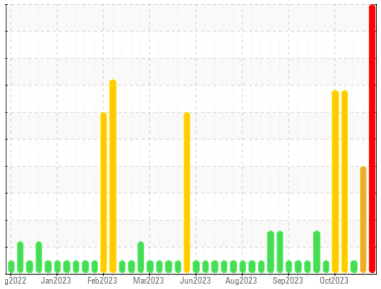
OIL ANALYSIS REPORT

Machine Id
Byron Center CAT 1 BYCM01BE
Component
Biogas Engine
Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Wear
The iron 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0877097**	WC0877094	WC0640309
Sample Date		Client Info		**21 Nov 2023**	09 Nov 2023	30 Oct 2023
Machine Age	hrs	Client Info		**83958**	83675	83346
Oil Age	hrs	Client Info		**792**	504	288
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	**21**	14	8
Chromium	ppm	ASTM D5185m	>4	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m	>5	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>6	**2**	2	2
Lead	ppm	ASTM D5185m	>9	**<1**	<1	0
Copper	ppm	ASTM D5185m	>6	**<1**	1	<1
Tin	ppm	ASTM D5185m	>4	**5**	3	3
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	<1

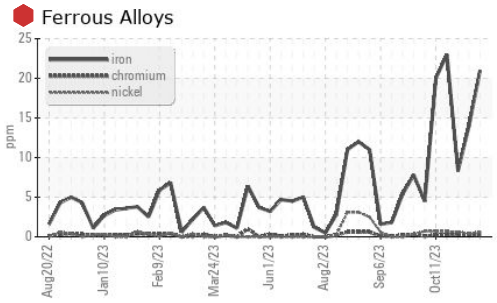
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**<1**	<1	2
Barium	ppm	ASTM D5185m		**0**	6	<1
Molybdenum	ppm	ASTM D5185m		**2**	4	5
Manganese	ppm	ASTM D5185m		**<1**	<1	0
Magnesium	ppm	ASTM D5185m		**17**	21	27
Calcium	ppm	ASTM D5185m		**1929**	1837	1788
Phosphorus	ppm	ASTM D5185m		**307**	317	296
Zinc	ppm	ASTM D5185m		**344**	334	361
Sulfur	ppm	ASTM D5185m		**3388**	3879	3715

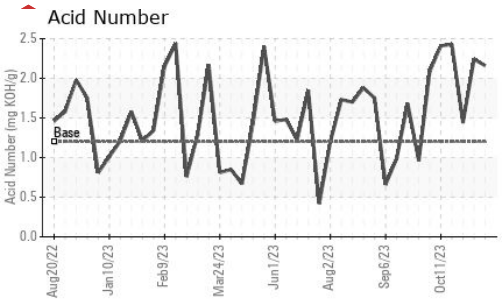
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>181	**214**	▲ 191	135
Sodium	ppm	ASTM D5185m		**2**	0	1
Potassium	ppm	ASTM D5185m	>20	**2**	2	3

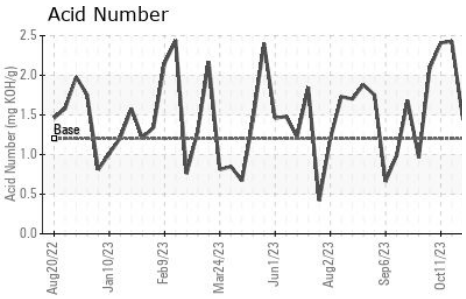
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	**5.9**	5.6	5.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**30.1**	27.9	24.0

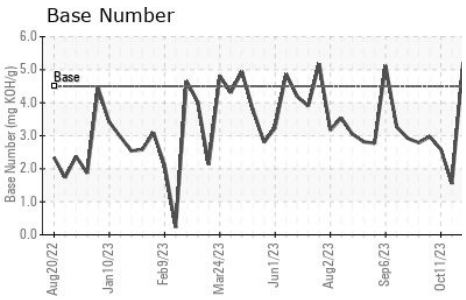
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.8**	15.8	13.2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	**2.16**	▲ 2.24	1.44
Base Number (BN)	mg KOH/g	ASTM D2896	4.5	**2.84**	▲ 1.81	5.20

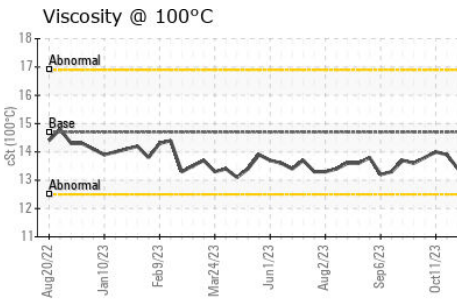
OIL ANALYSIS REPORT







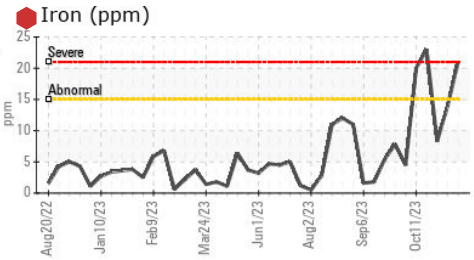


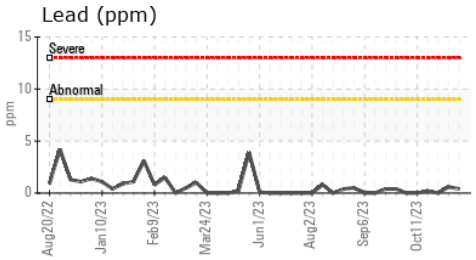


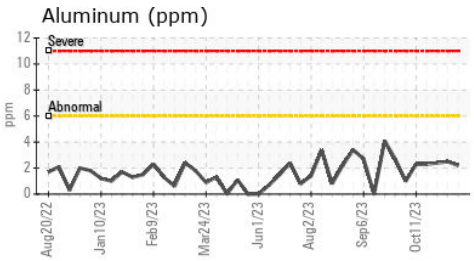
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

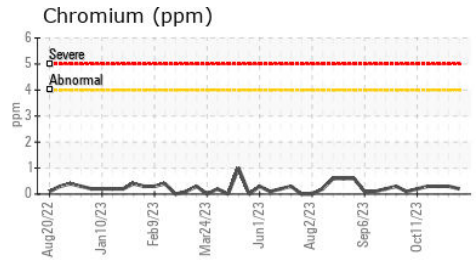
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.7	**13.8**	13.7	13.4

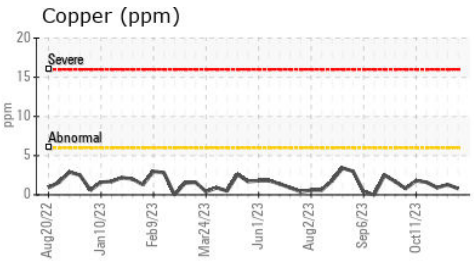
GRAPHS

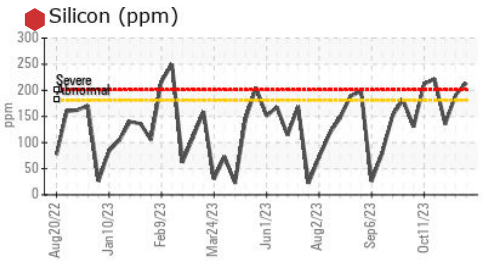


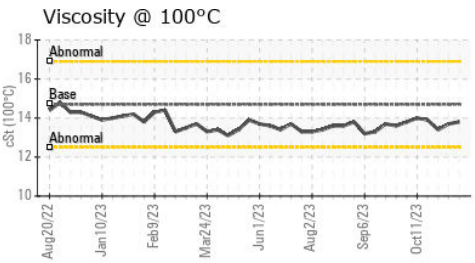


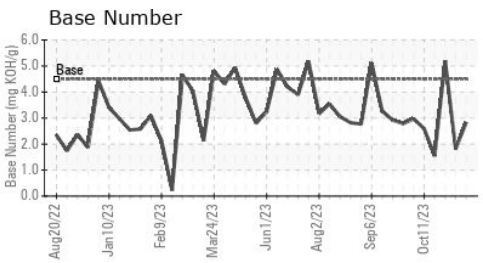












Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: WC0877097	**Received**	: 24 Nov 2023
Lab Number	: 06016652	**Diagnosed**	: 28 Nov 2023
Unique Number	: 10755796	**Diagnostician**	: Jonathan Hester
Test Package	: MOB 2		

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)

EDL NA Recips-Byron Center
Byron Center Powerstation, 10310 South Kent Road
Byron Center, MI
US 49315
Contact: Jake Ripke
Jake.Ripke@edlenergy.com
T:
F:

Report Id: EDLBYR [WUSCAR] 06016652 (Generated: 11/29/2023 20:34:51) Rev: 1

Submitted By: Dave Baker