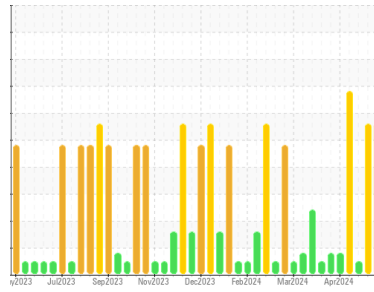




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
BRCM01BE (S/N GZJ00658)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

DIAGNOSIS

▲ Recommendation
 We recommend that you drain the oil from the component if this has not already been 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. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0760839	WC0760838	WC0760844
Sample Date	Client Info		04 Jun 2024	17 May 2024	10 May 2024
Machine Age	hrs	Client Info	77169	76740	76572
Oil Age	hrs	Client Info	654	225	57
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		15	---	---
Iron	ppm	ASTM D5185m >14	2	4	<1
Chromium	ppm	ASTM D5185m >3	0	<1	0
Nickel	ppm	ASTM D5185m	0	<1	0
Titanium	ppm	ASTM D5185m	0	<1	0
Silver	ppm	ASTM D5185m	0	<1	0
Aluminum	ppm	ASTM D5185m >5	2	4	1
Lead	ppm	ASTM D5185m >8	<1	1	0
Copper	ppm	ASTM D5185m >5	<1	2	0
Tin	ppm	ASTM D5185m >3	▲ 5	▲ 5	0
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	8	14	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	12	17	10
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	29	26	14
Calcium	ppm	ASTM D5185m	1910	2588	1836
Phosphorus	ppm	ASTM D5185m	290	436	270
Zinc	ppm	ASTM D5185m	369	520	325
Sulfur	ppm	ASTM D5185m	2781	4037	2125

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >180	▲ 265	▲ 227	56
Sodium	ppm	ASTM D5185m >20	1	<1	2
Potassium	ppm	ASTM D5185m >20	4	8	2

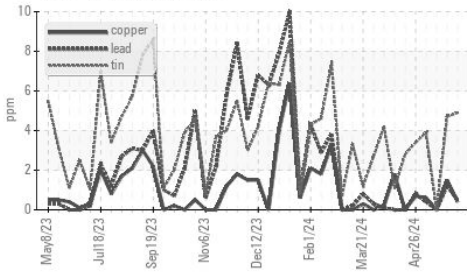
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0	0
Nitration	Abs/cm	*ASTM D7624	6.4	5.9	5.3
Sulfation	Abs/.1mm	*ASTM D7415	22.1	18.2	16.0

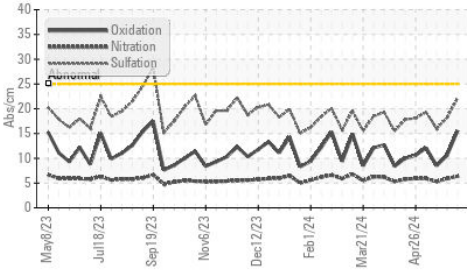


OIL ANALYSIS REPORT

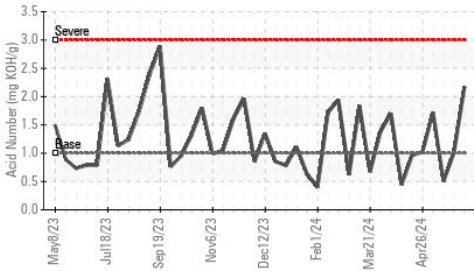
Non-ferrous Metals



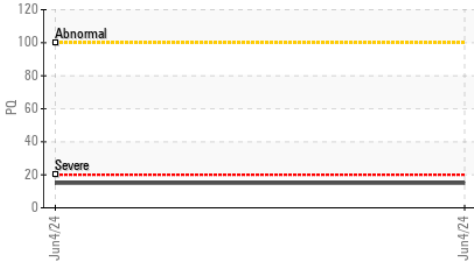
FT-IR (Direct Trend)



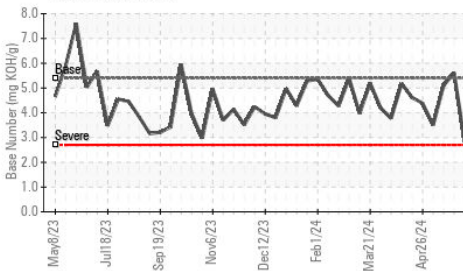
Acid Number



PQ



Base Number



FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs./1mm	*ASTM D7414	15.6	10.6	8.5
Acid Number (AN)	mg KOH/g	ASTM D8045	2.17	1.01	0.50
Base Number (BN)	mg KOH/g	ASTM D2896	2.83	5.61	5.10

VISUAL

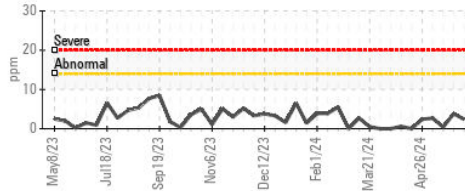
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	LIGHT	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*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

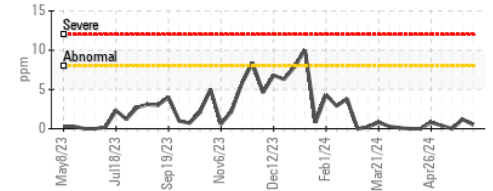
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	13.1	13.1

GRAPHS

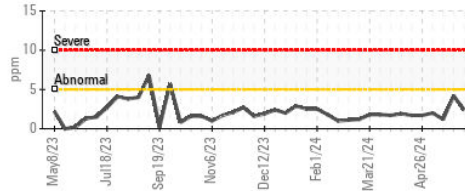
Iron (ppm)



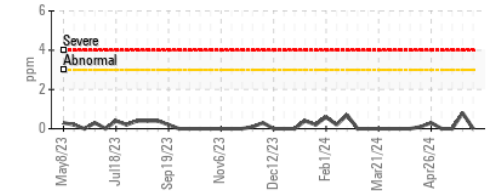
Lead (ppm)



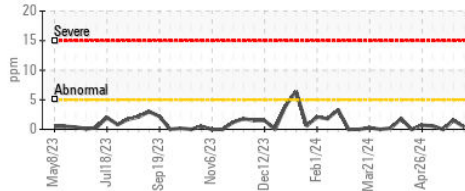
Aluminum (ppm)



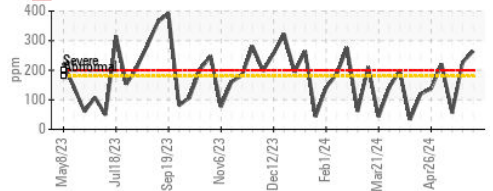
Chromium (ppm)



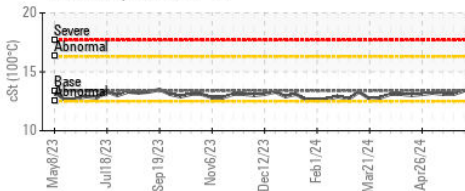
Copper (ppm)



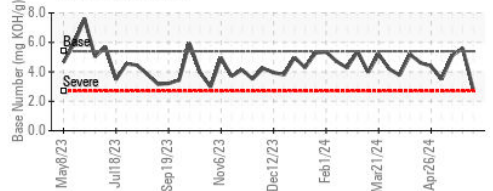
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0760839

Lab Number : 06202121

Unique Number : 11069582

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 : 06 Jun 2024

Tested : 18 Jun 2024

Diagnosed : 18 Jun 2024 - Jonathan Hester

EDL NA Recips-Brown County

BROWN COUNTY POWER STATION, 9427 BEYERS RD

GEORGETOWN, OH

US 45121

Contact: MITCHELL BUTLER

Mitchell.Butler@edlenergy.com

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