

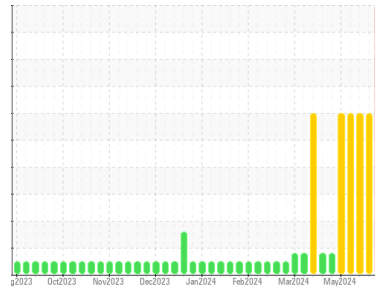


OIL ANALYSIS REPORT



Machine Id
HANM01BE (S/N 4EK00133)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (95 GAL)

Sample Rating Trend



DIAGNOSIS

▲ Recommendation

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear

The tin 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		WC0898204	WC0898194	WC0898193
Sample Date	Client Info		10 Jul 2024	24 May 2024	15 May 2024
Machine Age	hrs	Client Info	72268	71172	70956
Oil Age	hrs	Client Info	1096	1055	839
Oil Changed	Client Info		Changed	Not Changd	Not Changd
Sample Status			SEVERE	SEVERE	SEVERE

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	
PQ	ASTM D8184	>21	19	---	---	
Iron	ppm	ASTM D5185m	>15	7	3	2
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	4	3	2
Lead	ppm	ASTM D5185m	>9	<1	1	<1
Copper	ppm	ASTM D5185m	>6	2	<1	2
Tin	ppm	ASTM D5185m	>4	▲ 10	▲ 6	▲ 6
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		52	78	78
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	6	5
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		30	46	7
Calcium	ppm	ASTM D5185m		1964	2131	1936
Phosphorus	ppm	ASTM D5185m		489	453	387
Zinc	ppm	ASTM D5185m		689	593	507
Sulfur	ppm	ASTM D5185m		5109	4232	3564

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>181	▲ 246	165	154
Sodium	ppm	ASTM D5185m	>21	2	2	2
Potassium	ppm	ASTM D5185m	>20	<1	<1	0

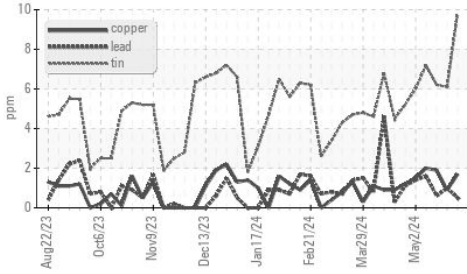
INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624		6.0	6.5	6.6
Sulfation	Abs/.1mm	*ASTM D7415		25.2	23.1	22.4

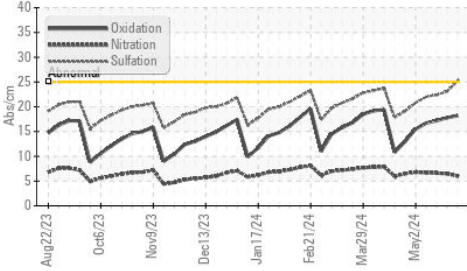


OIL ANALYSIS REPORT

▲ Non-ferrous Metals



FT-IR (Direct Trend)



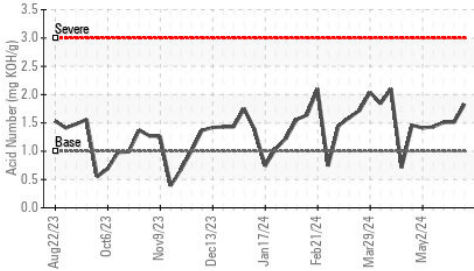
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs./1mm	*ASTM D7414	18.2	17.8	17.2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.83	1.51	1.51
Base Number (BN)	mg KOH/g	ASTM D2896	2.98	3.89	3.59

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	LIGHT	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	NEG	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

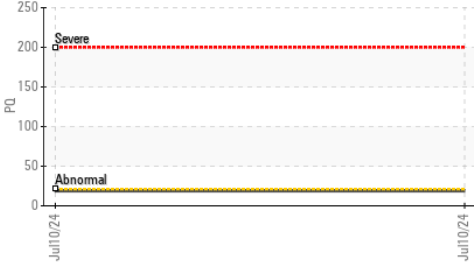
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.3	14.8	14.6

GRAPHS

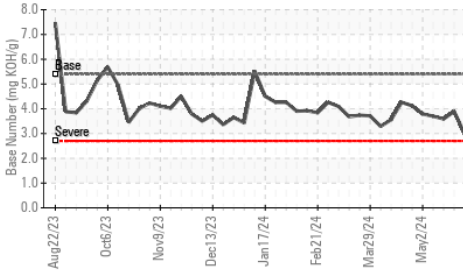
Acid Number



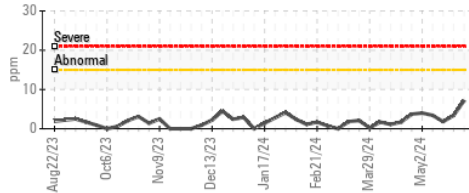
PQ



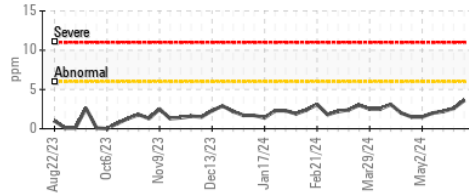
Base Number



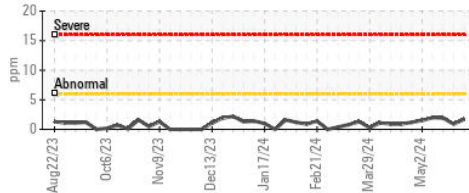
Iron (ppm)



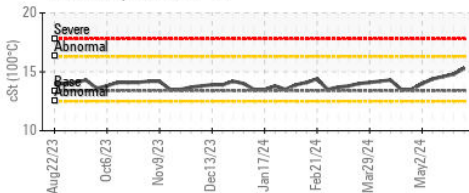
Aluminum (ppm)



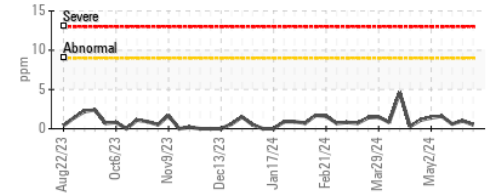
Copper (ppm)



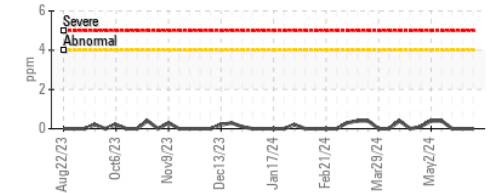
Viscosity @ 100°C



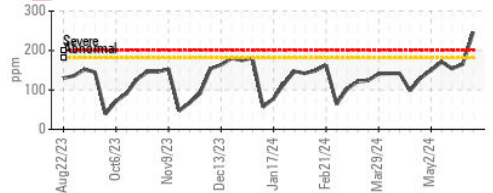
Lead (ppm)



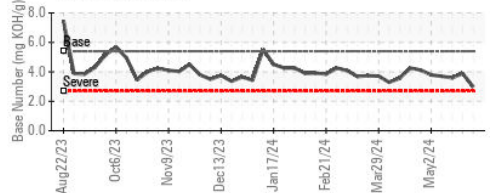
Chromium (ppm)



▲ Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : WC0898204

Lab Number : 06235112

Unique Number : 11123946

Test Package : MOB 2 (Additional Tests: PQ)

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)

Received : 12 Jul 2024

Tested : 15 Jul 2024

Diagnosed : 15 Jul 2024 - Sean Felton

EDL NA Recips-Hancock County

HANCOCK COUNTY POWER STATION, 3574 TOWNSHIP ROAD 142

FINDLAY, OH

US 45840

Contact: TIM CUSICK

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T:

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