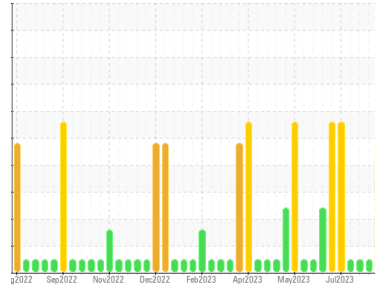




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
Coopersville CAT 5 CPVM05BE
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

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.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0819474	WC0819453	WC0819446
Sample Date	Client Info		23 Aug 2023	11 Aug 2023	03 Aug 2023
Machine Age	hrs	Client Info	11054	10766	10574
Oil Age	hrs	Client Info	778	490	298
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			SEVERE	NORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>15	3	2	0
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	<1
Aluminum	ppm	ASTM D5185m	>6	3	2	3
Lead	ppm	ASTM D5185m	>9	4	4	3
Copper	ppm	ASTM D5185m	>14	2	1	2
Tin	ppm	ASTM D5185m	>4	8	7	6
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		0	0	1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	3	2
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		12	13	12
Calcium	ppm	ASTM D5185m		1863	1890	1929
Phosphorus	ppm	ASTM D5185m		264	275	270
Zinc	ppm	ASTM D5185m		340	333	339
Sulfur	ppm	ASTM D5185m		2037	2087	1949

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	210	157	129
Sodium	ppm	ASTM D5185m		0	0	0
Potassium	ppm	ASTM D5185m	>20	2	0	<1

INFRA-RED

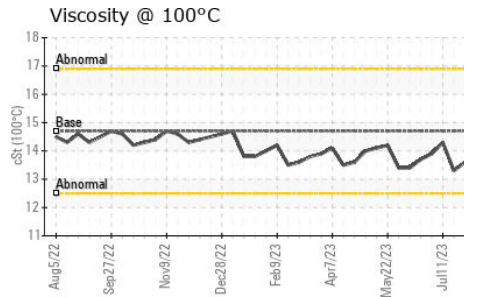
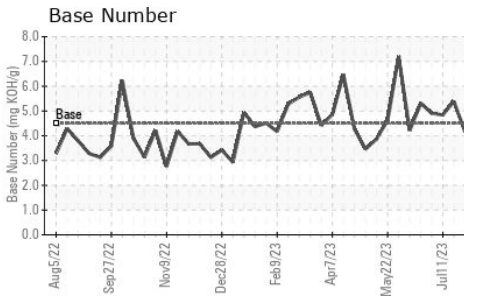
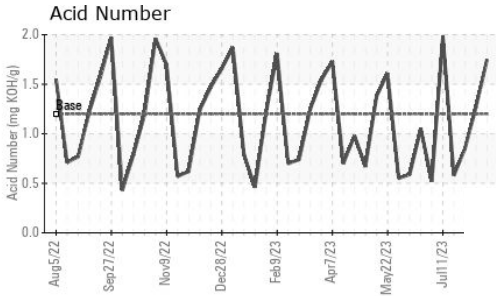
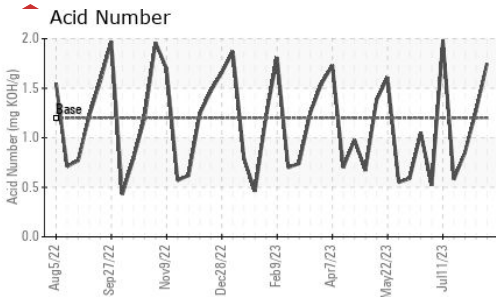
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0.1	0	0
Nitration	Abs/cm	*ASTM D7624	>20	7.0	6.5	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	18.2	17.1

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.6	13.1	11.0
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	1.75	1.27	0.85
Base Number (BN)	mg KOH/g	ASTM D2896	4.5	5.03	5.06	4.16



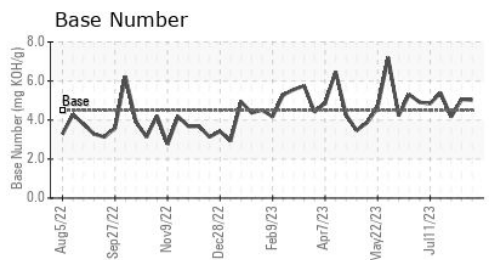
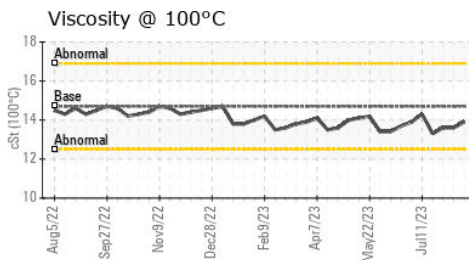
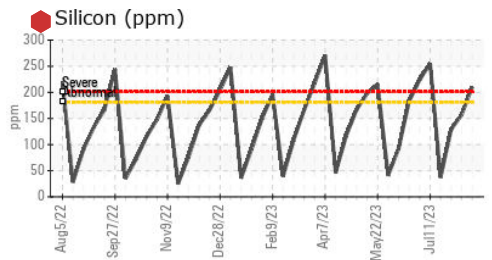
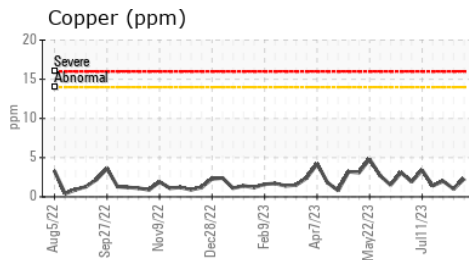
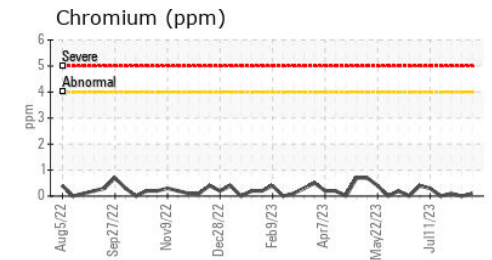
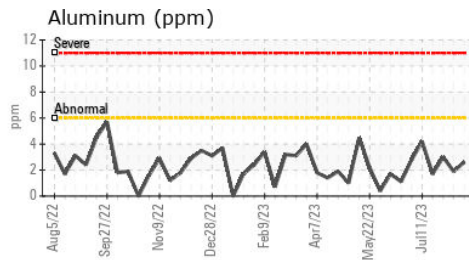
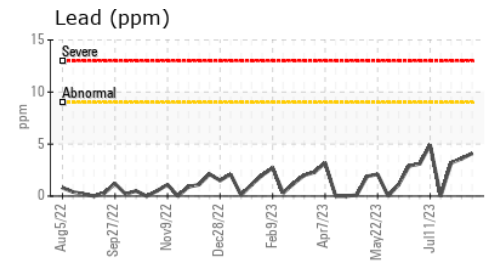
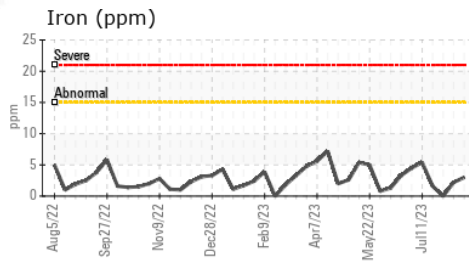
OIL ANALYSIS REPORT



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	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.7	13.9	13.6

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0819474 Received : 25 Aug 2023
 Lab Number : 05934959 Diagnosed : 28 Aug 2023
 Unique Number : 10620230 Diagnostician : Don Baldrige
 Test Package : MOB 2

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)

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