LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
LIEBHERR A934C 064064-1007
Component
Diesel Engine
Fluid
CHEVRON DELO LE 5W40 (7 GAL)

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. All other component wear rates are normal.

CONTAMINATION

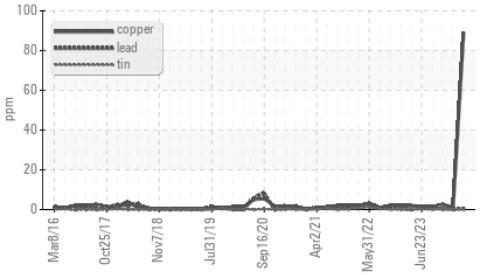
There is no indication of any contamination in the oil.

FLUID CONDITION

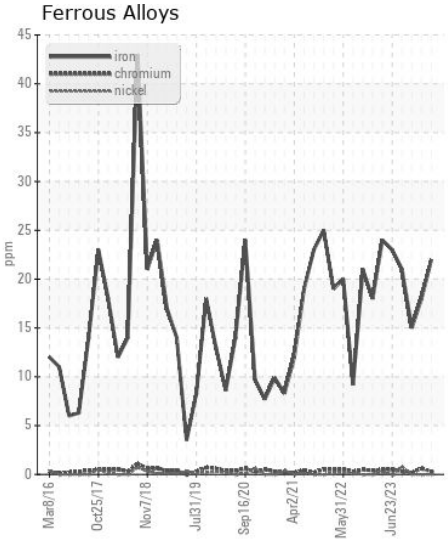
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0268387	LH0258824	LH0272765
Sample Date		Client Info		27 Jun 2024	20 Feb 2024	21 Dec 2023
Machine Age	hrs	Client Info		26934	26421	25949
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ATTENTION	ATTENTION
Iron	ppm	ASTM D5185m	>66	22	18	15
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		59	59	45
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>8	2	1	1
Lead	ppm	ASTM D5185m	>10	<1	<1	<1
Copper	ppm	ASTM D5185m	>74	▲ 89	1	3
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>15	9	10	6
Potassium	ppm	ASTM D5185m	>20	2	2	4
Fuel	%	ASTM D3524	>5	<1.0	<1.0	0.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	2.1	1.3	1.1
Nitration	Abs/cm	*ASTM D7624	>20	10.2	8.2	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.3	23.4	24.3
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		6	3	0
Boron	ppm	ASTM D5185m	66	57	65	58
Barium	ppm	ASTM D5185m		0	0	10
Molybdenum	ppm	ASTM D5185m	70	16	2	3
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m	1230	520	474	320
Calcium	ppm	ASTM D5185m	930	1749	1569	1561
Phosphorus	ppm	ASTM D5185m	1230	999	944	916
Zinc	ppm	ASTM D5185m	1310	1199	1131	982
Sulfur	ppm	ASTM D5185m	3460	4157	3516	3991
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.0	15.1	15.3
Base Number (BN)	mg KOH/g	ASTM D2896		6.4	6.6	6.2
Visc @ 100°C	cSt	ASTM D445	15	● 12.3	▲ 11.6	● 10.3

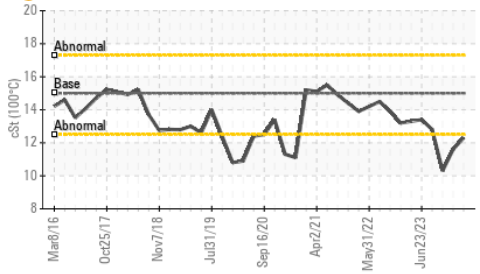
Non-ferrous Metals



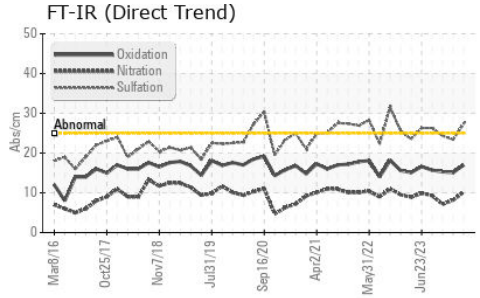
Ferrous Alloys



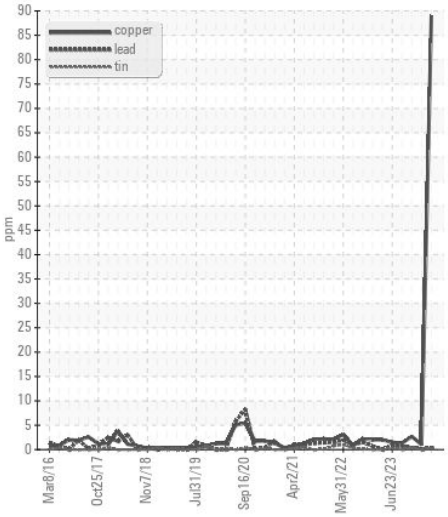
Viscosity @ 100°C



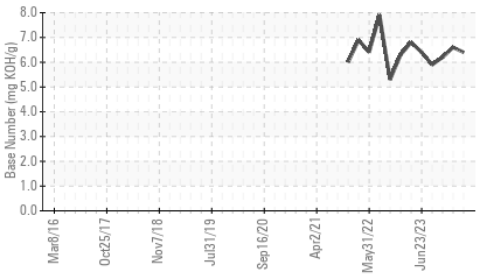
FT-IR (Direct Trend)



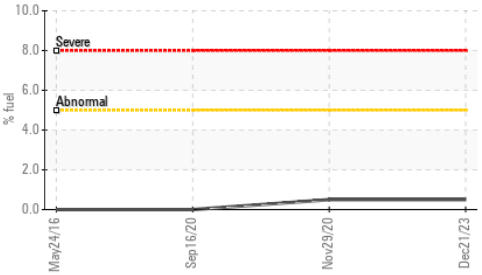
Non-ferrous Metals



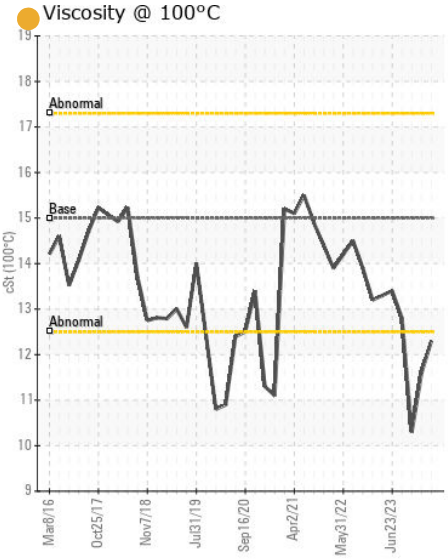
Base Number



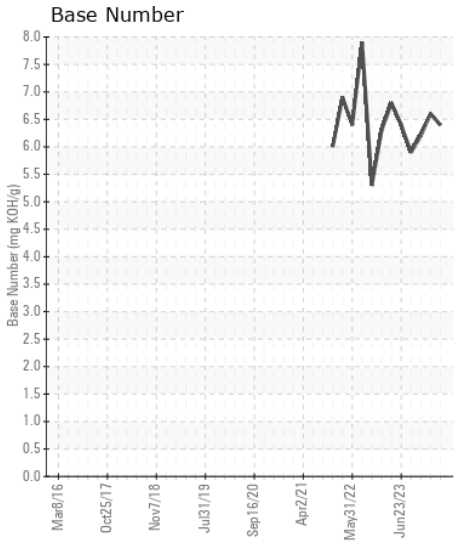
Fuel Dilution



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0268387
Lab Number : 06237303
Unique Number : 11126137
Test Package : CONST (Additional Tests: FuelDilution, TBN)

Received : 15 Jul 2024
Tested : 17 Jul 2024
Diagnosed : 17 Jul 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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