

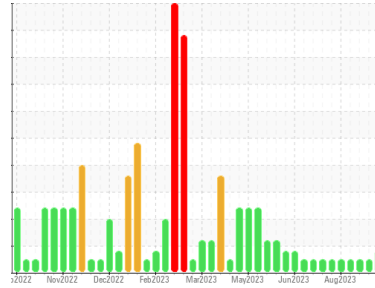


OIL ANALYSIS REPORT



Machine Id
Grand Blanc CAT 1 GBLM01BE
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

Sample Rating Trend



WEAR



DIAGNOSIS

▲ Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: 200hr oil sample)

▲ Wear

The iron 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		WC0824973	WC0825029	WC0825024
Sample Date	Client Info		22 Sep 2023	13 Sep 2023	08 Sep 2023
Machine Age	hrs	Client Info	81598	81372	81295
Oil Age	hrs	Client Info	208	937	830
Oil Changed	Client Info		Changed	Not Changd	Not Changd
Sample Status			ABNORMAL	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	▲ 42	5	4
Chromium	ppm	ASTM D5185m >4	0	<1	<1
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >5	0	0	0
Aluminum	ppm	ASTM D5185m >6	6	<1	<1
Lead	ppm	ASTM D5185m >9	<1	<1	0
Copper	ppm	ASTM D5185m >14	<1	1	<1
Tin	ppm	ASTM D5185m >4	<1	1	<1
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	30	5	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	6	3	<1
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m	35	11	13
Calcium	ppm	ASTM D5185m	1825	1974	1908
Phosphorus	ppm	ASTM D5185m	345	303	288
Zinc	ppm	ASTM D5185m	401	358	346
Sulfur	ppm	ASTM D5185m	3303	3266	3215

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	70	98	92
Sodium	ppm	ASTM D5185m	<1	1	<1
Potassium	ppm	ASTM D5185m >20	0	2	0

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	5.5	6.5	6.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.7	21.6	20.4

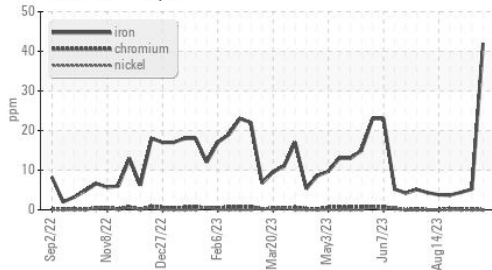
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	11.4	13.9	12.9
Acid Number (AN)	mg KOH/g	ASTM D8045 1.2	1.06	1.56	1.62
Base Number (BN)	mg KOH/g	ASTM D2896 4.5	4.27	2.78	2.93



OIL ANALYSIS REPORT

▲ Ferrous Alloys

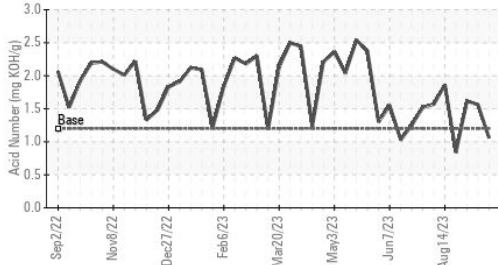


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

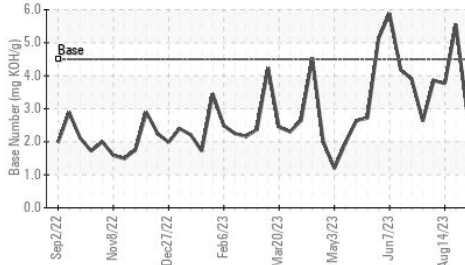
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.7	13.7	13.8

GRAPHS

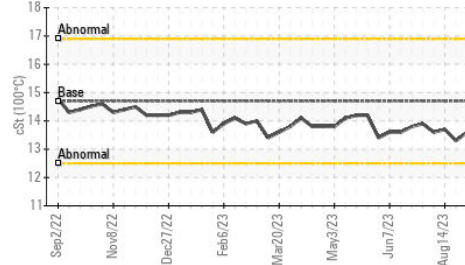
Acid Number



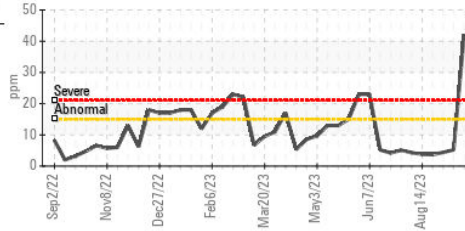
Base Number



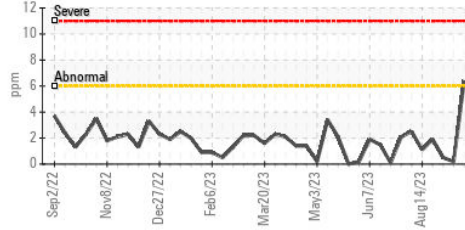
Viscosity @ 100°C



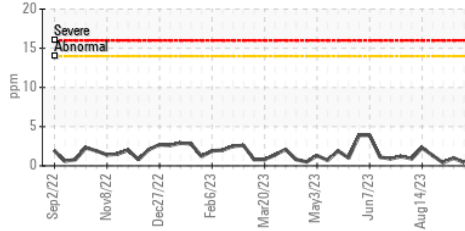
▲ Iron (ppm)



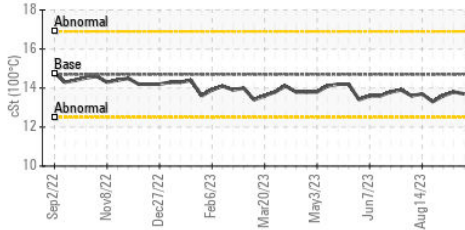
Aluminum (ppm)



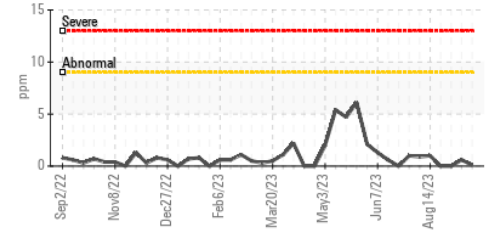
Copper (ppm)



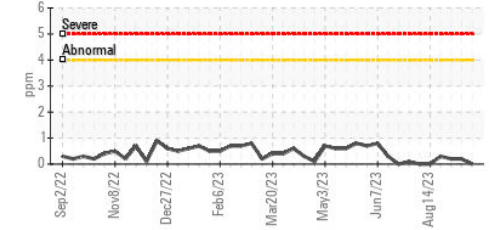
Viscosity @ 100°C



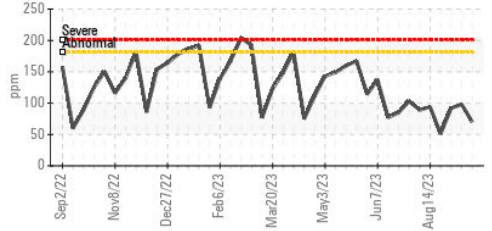
Lead (ppm)



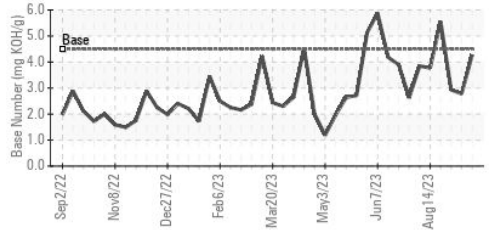
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0824973 **Received** : 29 Sep 2023
Lab Number : 05965521 **Diagnosed** : 02 Oct 2023
Unique Number : 10672072 **Diagnostician** : Don Baldrige
Test Package : MOB 2

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

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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