



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
10352
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

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		WC0829963	WC0829413	WC0711117
Sample Date		Client Info		27 Dec 2023	09 Aug 2023	13 Mar 2023
Machine Age	mls	Client Info		465115	460933	444480
Oil Age	mls	Client Info		0	460933	0
Filter Age	mls	Client Info		0	460933	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ATTENTION	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	51	48	19
Chromium	ppm	ASTM D5185m	>20	1	6	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	▲ 7	4
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	74	8	<1
Tin	ppm	ASTM D5185m	>15	<1	2	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Fuel content negligible. There is no indication of any contamination in the oil.

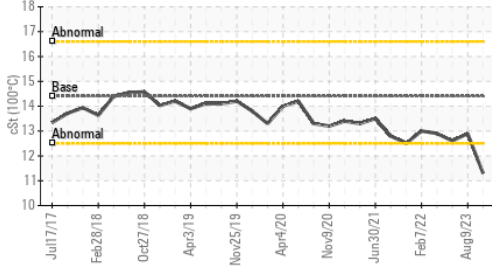
Silicon	ppm	ASTM D5185m	>25	23	▲ 37	4
Potassium	ppm	ASTM D5185m	>20	10	5	3
Fuel	%	ASTM D3524	>5	1.2	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.3	0.4
Nitration	Abs/cm	*ASTM D7624	>20	10.9	8.4	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.5	21.8	21.1
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

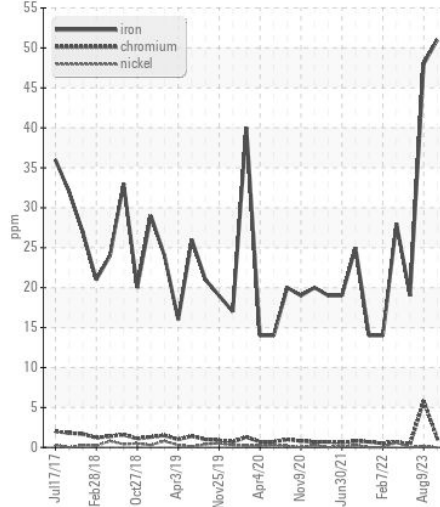
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m	>158	5	34	0
Boron	ppm	ASTM D5185m	250	30	4	3
Barium	ppm	ASTM D5185m	10	0	15	0
Molybdenum	ppm	ASTM D5185m	100	42	63	66
Manganese	ppm	ASTM D5185m		8	5	<1
Magnesium	ppm	ASTM D5185m	450	752	1026	953
Calcium	ppm	ASTM D5185m	3000	1152	1128	1125
Phosphorus	ppm	ASTM D5185m	1150	602	1057	1053
Zinc	ppm	ASTM D5185m	1350	859	1300	1310
Sulfur	ppm	ASTM D5185m	4250	2015	3372	3042
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.4	20.2	21.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.2	8.7	7.7
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 11.3	12.9	12.6

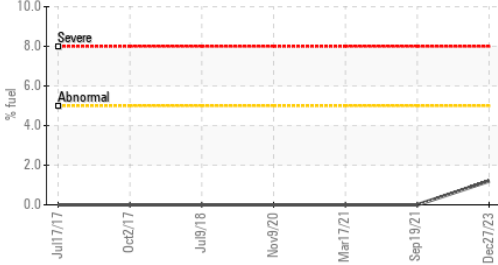
▲ Viscosity @ 100°C



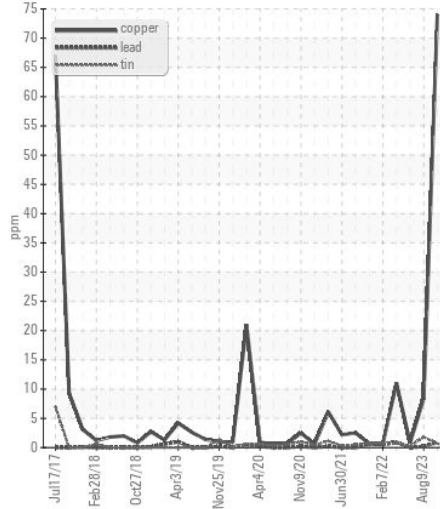
Ferrous Alloys



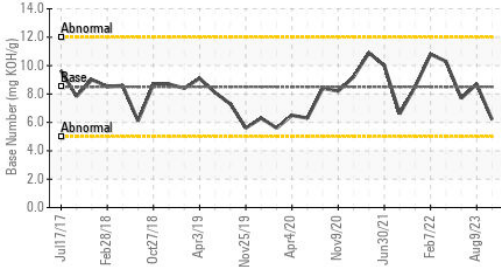
Fuel Dilution



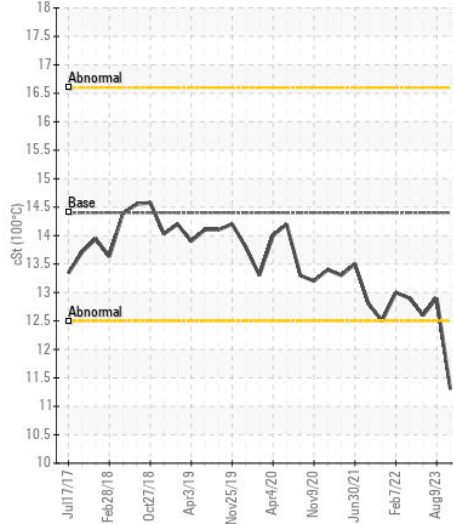
Non-ferrous Metals



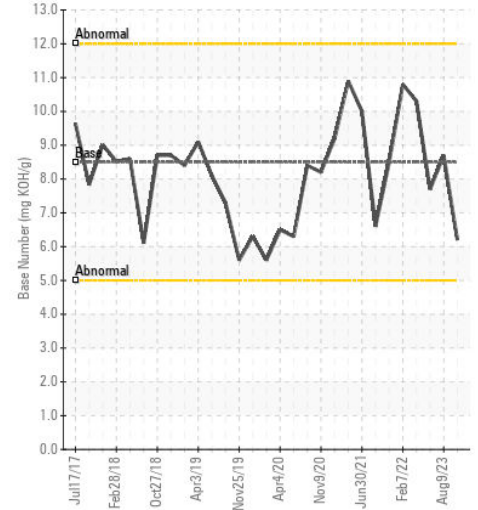
Base Number



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0829963 **Received** : 30 Jan 2024
Lab Number : 06074516 **Diagnosed** : 02 Feb 2024
Unique Number : 10856607 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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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)