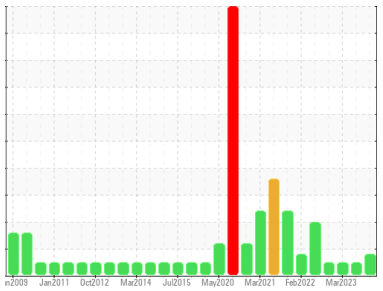
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
CAPACITY 0807106
Component
Front Diesel Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (17 QTS)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
An increase in the copper level is noted. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal. All component wear rates are normal.

Contamination
There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0748594**	WC0748533	WC0655569
Sample Date		Client Info		**04 Apr 2024**	19 Jul 2023	17 Mar 2023
Machine Age	hrs	Client Info		**20639**	19794	19238
Oil Age	hrs	Client Info		**3083**	2238	1682
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ATTENTION**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>130	**26**	15	14
Chromium	ppm	ASTM D5185m	>10	**1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m	>2	**0**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**5**	3	2
Lead	ppm	ASTM D5185m	>20	**<1**	<1	0
Copper	ppm	ASTM D5185m	>125	**95**	<1	0
Tin	ppm	ASTM D5185m	>4	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	151	**125**	200	145
Barium	ppm	ASTM D5185m	0.4	**0**	0	0
Molybdenum	ppm	ASTM D5185m	250	**87**	116	61
Manganese	ppm	ASTM D5185m		**1**	<1	<1
Magnesium	ppm	ASTM D5185m	0	**631**	768	896
Calcium	ppm	ASTM D5185m	2046	**2212**	1824	1725
Phosphorus	ppm	ASTM D5185m	1043	**965**	825	879
Zinc	ppm	ASTM D5185m	943	**1194**	1048	1146
Sulfur	ppm	ASTM D5185m	5012	**3895**	3286	3844

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**6**	5	5
Sodium	ppm	ASTM D5185m		**10**	2	5
Potassium	ppm	ASTM D5185m	>20	**12**	12	5

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	**0.1**	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**11.8**	12.4	12.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**25.2**	25.5	24.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.7**	23.7	22.3
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	**8.1**	8.7	8.2

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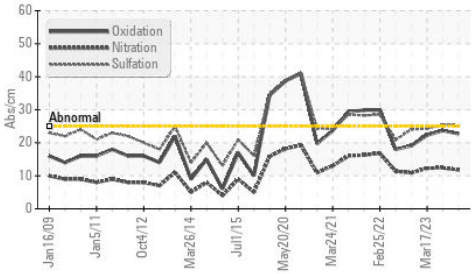
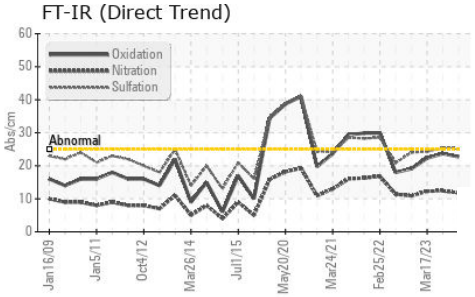
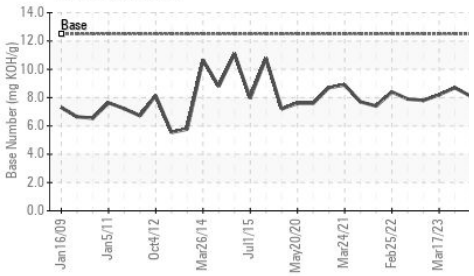
FT-IR (Direct Trend)



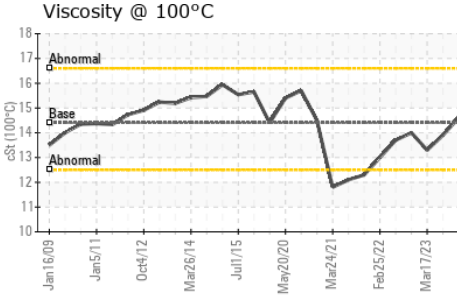
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

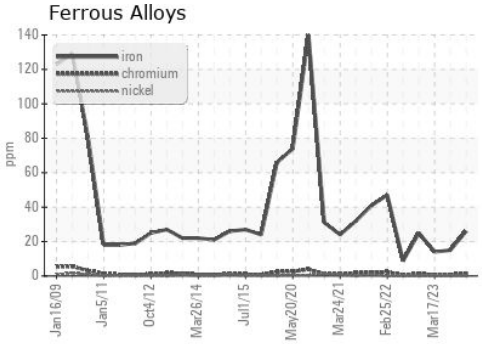


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

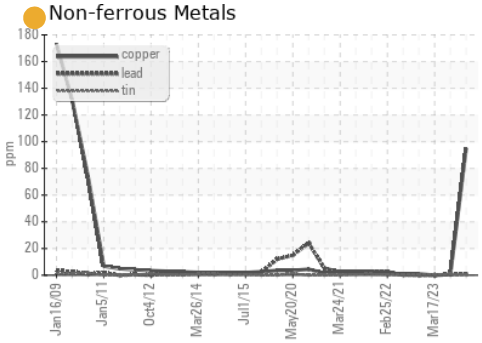
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.6**	13.9	13.3

GRAPHS

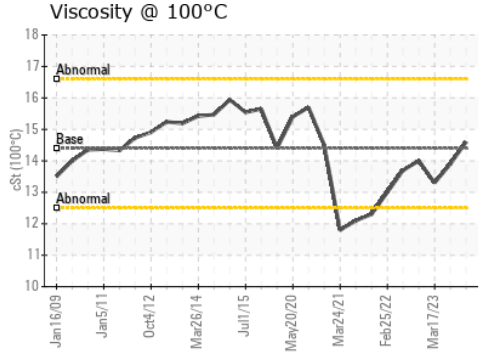
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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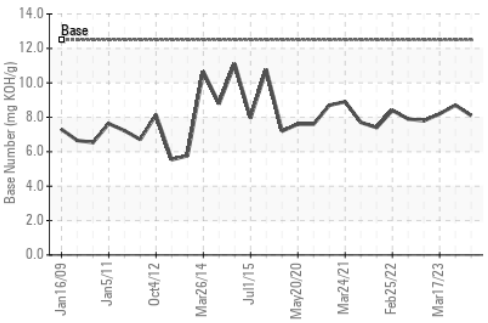

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0748594
Lab Number : 06147155
Unique Number : 10977233
Test Package : FLEET

Received : 12 Apr 2024
Tested : 15 Apr 2024
Diagnosed : 16 Apr 2024 - Sean Felton

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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