OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
23575
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

The copper level is abnormal. Elemental level of copper (Cu) probably due to leaching of copper from copper components (i.e. cooling core) by the oil additives. All other metal levels are typical for a new component breaking in.

CONTAMINATION

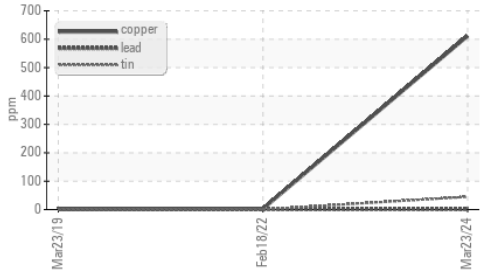
Fuel content negligible. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components.

FLUID CONDITION

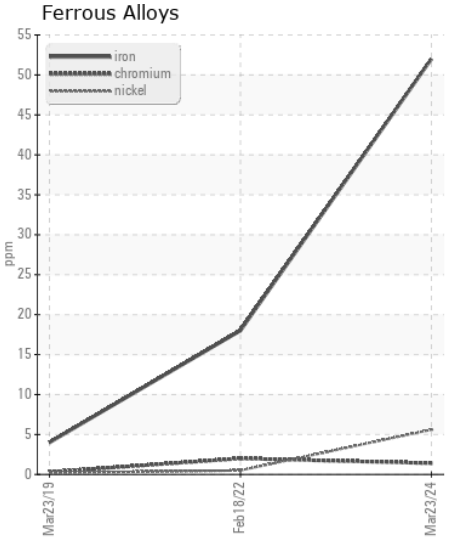
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0912505	WC0660292	WC0328383
Sample Date		Client Info		23 Mar 2024	18 Feb 2022	23 Mar 2019
Machine Age	mls	Client Info		11709	0	0
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	52	18	4
Chromium	ppm	ASTM D5185m	>20	1	2	<1
Nickel	ppm	ASTM D5185m	>4	6	<1	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	1	0	0
Aluminum	ppm	ASTM D5185m	>20	31	5	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	▲ 611	2	<1
Tin	ppm	ASTM D5185m	>15	45	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	5	5	3
Potassium	ppm	ASTM D5185m	>20	102	1	0
Fuel	%	ASTM D3524	>5	0.2	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.7	8.7	7
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.4	21.5	19.7
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	7	0	2
Boron	ppm	ASTM D5185m	250	76	<1	100
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	48	62	55
Manganese	ppm	ASTM D5185m		4	<1	<1
Magnesium	ppm	ASTM D5185m	450	529	1019	366
Calcium	ppm	ASTM D5185m	3000	1661	1217	1872
Phosphorus	ppm	ASTM D5185m	1150	791	1091	1067
Zinc	ppm	ASTM D5185m	1350	883	1310	1198
Sulfur	ppm	ASTM D5185m	4250	2790	2759	2916
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.2	16.5	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	9.3	10.2	8.7
Visc @ 100°C	cSt	ASTM D445	14.4	● 9.8	13.9	15.04

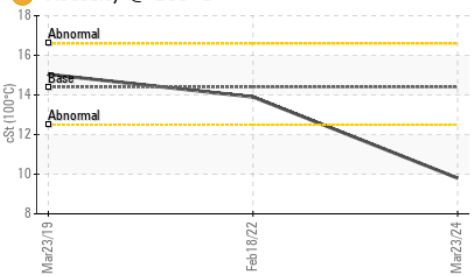
Non-ferrous Metals



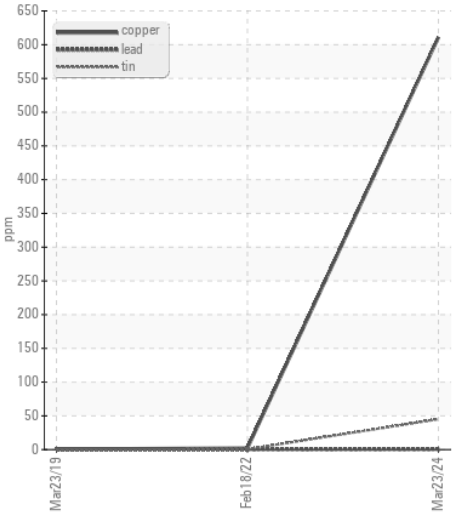
Ferrous Alloys



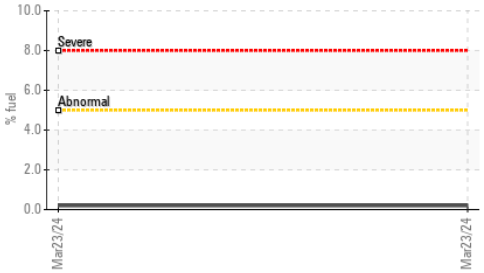
Viscosity @ 100°C



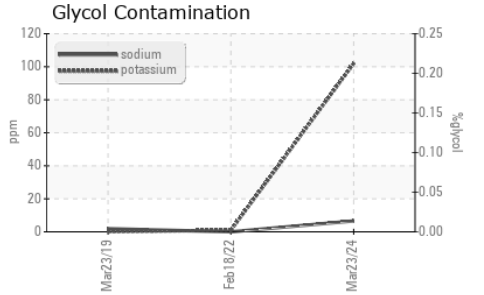
Non-ferrous Metals



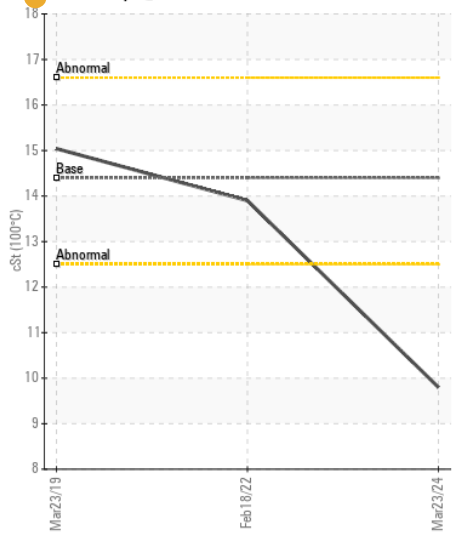
Fuel Dilution



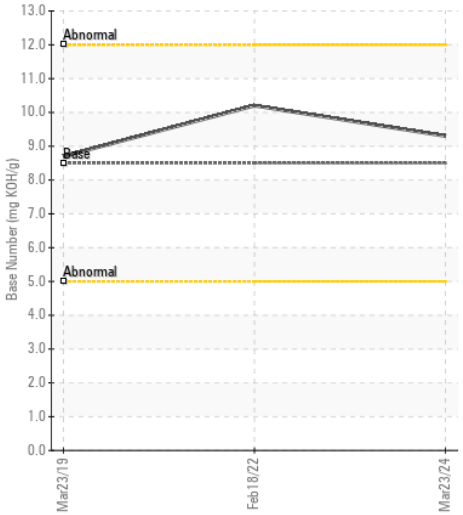
Glycol Contamination



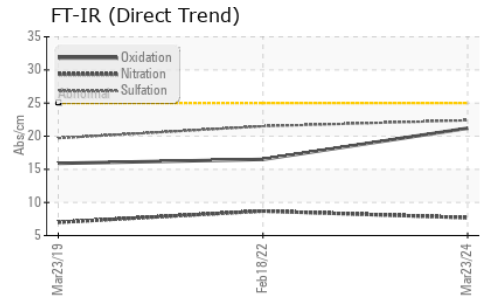
Viscosity @ 100°C



Base Number



FT-IR (Direct Trend)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0912505
Lab Number : 06153653
Unique Number : 10983731
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 18 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 23 Apr 2024 - Don Baldridge

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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