

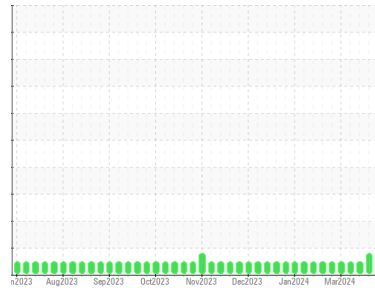


OIL ANALYSIS REPORT



Machine Id
Hancock CAT 3 (S/N 3RC00176)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (95 GAL)

Sample Rating Trend



WEAR



DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

▲ Wear

The tin 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		WC0898111	WC0898121	WC0898126
Sample Date	Client Info		03 Apr 2024	29 Mar 2024	19 Mar 2024
Machine Age	hrs	Client Info	74711	74591	74351
Oil Age	hrs	Client Info	784	664	424
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			ABNORMAL	ABNORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Water	WC Method	>.11	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

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

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	11	9	6
Barium	ppm	ASTM D5185m	0	0	1
Molybdenum	ppm	ASTM D5185m	3	0	2
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	17	7	11
Calcium	ppm	ASTM D5185m	1918	1956	1966
Phosphorus	ppm	ASTM D5185m	304	305	283
Zinc	ppm	ASTM D5185m	381	371	373
Sulfur	ppm	ASTM D5185m	3133	3039	2719

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	123	125	108
Sodium	ppm	ASTM D5185m >21	1	2	0
Potassium	ppm	ASTM D5185m >20	<1	<1	3

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	7.7	7.6	7.1
Sulfation	Abs/.1mm	*ASTM D7415	23.1	22.6	21.0

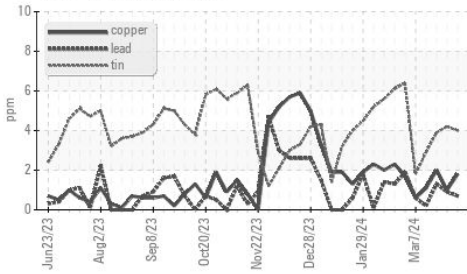
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	19.7	19.1	16.7
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	1.93	2.04	1.80
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	3.20	3.21	3.60

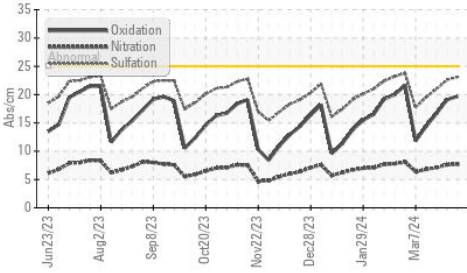


OIL ANALYSIS REPORT

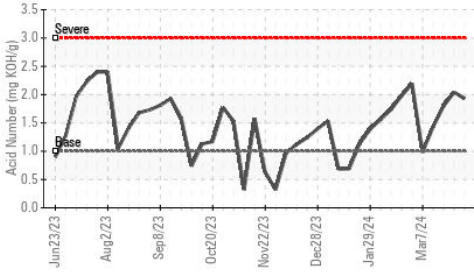
▲ Non-ferrous Metals



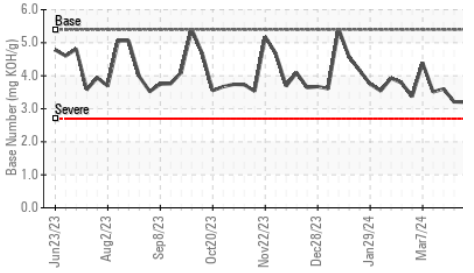
FT-IR (Direct Trend)



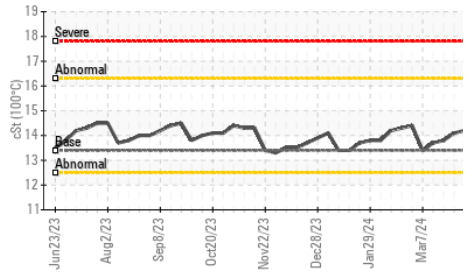
Acid Number



Base Number



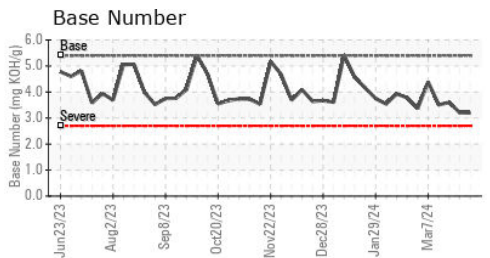
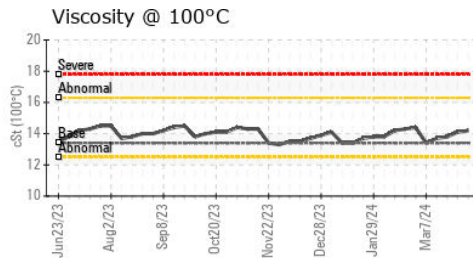
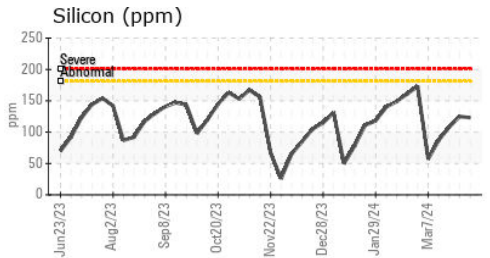
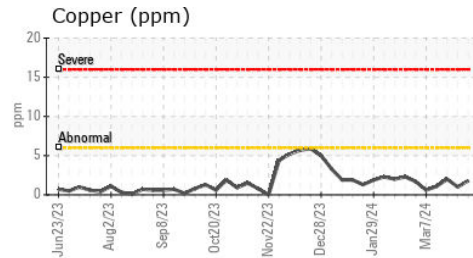
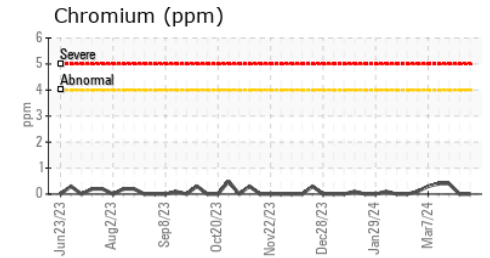
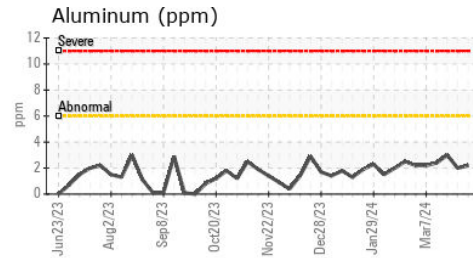
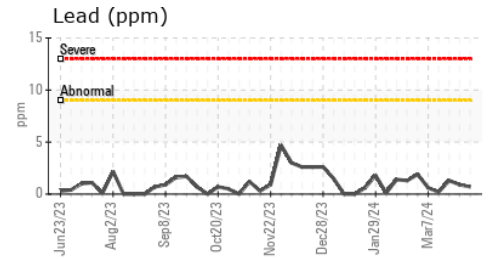
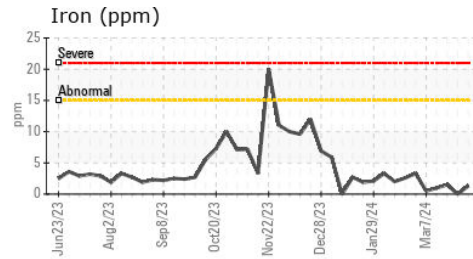
Viscosity @ 100°C



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	>.11	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	13.4	14.2	14.1	13.8

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0898111
Lab Number : 06140094
Unique Number : 10964902
Test Package : MOB 2

Received : 05 Apr 2024
Tested : 08 Apr 2024
Diagnosed : 08 Apr 2024 - 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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