



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Machine Id
WVTM02BE

Component
Biogas Engine

Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

RECOMMENDATION

We recommend that you drain the oil and perform a filter service on this component if not already done. Resample at the next service interval to monitor. (Customer Sample Comment: Oil sample only)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0785395	WC0785349	WC0785353
Sample Date		Client Info		12 Feb 2024	05 Feb 2024	29 Jan 2024
Machine Age	hrs	Client Info		43492	43397	43234
Oil Age	hrs	Client Info		564	469	306
Filter Age	hrs	Client Info		564	469	306
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Not Changed	Not Changed	Not Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>15	5	3	1
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	2	2	2
Lead	ppm	ASTM D5185m	>9	3	3	3
Copper	ppm	ASTM D5185m	>6	1	1	1
Tin	ppm	ASTM D5185m	>4	3	3	3
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

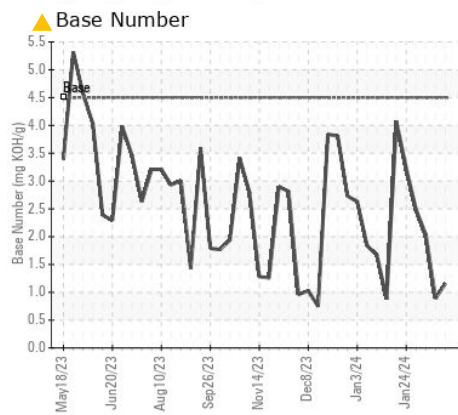
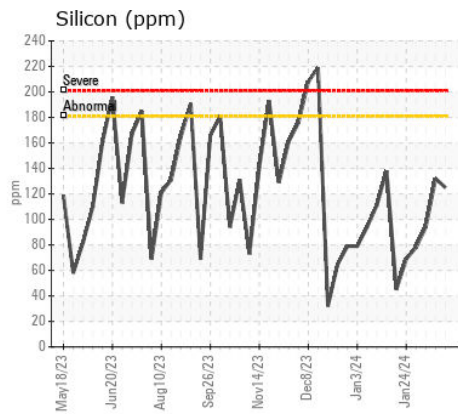
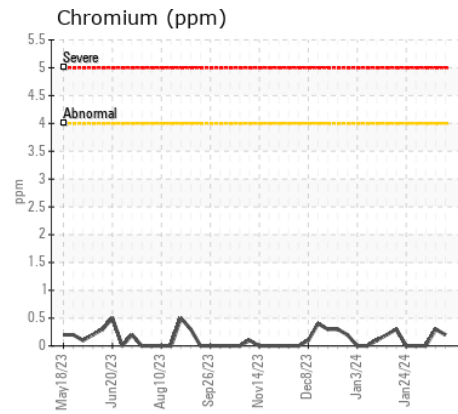
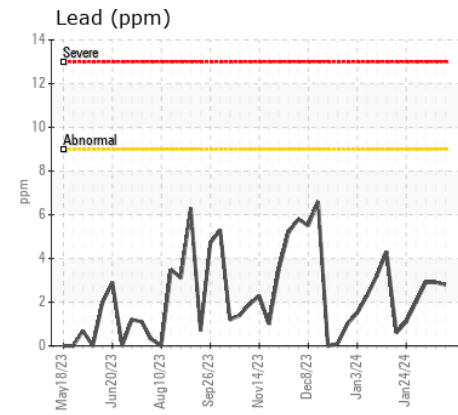
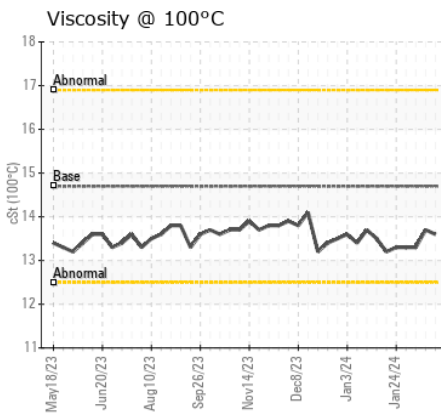
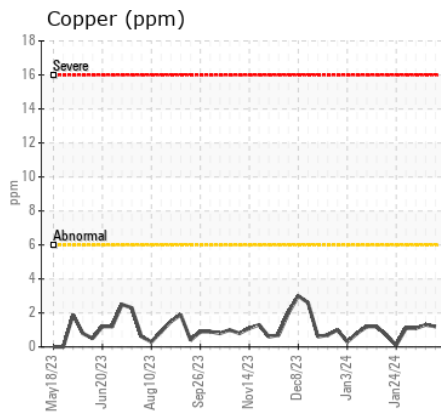
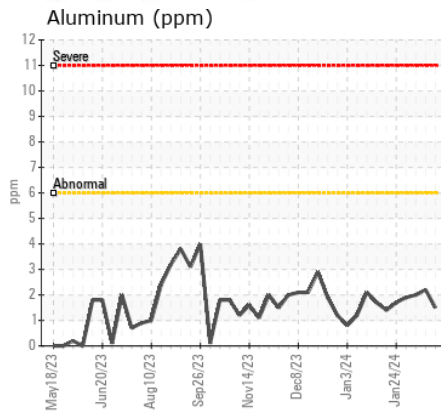
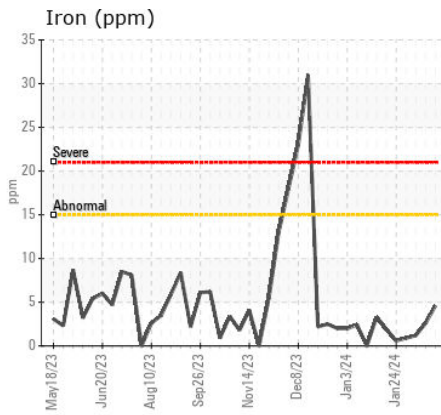
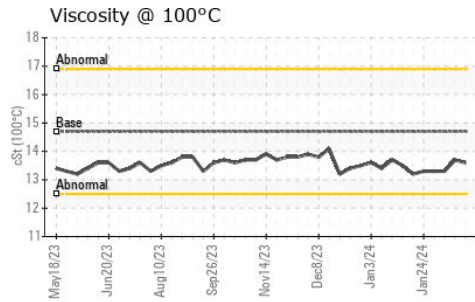
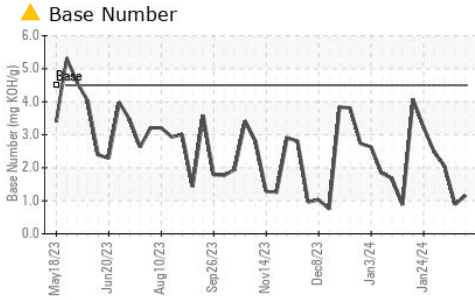
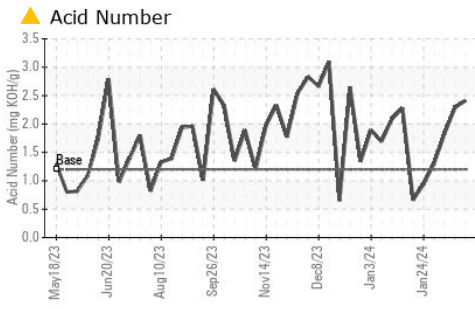
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>181	125	132	94
Potassium	ppm	ASTM D5185m	>20	0	<1	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0	0
Nitration	Abs/cm	*ASTM D7624	>20	5.1	5.0	5.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.0	26.2	23.3
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	>0.1	NEG	NEG	NEG

FLUID CONDITION

The AN level is above the recommended limit. The BN level is low.

Sodium	ppm	ASTM D5185m		0	0	1
Boron	ppm	ASTM D5185m		<1	1	<1
Barium	ppm	ASTM D5185m		0	1	0
Molybdenum	ppm	ASTM D5185m		2	<1	<1
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		6	5	9
Calcium	ppm	ASTM D5185m		1703	1681	1680
Phosphorus	ppm	ASTM D5185m		237	272	267
Zinc	ppm	ASTM D5185m		325	320	319
Sulfur	ppm	ASTM D5185m		3353	3520	3445
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	14.8	12.7
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	▲ 2.41	▲ 2.29	1.83
Base Number (BN)	mg KOH/g	ASTM D2896	4.5	▲ 1.16	▲ 0.89	2.04
Visc @ 100°C	cSt	ASTM D445	14.7	13.6	13.7	13.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0785395
Lab Number : 06089014
Unique Number : 10876459
Test Package : MOB 2

Received : 14 Feb 2024
Tested : 15 Feb 2024
Diagnosed : 15 Feb 2024 - Sean Felton

EDL NA Recips-Watervliet
 Watervliet Powerstation, 3563 Hennessey Road
 Watervliet, MI
 US 49098

Contact: Scott Eastman
 scott.eastman@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)

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