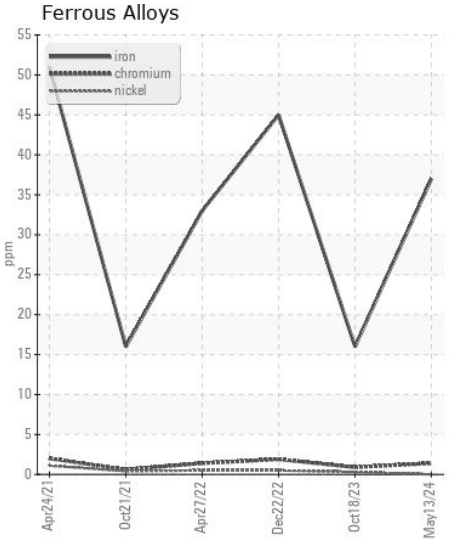
FT-IR (Direct Trend)



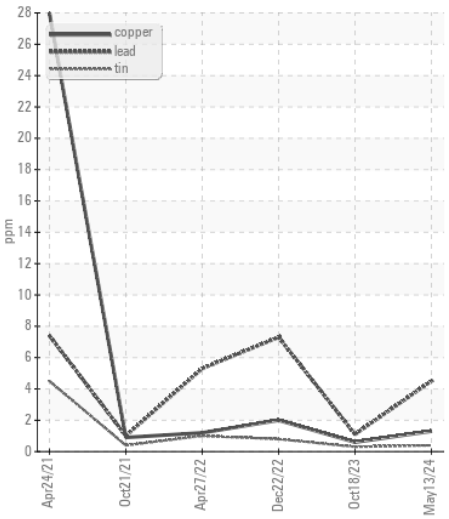
Base Number



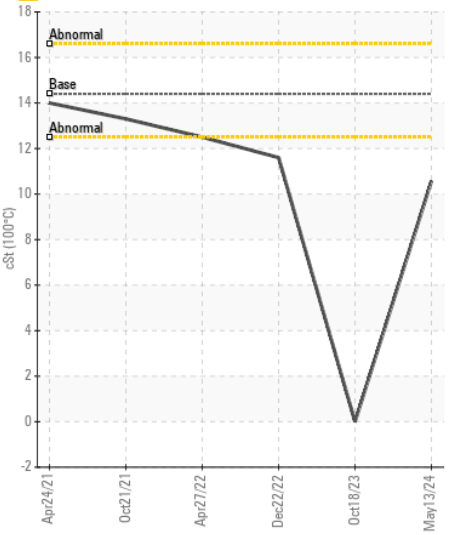
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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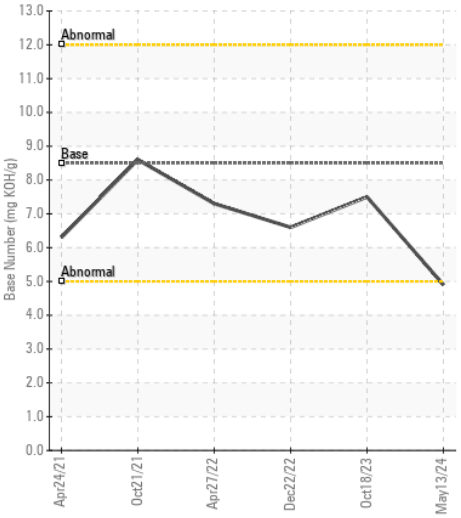

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RPL0017057
Lab Number : 06187272
Unique Number : 11044024
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 22 May 2024
Tested : 30 May 2024
Diagnosed : 31 May 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)

RTL PACLEASE - 7008 - Phoenix
625 South 27th Ave
Phoenix, AZ
US 85009
Contact: Maurice Pilotte
PilotteM@rushenterprises.com
T: (602)566-5712
F: