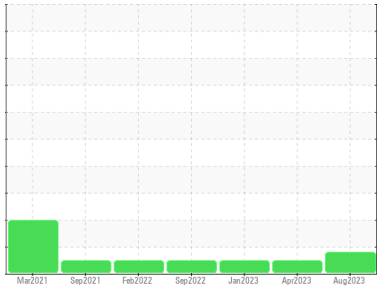
OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
O-4
Component
Diesel Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We recommend that you drain the oil from the component if this has not already been done. Please specify the component make and model with your next sample.

Wear
All component wear rates are normal.

Contamination
Light concentration of carbon/soot present in the oil.

Fluid Condition
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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0819759**	WC0756106	WC0756076
Sample Date		Client Info		**02 Aug 2023**	25 Apr 2023	05 Jan 2023
Machine Age	mls	Client Info		**111825**	102085	97181
Oil Age	mls	Client Info		**7500**	5000	7500
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**84**	25	62
Chromium	ppm	ASTM D5185m	>20	**3**	1	2
Nickel	ppm	ASTM D5185m	>4	**<1**	0	0
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**<1**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	**5**	4	5
Lead	ppm	ASTM D5185m	>40	**10**	0	5
Copper	ppm	ASTM D5185m	>330	**2**	0	3
Tin	ppm	ASTM D5185m	>15	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	151	**234**	314	254
Barium	ppm	ASTM D5185m	0.4	**0**	0	0
Molybdenum	ppm	ASTM D5185m	250	**124**	117	128
Manganese	ppm	ASTM D5185m		**1**	<1	<1
Magnesium	ppm	ASTM D5185m	0	**662**	640	655
Calcium	ppm	ASTM D5185m	2046	**1635**	1492	1636
Phosphorus	ppm	ASTM D5185m	1043	**697**	737	710
Zinc	ppm	ASTM D5185m	943	**853**	864	880
Sulfur	ppm	ASTM D5185m	5012	**2842**	2890	2978

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**10**	7	13
Sodium	ppm	ASTM D5185m		**3**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**2**	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	▲ **3**	1	1.6
Nitration	Abs/cm	*ASTM D7624	>20	**10.1**	7.2	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**27.1**	21.8	24.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**17.3**	15.1	16.9
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	**9.43**	9.66	8.46

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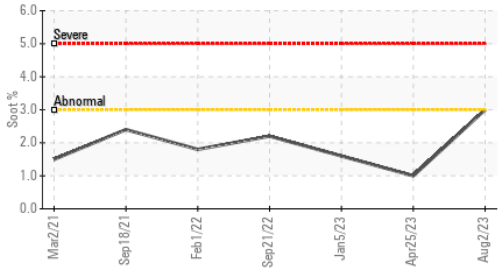
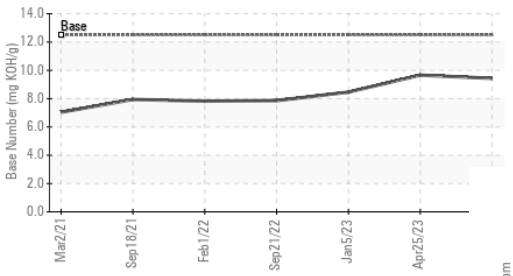
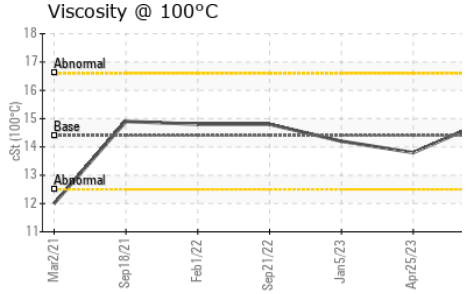
Soot %



Base Number



Viscosity @ 100°C

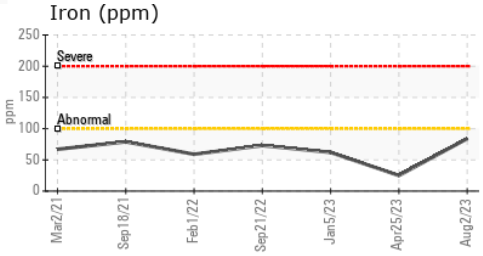


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

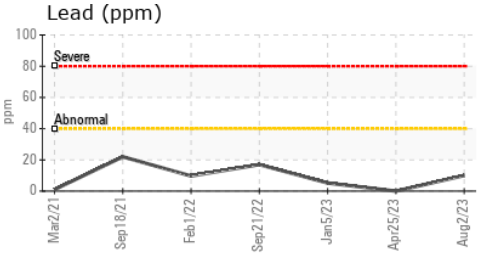
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.9**	13.8	14.2

GRAPHS

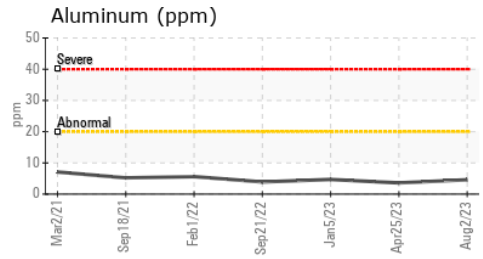
Iron (ppm)



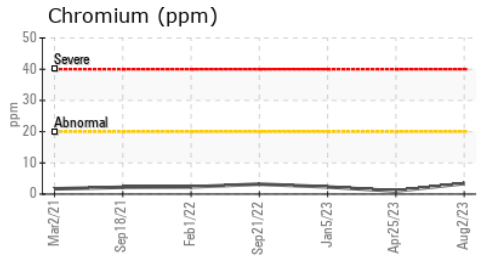
Lead (ppm)



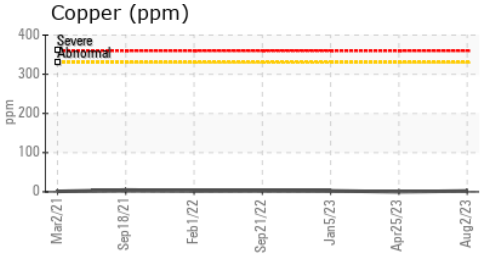
Aluminum (ppm)



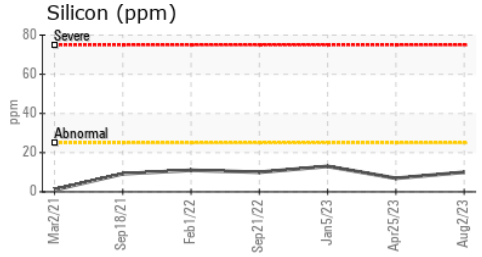
Chromium (ppm)



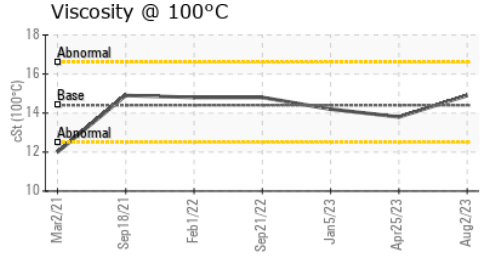
Copper (ppm)



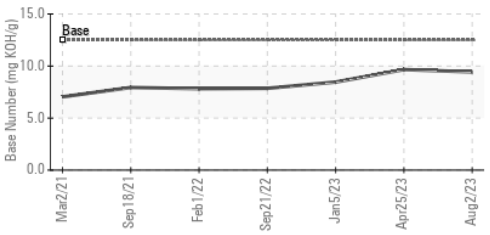
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0819759
Lab Number : 05926839
Unique Number : 10606786
Test Package : MOB 2

Received : 16 Aug 2023
Diagnosed : 18 Aug 2023
Diagnostician : Wes Davis

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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