

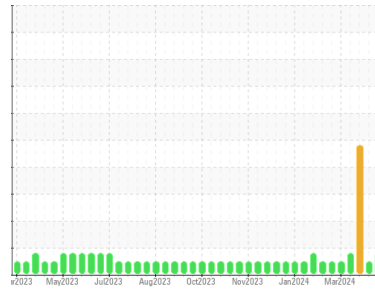


OIL ANALYSIS REPORT



Machine Id
Grand Blanc CAT 2 GBLM02BE
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

Sample Rating Trend



DIAGNOSIS

- Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor.
- Wear**
The tin level is abnormal. All other 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0905755	WC0905739	WC0905736
Sample Date	Client Info		10 Apr 2024	03 Apr 2024	19 Mar 2024
Machine Age	hrs	Client Info	12158	11989	11721
Oil Age	hrs	Client Info	0	0	933
Oil Changed	Client Info		N/A	N/A	Not Changd
Sample Status			ABNORMAL	NORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Water	WC Method	>.11	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >15	5	2	6
Chromium	ppm	ASTM D5185m >4	<1	0	<1
Nickel	ppm	ASTM D5185m	1	0	<1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >6	2	2	3
Lead	ppm	ASTM D5185m >9	6	2	▲ 13
Copper	ppm	ASTM D5185m >6	4	2	5
Tin	ppm	ASTM D5185m >4	▲ 4	1	4
Vanadium	ppm	ASTM D5185m	<1	<1	<1
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	7	7	4
Barium	ppm	ASTM D5185m	0	0	2
Molybdenum	ppm	ASTM D5185m	4	3	3
Manganese	ppm	ASTM D5185m	1	0	<1
Magnesium	ppm	ASTM D5185m	12	10	16
Calcium	ppm	ASTM D5185m	1755	1651	1959
Phosphorus	ppm	ASTM D5185m	295	235	272
Zinc	ppm	ASTM D5185m	338	309	375
Sulfur	ppm	ASTM D5185m	3115	2717	3270

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	150	108	▲ 196
Sodium	ppm	ASTM D5185m >21	0	1	0
Potassium	ppm	ASTM D5185m >20	3	0	3

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0	0.1
Nitration	Abs/cm	*ASTM D7624	5.5	5.3	6.0
Sulfation	Abs/.1mm	*ASTM D7415	20.3	18.9	23.8

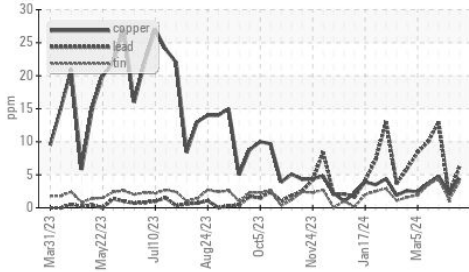
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	11.8	10.4	16.3
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	1.44	0.97	▲ 3.496
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	3.19	3.42	▲ 2.60

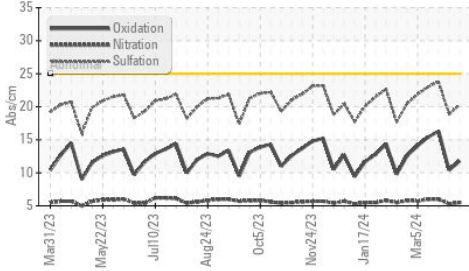


OIL ANALYSIS REPORT

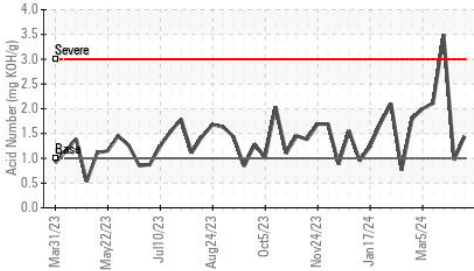
▲ Non-ferrous Metals



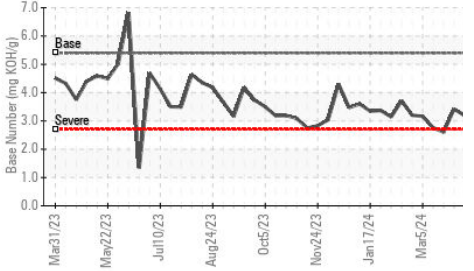
FT-IR (Direct Trend)



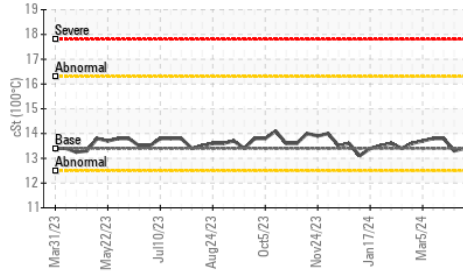
Acid Number



Base Number



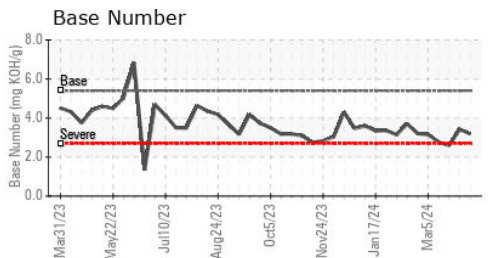
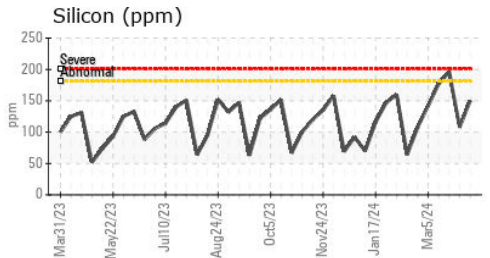
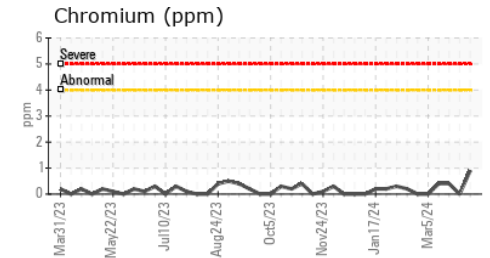
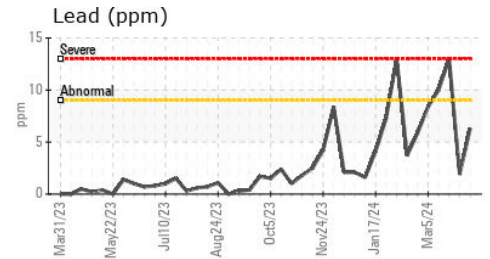
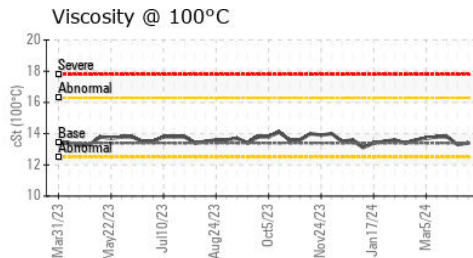
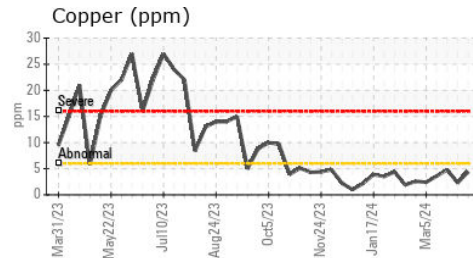
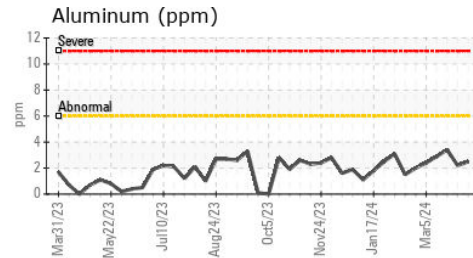
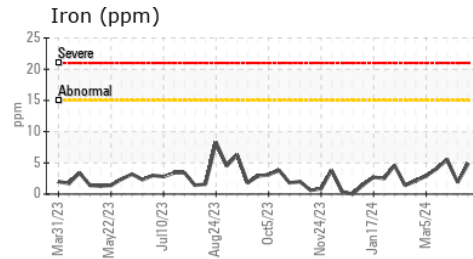
Viscosity @ 100°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>.11	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	13.3	13.8

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0905755

Lab Number : 06146057

Unique Number : 10976135

Test Package : MOB 2

Received : 11 Apr 2024

Tested : 12 Apr 2024

Diagnosed : 15 Apr 2024 - Don Baldrige

EDL NA Recips-Grand Blanc

Grand Blanc Powerstation, 2361 West Grand Blanc Road

Grand Blanc, MI

US 48439

Contact: Tony Saint Marie

tony.saintmarie@edlenergy.com

T:

F:

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)