

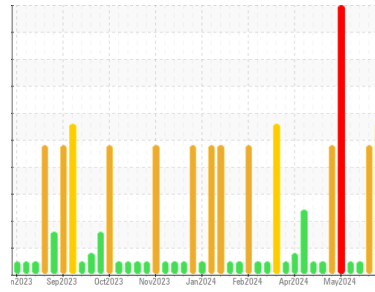


OIL ANALYSIS REPORT



Machine Id
BRCM03BE (S/N 6ZJ00395)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (150 GAL)

Sample Rating Trend



DIRT



DIAGNOSIS

▲ Recommendation

We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

▲ Wear

The tin level is abnormal.

▲ 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		WC0938418	WC0938379	WC0938384
Sample Date	Client Info		21 Jun 2024	14 Jun 2024	07 Jun 2024
Machine Age	hrs	Client Info	94176	94008	93854
Oil Age	hrs	Client Info	496	328	174
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			SEVERE	SEVERE	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184		16	20	15
Iron	ppm	ASTM D5185m >14	4	3	4
Chromium	ppm	ASTM D5185m >3	0	0	<1
Nickel	ppm	ASTM D5185m	<1	0	0
Titanium	ppm	ASTM D5185m	0	<1	<1
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >5	3	2	2
Lead	ppm	ASTM D5185m >8	3	<1	2
Copper	ppm	ASTM D5185m >5	4	3	2
Tin	ppm	ASTM D5185m >3	▲ 4	2	3
Vanadium	ppm	ASTM D5185m	0	<1	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	13	12	10
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	13	11	11
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	37	15	11
Calcium	ppm	ASTM D5185m	2001	1843	1783
Phosphorus	ppm	ASTM D5185m	330	265	265
Zinc	ppm	ASTM D5185m	405	326	320
Sulfur	ppm	ASTM D5185m	2752	2338	2357

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >180	▲ 269	▲ 212	122
Sodium	ppm	ASTM D5185m >20	8	7	6
Potassium	ppm	ASTM D5185m >20	5	4	4

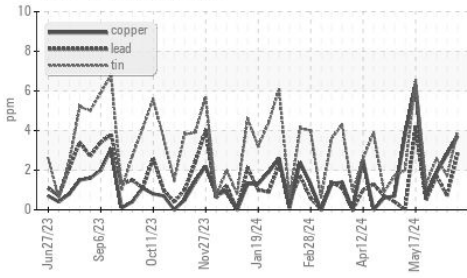
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624	6.4	6.1	5.6
Sulfation	Abs/.1mm	*ASTM D7415	19.3	18.8	16.8

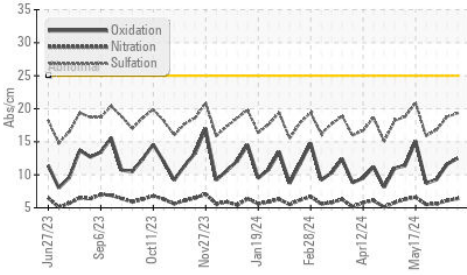


OIL ANALYSIS REPORT

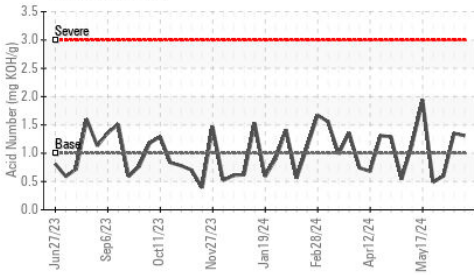
Non-ferrous Metals



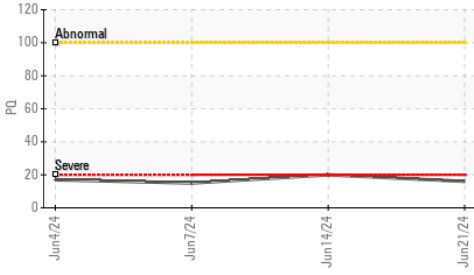
FT-IR (Direct Trend)



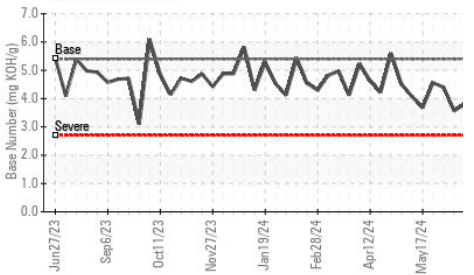
Acid Number



PQ



Base Number



FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs./1mm	*ASTM D7414	12.5	11.6	9.3
Acid Number (AN)	mg KOH/g	ASTM D8045	1.31	1.35	0.60
Base Number (BN)	mg KOH/g	ASTM D2896	3.80	3.57	4.40

VISUAL

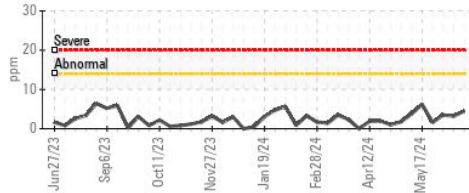
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

FLUID PROPERTIES

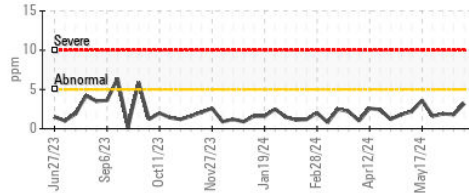
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.3	13.2	13.0

GRAPHS

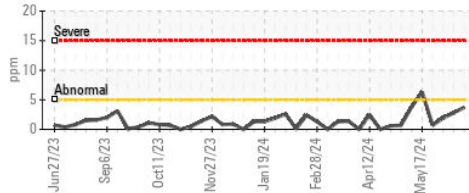
Iron (ppm)



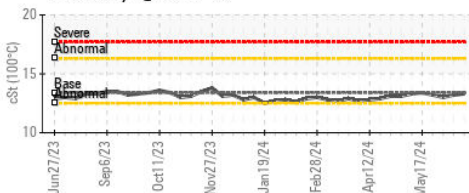
Aluminum (ppm)



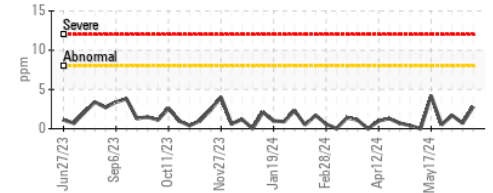
Copper (ppm)



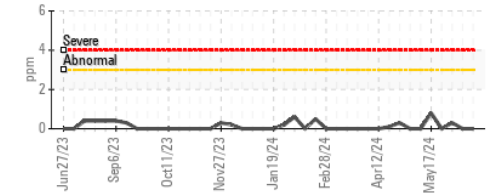
Viscosity @ 100°C



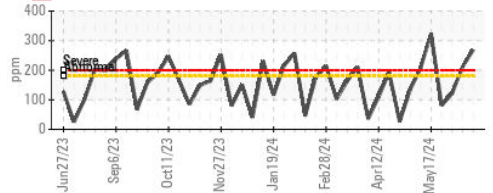
Lead (ppm)



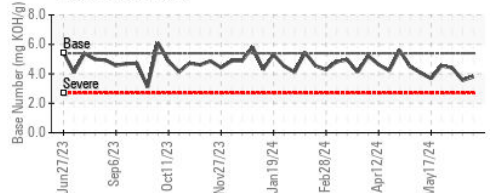
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : WC0938418

Lab Number : **06219897**

Unique Number : 11098094

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 : 25 Jun 2024

Tested : 26 Jun 2024

Diagnosed : 26 Jun 2024 - Sean Felton

EDL NA Recips-Brown County

BROWN COUNTY POWER STATION, 9427 BEYERS RD

GEORGETOWN, OH

US 45121

Contact: MITCHELL BUTLER

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