

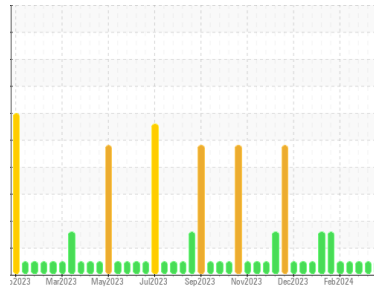


# OIL ANALYSIS REPORT



Machine Id  
**Coopersville CAT 1 CPVM01BE**  
 Component  
**Biogas Engine**  
 Fluid  
**CHEVRON HDAX 9500 GAS ENGINE OIL 40 (105 GAL)**

Sample Rating Trend



**NORMAL**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

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 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			<b>WC0871589</b>	WC0871500	WC0871530
Sample Date	Client Info			<b>29 Mar 2024</b>	11 Mar 2024	22 Feb 2024
Machine Age	hrs	Client Info		<b>16890</b>	16463	16062
Oil Age	hrs	Client Info		<b>540</b>	1	402
Oil Changed	Client Info			<b>Not Chngd</b>	Changed	Not Chngd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>4.0		<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>.11		<b>NEG</b>	NEG	NEG
Glycol	WC Method			<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	<b>0</b>	<1	<1
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m		<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>6	<b>1</b>	2	2
Lead	ppm	ASTM D5185m	>9	<b>0</b>	<1	3
Copper	ppm	ASTM D5185m	>6	<b>&lt;1</b>	<1	1
Tin	ppm	ASTM D5185m	>4	<b>3</b>	<1	4
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>2</b>	3	2
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>3</b>	3	2
Manganese	ppm	ASTM D5185m		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>6</b>	7	10
Calcium	ppm	ASTM D5185m		<b>1742</b>	1587	1806
Phosphorus	ppm	ASTM D5185m		<b>245</b>	258	268
Zinc	ppm	ASTM D5185m		<b>315</b>	308	339
Sulfur	ppm	ASTM D5185m		<b>1974</b>	1794	1682

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>181	<b>116</b>	33	119
Sodium	ppm	ASTM D5185m	>21	<b>2</b>	0	<1
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	3	<1

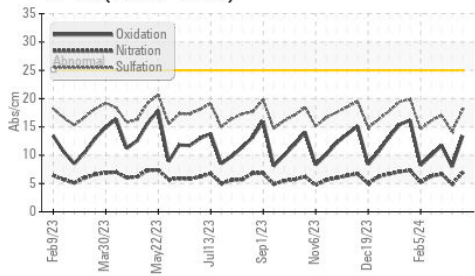
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		<b>0.1</b>	0	0
Nitration	Abs/cm	*ASTM D7624		<b>6.9</b>	4.9	6.7
Sulfation	Abs/.1mm	*ASTM D7415		<b>18.0</b>	14.2	17.0

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		<b>13.4</b>	8.0	11.7
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	<b>1.22</b>	0.52	0.98
Base Number (BN)	mg KOH/g	ASTM D2896	5.4	<b>3.97</b>	4.83	4.20

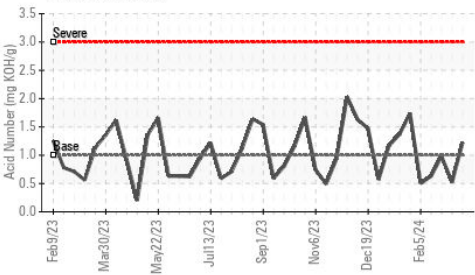


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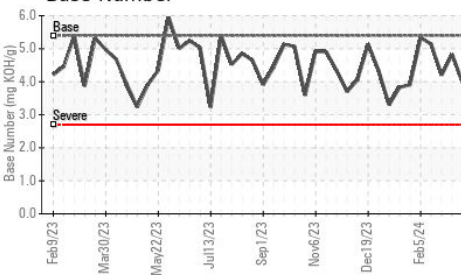
FT-IR (Direct Trend)



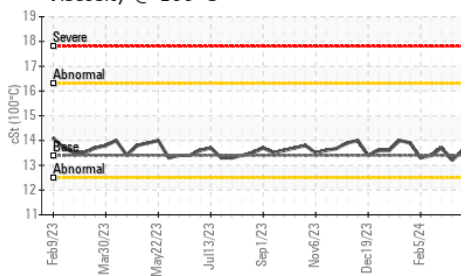
Acid Number



Base Number



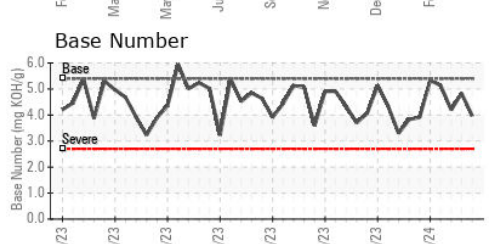
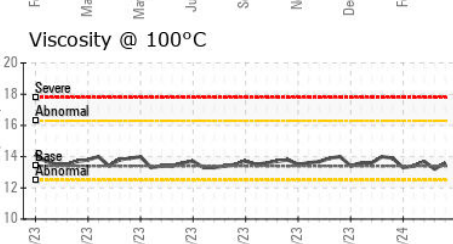
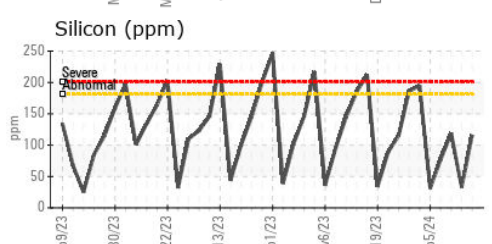
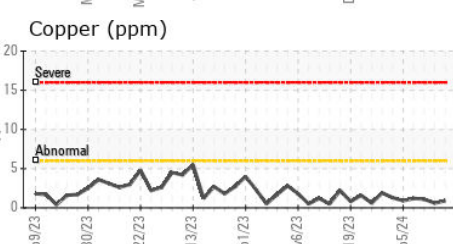
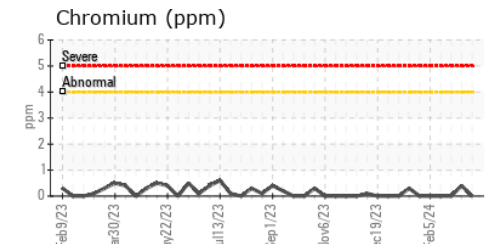
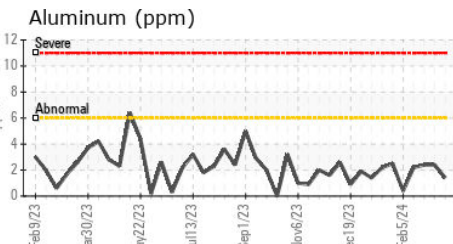
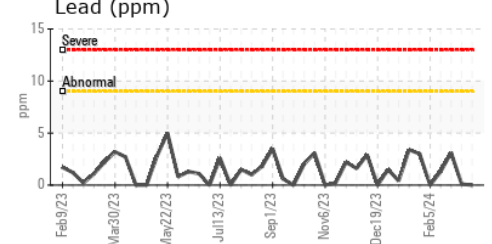
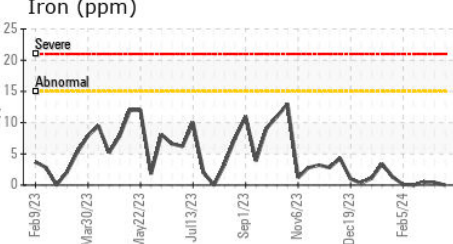
Viscosity @ 100°C



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	13.6	13.2

**GRAPHS**



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0871589  
**Lab Number** : 06138723  
**Unique Number** : 10963531  
**Test Package** : MOB 2  
**Received** : 04 Apr 2024  
**Tested** : 05 Apr 2024  
**Diagnosed** : 06 Apr 2024 - Don Baldrige

**EDL NA Recips-Coopersville**  
 Coopersville Powerstation, 15362 68th Avenue  
 Coopersville, MI  
 US 49404  
 Contact: Daniel Young  
 daniel.young@edlenergy.com

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)