

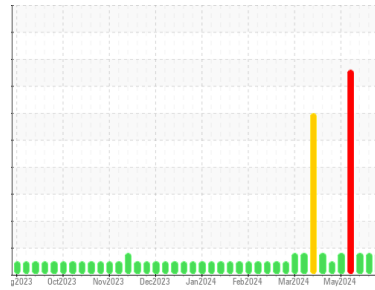


OIL ANALYSIS REPORT



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

Sample Rating Trend



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		WC0898197	WC0898195	WC0898192
Sample Date	Client Info		31 May 2024	24 May 2024	15 May 2024
Machine Age	hrs	Client Info	76094	75929	75710
Oil Age	hrs	Client Info	1045	877	661
Oil Changed	Client Info		Not Changed	Not Changed	Not Changed
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

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	0	2	<1
Chromium	ppm	ASTM D5185m >4	0	0	0
Nickel	ppm	ASTM D5185m	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	<1	0
Aluminum	ppm	ASTM D5185m >6	2	2	2
Lead	ppm	ASTM D5185m >9	0	1	0
Copper	ppm	ASTM D5185m >6	4	4	4
Tin	ppm	ASTM D5185m >4	▲ 5	▲ 5	▲ 5
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	92	83	76
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	4	4	5
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	42	30	6
Calcium	ppm	ASTM D5185m	1929	2080	1913
Phosphorus	ppm	ASTM D5185m	437	429	381
Zinc	ppm	ASTM D5185m	584	565	495
Sulfur	ppm	ASTM D5185m	4094	4258	3644

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	157	149	133
Sodium	ppm	ASTM D5185m >21	<1	1	<1
Potassium	ppm	ASTM D5185m >20	0	<1	0

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624	7.1	6.4	5.5
Sulfation	Abs/.1mm	*ASTM D7415	22.9	22.9	19.9

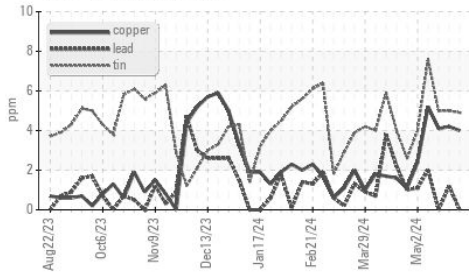
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	18.4	18.0	13.8
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	1.66	1.53	1.48
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	4.22	4.06	3.85

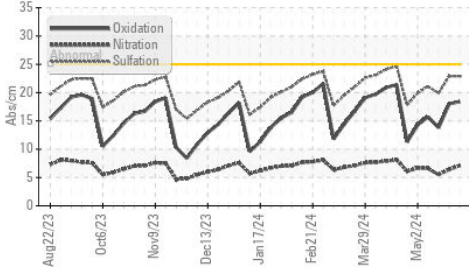


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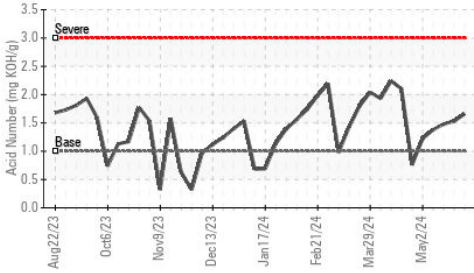
▲ Non-ferrous Metals



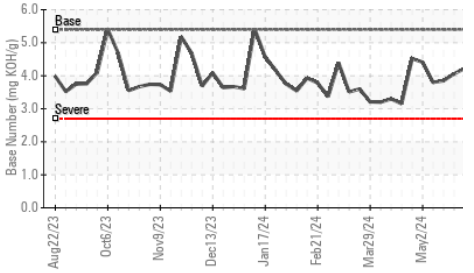
FT-IR (Direct Trend)



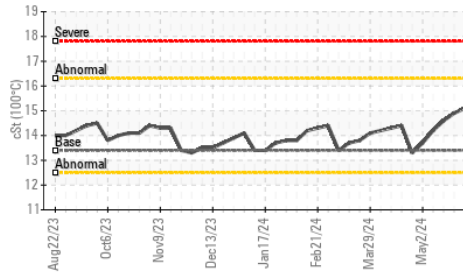
Acid Number



Base Number



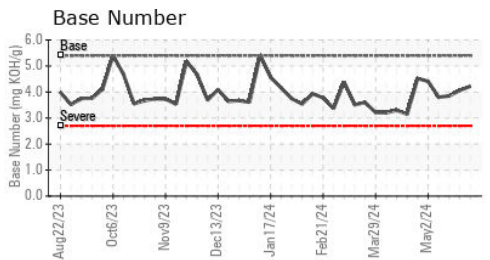
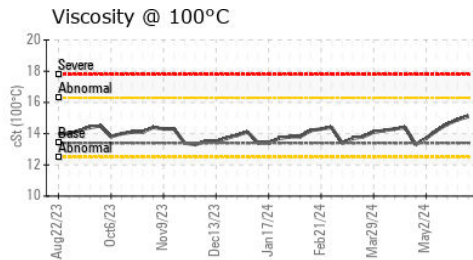
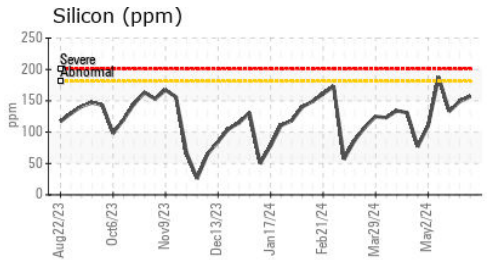
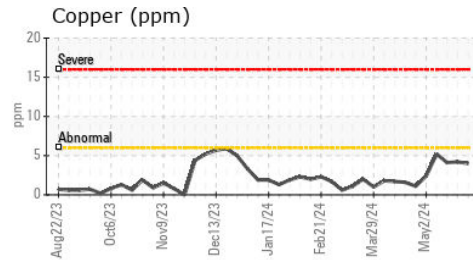
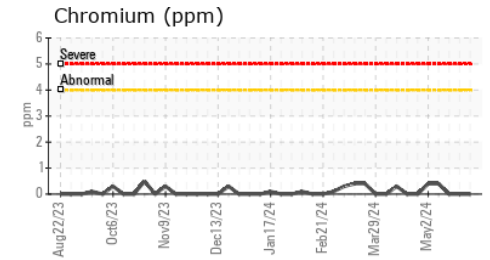
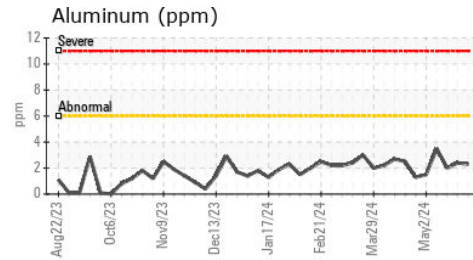
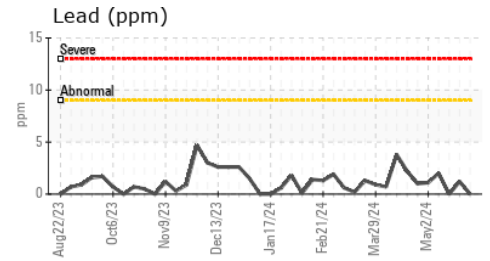
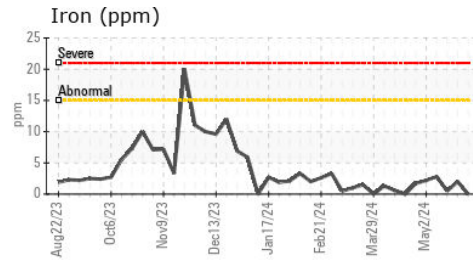
Viscosity @ 100°C



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	15.1	14.9

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0898197

Lab Number : 06197878

Unique Number : 11060001

Test Package : MOB 2

Received : 03 Jun 2024

Tested : 04 Jun 2024

Diagnosed : 04 Jun 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

T:

F:

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)