

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



BRCM01BE (S/N GZJ00658)

Component **Biogas Engine**

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

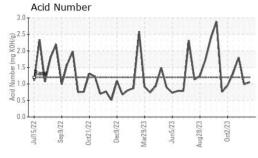
Fluid Condition

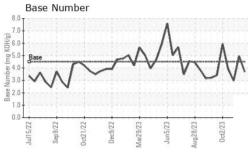
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

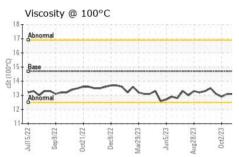
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0760941	WC0760935	WC0760818
Sample Date		Client Info		14 Nov 2023	06 Nov 2023	16 Oct 2023
Machine Age	hrs	Client Info		72747	72588	72184
Oil Age	hrs	Client Info		257	98	473
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	SEVERE
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	5	1	5
Chromium	ppm	ASTM D5185m	>4	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	2	1	2
Lead	ppm	ASTM D5185m	>9	2	<1	5
Copper	ppm	ASTM D5185m	>6	0	0	<1
Tin	ppm	ASTM D5185m	>4	4	<1	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		8	8	6
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		3	3	3
Manganese		AOTA DELOE		4	0	<1
	ppm	ASTM D5185m		<1	U	< 1
-	ppm ppm	ASTM D5185m ASTM D5185m		<1 31	25	27
Magnesium	ppm					
Magnesium Calcium	ppm ppm	ASTM D5185m		31	25	27
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		31 1754 308	25 1658 120	27 1755 308
Magnesium Calcium Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m		31 1754	25 1658	27 1755
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	31 1754 308 370	25 1658 120 350	27 1755 308 379
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181	31 1754 308 370 2196	25 1658 120 350 1878	27 1755 308 379 2490
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		31 1754 308 370 2196	25 1658 120 350 1878 history1	27 1755 308 379 2490 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m		31 1754 308 370 2196 current	25 1658 120 350 1878 history1	27 1755 308 379 2490 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	>181	31 1754 308 370 2196 current 161	25 1658 120 350 1878 history1 77	27 1755 308 379 2490 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m MSTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>181 >20	31 1754 308 370 2196 current 161 0	25 1658 120 350 1878 history1 77 0	27 1755 308 379 2490 history2 • 247 0
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm	ASTM D5185m	>181 >20 limit/base	31 1754 308 370 2196 current 161 0	25 1658 120 350 1878 history1 77 0	27 1755 308 379 2490 history2 • 247 0 0
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D5185m	>181 >20 limit/base >20	31 1754 308 370 2196 current 161 0 0	25 1658 120 350 1878 history1 77 0 0	27 1755 308 379 2490 history2 • 247 0 0 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624	>181 >20 limit/base >20	31 1754 308 370 2196 current 161 0 current 0 5.3	25 1658 120 350 1878 history1 77 0 0 history1 0 5.2	27 1755 308 379 2490 history2 247 0 0 history2 0 5.4 22.6
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	>181 >20 limit/base >20 >20 >30	31 1754 308 370 2196 current 161 0 0 current 0 5.3 19.6	25 1658 120 350 1878 history1 77 0 0 history1 0 5.2 16.8	27 1755 308 379 2490 history2 247 0 0 history2 0 5.4 22.6
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m METHOD ASTM D5185m METHOD ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m METHOD *ASTM D7844 *ASTM D7624 *ASTM D7415 METHOD	>181 >20 limit/base >20 >20 >30 limit/base	31 1754 308 370 2196 current 161 0 0 current 0 5.3 19.6	25 1658 120 350 1878 history1 77 0 0 history1 0 5.2 16.8 history1	27 1755 308 379 2490 history2 247 0 0 history2 0 5.4 22.6 history2



OIL ANALYSIS REPORT



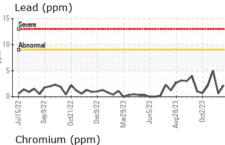


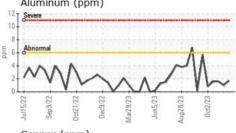


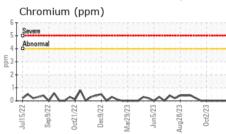
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

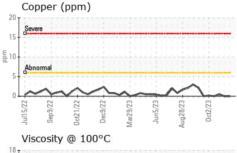
FLUID PROPER	THES	method			riistory i	History
Visc @ 100°C	cSt	ASTM D445	14.7	12.8	12.8	13.1

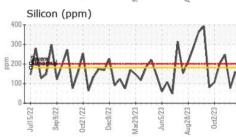
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Abno	ormal						
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Jul15/22	Sep9/22	ot21/22	Dec9/22	Mar29/23	Jun5/23	Aug28/23	0ct2/23
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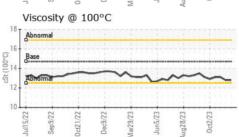


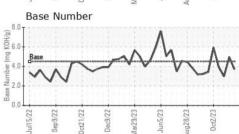
















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0760941 : 06011073 : 10750217

Received Diagnosed Diagnostician

: 17 Nov 2023 : 20 Nov 2023 : Sean Felton

EDL NA Recips-Brown County BROWN COUNTY POWER STATION, 9427 BEYERS RD

GEORGETOWN, OH US 45121

Contact: MITCHELL BUTLER Mitchell.Butler@edlenergy.com

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)

Report Id: ENEGEO [WUSCAR] 06011073 (Generated: 11/20/2023 16:46:41) Rev: 1

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