

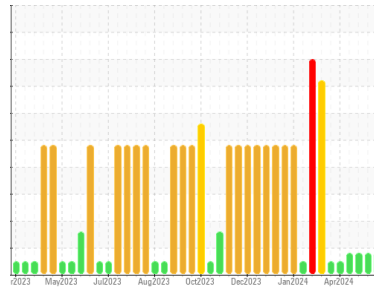


OIL ANALYSIS REPORT



Machine Id
DECM02BE (S/N 4EK00128)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (100 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 copper 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 acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0732847	WC0732848	WC0732841
Sample Date	Client Info		06 Jun 2024	22 May 2024	13 May 2024
Machine Age	hrs	Client Info	61903	61543	61329
Oil Age	hrs	Client Info	60557	60557	60557
Oil Changed	Client Info		N/A	Oil Added	Oil Added
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
PQ	ASTM D8184		19	---	---
Iron	ppm	ASTM D5185m >15	3	5	2
Chromium	ppm	ASTM D5185m >4	<1	<1	0
Nickel	ppm	ASTM D5185m	0	<1	0
Titanium	ppm	ASTM D5185m	<1	<1	0
Silver	ppm	ASTM D5185m	0	1	0
Aluminum	ppm	ASTM D5185m >6	2	2	1
Lead	ppm	ASTM D5185m >9	1	<1	0
Copper	ppm	ASTM D5185m >6	▲ 19	▲ 19	▲ 12
Tin	ppm	ASTM D5185m >4	1	2	<1
Vanadium	ppm	ASTM D5185m	<1	<1	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	21	13	3
Barium	ppm	ASTM D5185m	0	<1	0
Molybdenum	ppm	ASTM D5185m	21	13	3
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	64	37	13
Calcium	ppm	ASTM D5185m	2236	2038	1873
Phosphorus	ppm	ASTM D5185m	359	321	288
Zinc	ppm	ASTM D5185m	462	426	363
Sulfur	ppm	ASTM D5185m	3397	2875	2800

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	161	156	126
Sodium	ppm	ASTM D5185m >21	4	2	3
Potassium	ppm	ASTM D5185m >20	2	3	0

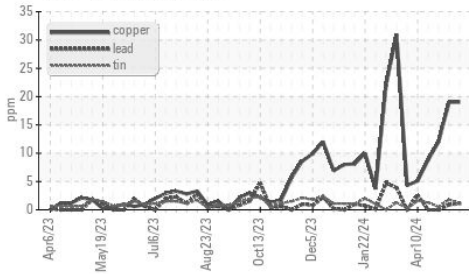
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624	8.0	6.9	5.9
Sulfation	Abs/.1mm	*ASTM D7415	21.5	19.5	18.1

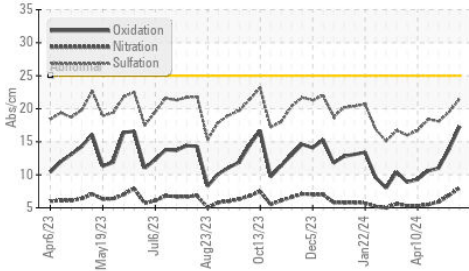


OIL ANALYSIS REPORT

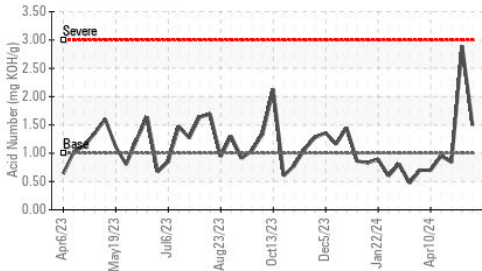
Non-ferrous Metals



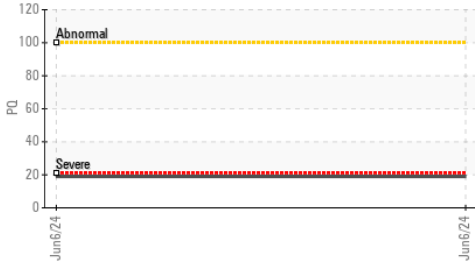
FT-IR (Direct Trend)



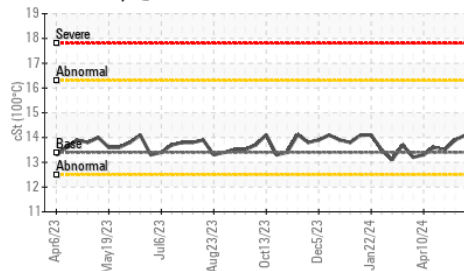
Acid Number



PQ



Viscosity @ 100°C



FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs./1mm *ASTM D7414	17.3	13.9	11.0
Acid Number (AN)	mg KOH/g ASTM D8045	1.0	2.892	0.84
Base Number (BN)	mg KOH/g ASTM D2896	5.4	4.44	4.71

VISUAL

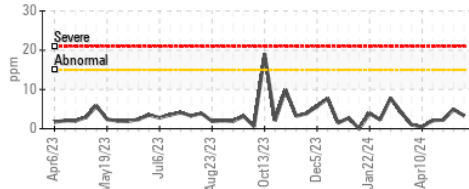
method	limit/base	current	history1	history2
White Metal	scalar *Visual	NONE	NONE	NONE
Yellow Metal	scalar *Visual	NONE	NONE	NONE
Precipitate	scalar *Visual	NONE	NONE	NONE
Silt	scalar *Visual	NONE	NONE	NONE
Debris	scalar *Visual	NONE	NONE	NONE
Sand/Dirt	scalar *Visual	NONE	NONE	NONE
Appearance	scalar *Visual	NORML	NORML	NORML
Odor	scalar *Visual	NORML	NORML	NORML
Emulsified Water	scalar *Visual	>.11	NEG	NEG
Free Water	scalar *Visual	NEG	NEG	NEG

FLUID PROPERTIES

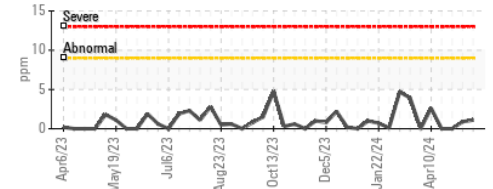
method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D445	13.4	13.9	13.5

GRAPHS

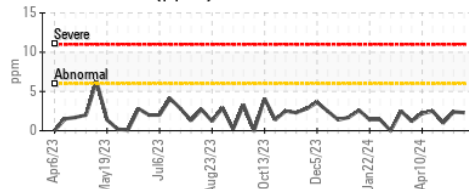
Iron (ppm)



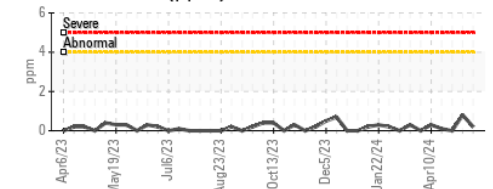
Lead (ppm)



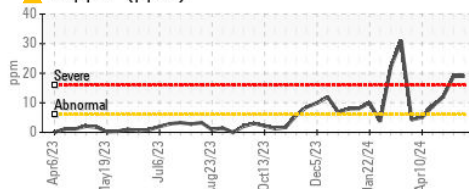
Aluminum (ppm)



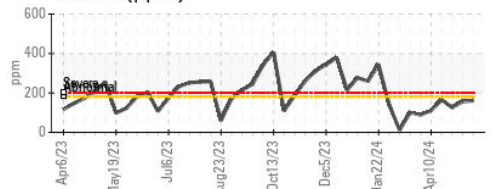
Chromium (ppm)



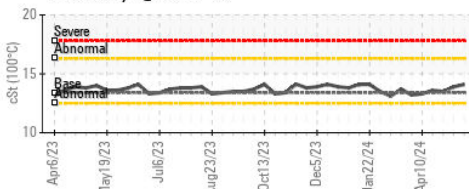
Copper (ppm)



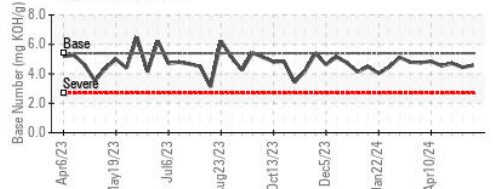
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0732847

Lab Number : 06204880

Unique Number : 11072341

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 : 10 Jun 2024

Tested : 12 Jun 2024

Diagnosed : 12 Jun 2024 - Don Baldrige

EDL NA Recips-Decatur

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TRINITY, AL

US 35673

Contact: JEFF SUMMERS

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