

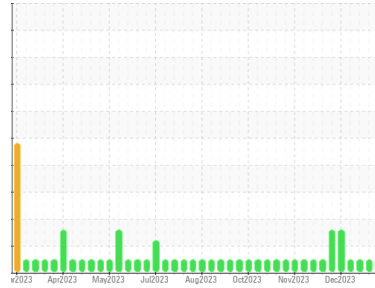


OIL ANALYSIS REPORT



Machine Id
HANM04BE (S/N 4EK00413)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX LFG SAE 40 (--- 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		WC0851242	WC0851235	WC0851272
Sample Date	Client Info		12 Jan 2024	05 Jan 2024	28 Dec 2023
Machine Age	hrs	Client Info	72135	71974	71777
Oil Age	hrs	Client Info	713	552	355
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			NORMAL	NORMAL	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	0	2	1
Chromium	ppm	ASTM D5185m >4	0	0	0
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m	<1	0	<1
Silver	ppm	ASTM D5185m >5	0	0	0
Aluminum	ppm	ASTM D5185m >6	2	2	2
Lead	ppm	ASTM D5185m >9	0	<1	<1
Copper	ppm	ASTM D5185m >14	2	<1	2
Tin	ppm	ASTM D5185m >4	5	4	4
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	5	6
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	3	3	2
Manganese	ppm	ASTM D5185m	<1	0	<1
Magnesium	ppm	ASTM D5185m	32	34	36
Calcium	ppm	ASTM D5185m	1978	1823	1812
Phosphorus	ppm	ASTM D5185m 270	319	317	304
Zinc	ppm	ASTM D5185m 310	410	388	372
Sulfur	ppm	ASTM D5185m	2268	2197	2103

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	153	127	102
Sodium	ppm	ASTM D5185m	0	0	2
Potassium	ppm	ASTM D5185m >20	0	0	<1

INFRA-RED

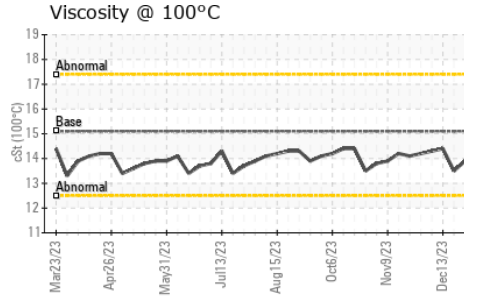
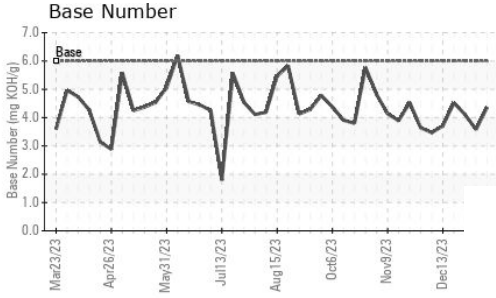
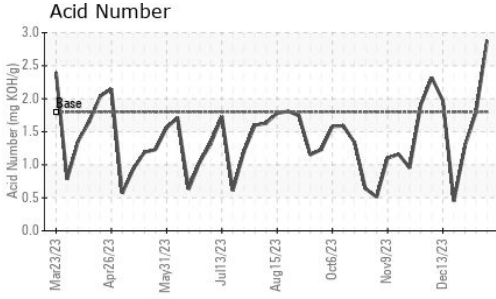
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0	0
Nitration	Abs/cm	*ASTM D7624 >20	7.6	7.5	6.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	21.9	21.5	19.3

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	18.5	17.6	14.6
Acid Number (AN)	mg KOH/g	ASTM D8045 1.8	2.88	1.79	1.29
Base Number (BN)	mg KOH/g	ASTM D2896 6.0	4.36	3.58	4.11



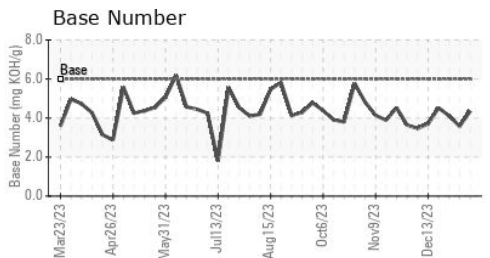
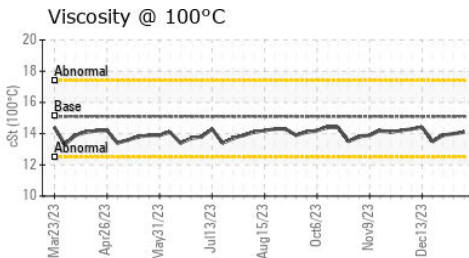
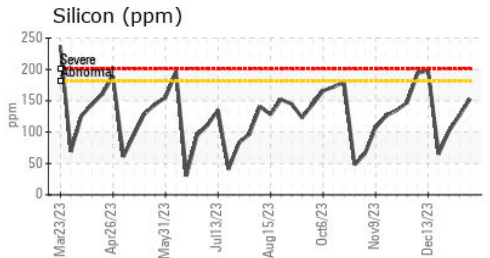
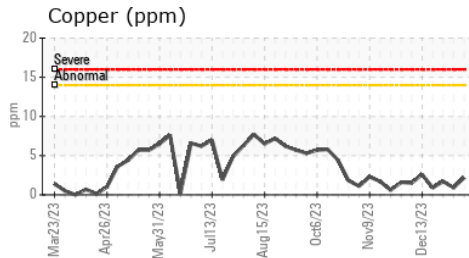
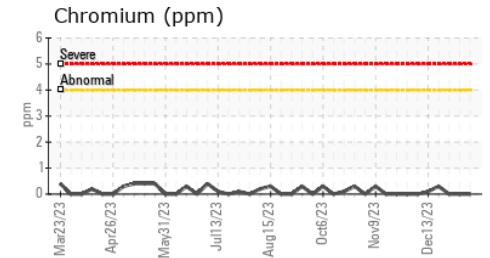
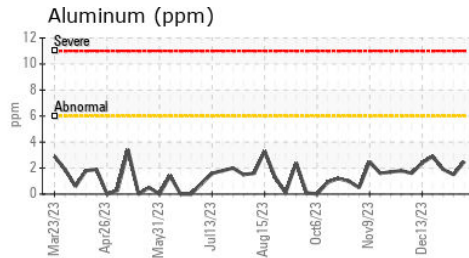
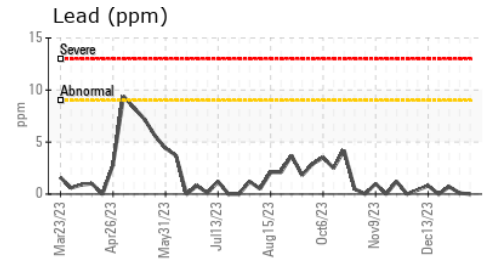
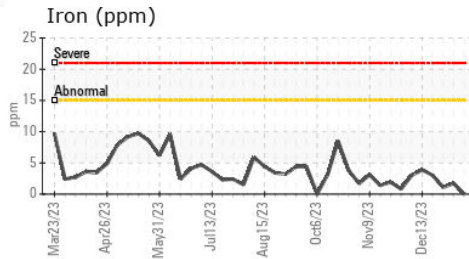
OIL ANALYSIS REPORT



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	15.1	14.1	14.0

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0851242
 Lab Number : 06062163
 Unique Number : 10833545
 Test Package : MOB 2
 Recieved : 16 Jan 2024
 Diagnosed : 18 Jan 2024
 Diagnostician : Don Baldrige

EDL NA Recips-Hancock County
 HANCOCK COUNTY POWER STATION, 3574 TOWNSHIP ROAD 142
 FINDLAY, OH
 US 45840
 Contact: TIM CUSICK
 tim.cusick@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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