MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
Coopersville CAT 5 CPVM05BE
Component
Biogas Engine
Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (105 GAL)

RECOMMENDATION

We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

WEAR

The tin level is severe.

CONTAMINATION

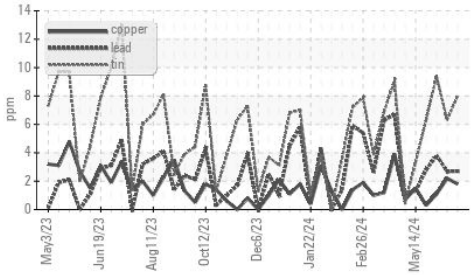
Elemental level of silicon (Si) above normal.

FLUID CONDITION

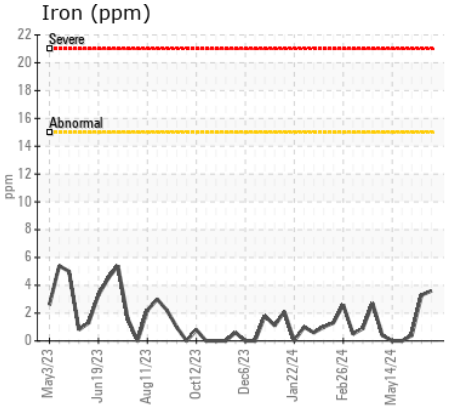
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0871428	WC0871585	WC0871582
Sample Date		Client Info		09 Jul 2024	01 Jul 2024	30 May 2024
Machine Age	hrs	Client Info		18492	18302	17545
Oil Age	hrs	Client Info		611	421	810
Filter Age	hrs	Client Info		611	421	810
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				SEVERE	SEVERE	SEVERE
PQ		ASTM D8184	>21	18	14	---
Iron	ppm	ASTM D5185m	>15	4	3	<1
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m		<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m		<1	<1	0
Aluminum	ppm	ASTM D5185m	>6	2	2	3
Lead	ppm	ASTM D5185m	>9	3	3	4
Copper	ppm	ASTM D5185m	>6	2	2	1
Tin	ppm	ASTM D5185m	>4	▲ 8	▲ 6	▲ 9
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>181	▲ 215	164	▲ 231
Potassium	ppm	ASTM D5185m	>20	2	2	1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>.11	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0	0.1	0
Nitration	Abs/cm	*ASTM D7624		5.2	4.8	6.4
Sulfation	Abs/.1mm	*ASTM D7415		19.6	18.3	21.4
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	>.11	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m	>21	0	0	<1
Boron	ppm	ASTM D5185m		73	90	39
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		8	8	6
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		43	43	16
Calcium	ppm	ASTM D5185m		1716	1636	1839
Phosphorus	ppm	ASTM D5185m		444	427	312
Zinc	ppm	ASTM D5185m		612	587	389
Sulfur	ppm	ASTM D5185m		3280	3373	2414
Oxidation	Abs/.1mm	*ASTM D7414		13.6	12.3	15.3
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	1.03	0.809	1.54
Base Number (BN)	mg KOH/g	ASTM D2896	5.4	4.16	4.87	4.06
Visc @ 100°C	cSt	ASTM D445	13.4	14.6	14.2	14.1

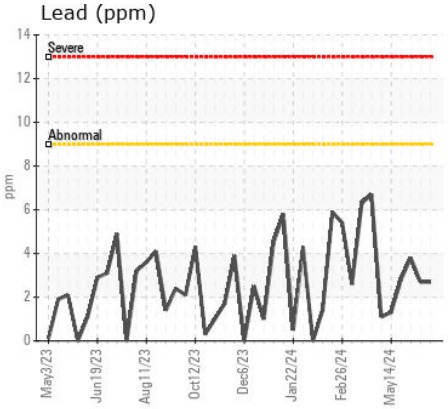
Non-ferrous Metals



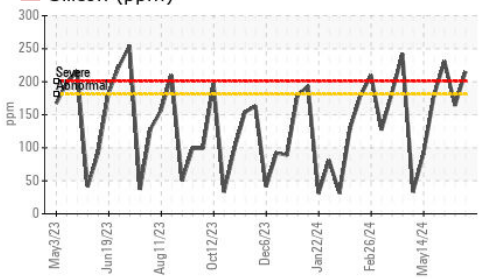
Iron (ppm)



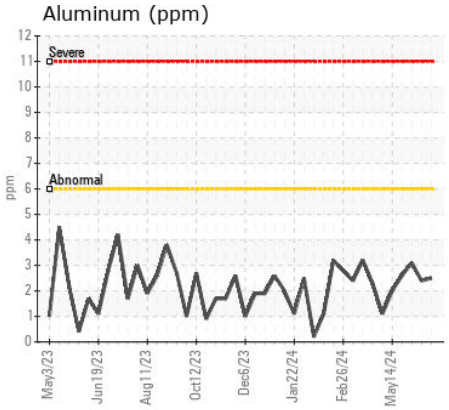
Lead (ppm)



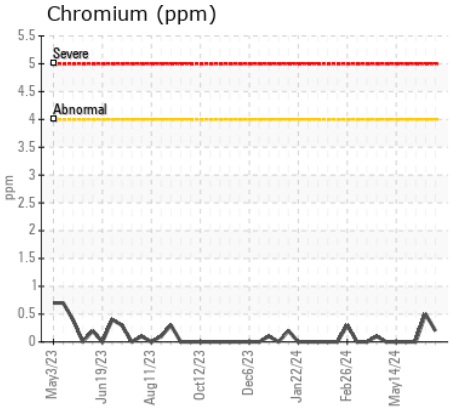
Silicon (ppm)



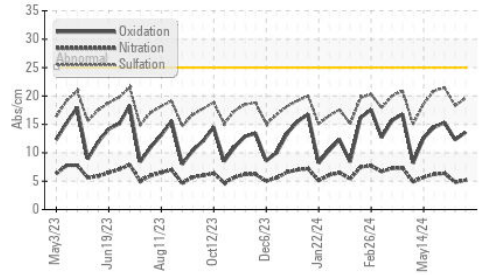
Aluminum (ppm)



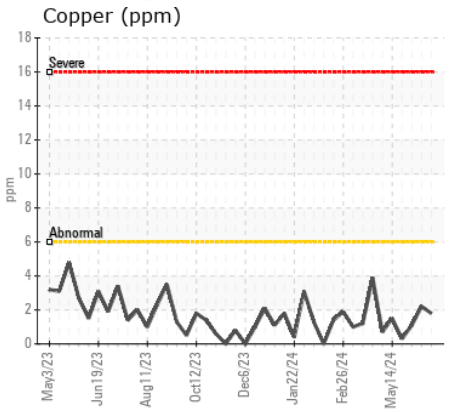
Chromium (ppm)



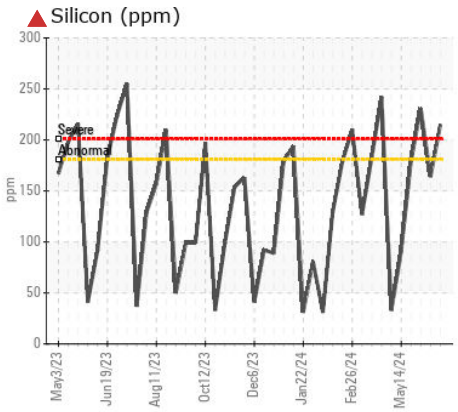
FT-IR (Direct Trend)



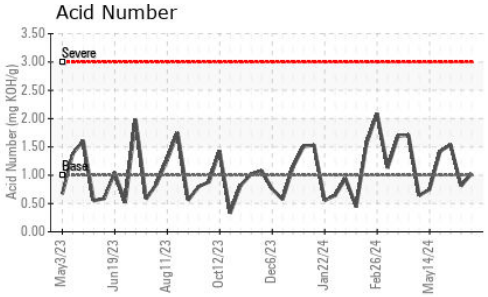
Copper (ppm)



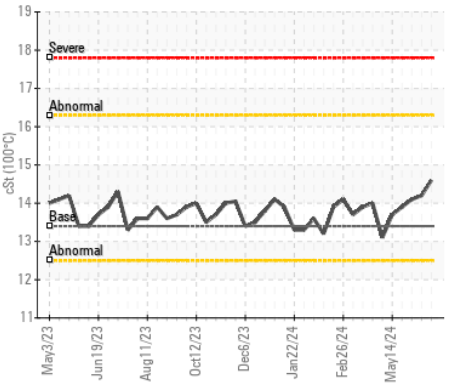
Silicon (ppm)



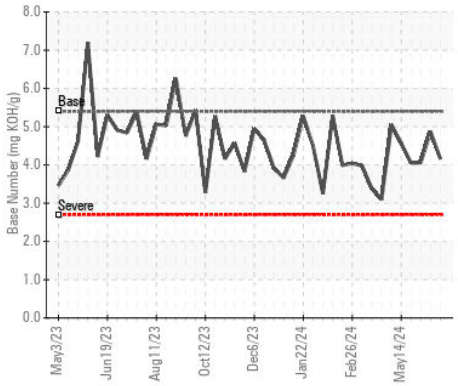
Acid Number



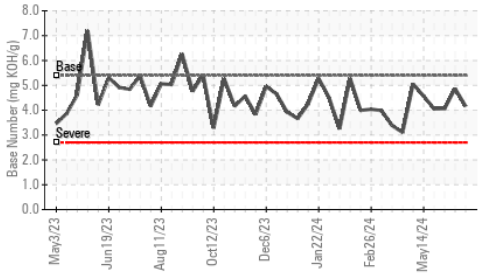
Viscosity @ 100°C



Base Number



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0871428
Lab Number : 06233417
Unique Number : 11116910
Test Package : MOB 2 (Additional Tests: PQ)

Received : 11 Jul 2024
Tested : 12 Jul 2024
Diagnosed : 12 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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