

OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id Coopersville CAT 5 CPVM05BE Component Biogas Engine Fluid

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

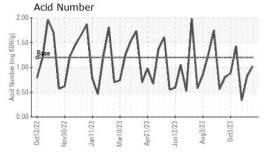
Fluid Condition

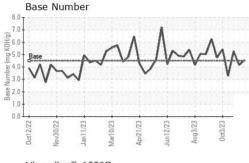
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

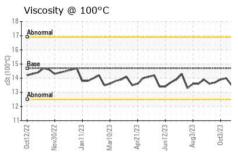
		t2022 Nov20	zz Janzuza Marzuza	Apr2023 Jun2023 Aug2023	0ct2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0819424	WC0819426	WC0819417
Sample Date		Client Info		16 Nov 2023	07 Nov 2023	26 Oct 2023
Machine Age	hrs	Client Info		13014	12801	12525
Oil Age	hrs	Client Info		489	276	1
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	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	0	0	0
Chromium	ppm	ASTM D5185m	>4	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	~ L	0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	2	2	<1
Lead	ppm	ASTM D5185m	>9	2	1	<1
Copper	ppm		>14	0	<1	1
Tin	ppm	ASTM D5185m	>4	6	4	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	le le		limit/base			
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	limit/base	current	history1	history2
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current <1	history1 0 2	history2 0 0
Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0	history1 0 2 0	history2 0 0 <1
Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0 <1	history1 0 2 0 <1	history2 0 0 <1 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0 <1 9	history1 0 2 0 <1 15	history2 0 0 <1 <1 5
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0 <1 9 1723	history1 0 2 0 <1 15 1489	history2 0 0 <1 <1 5 1547
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current <1 0 0 <1 9 1723 264	history1 0 2 0 <1 15 1489 253	history2 0 0 <1 <1 5 1547 209
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current <1 0 0 <1 9 1723 264 330	history1 0 2 0 <1 15 1489 253 330	history2 0 0 <1 <1 5 1547 209 291
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m		current <1 0 0 <1 9 1723 264 330 1890	history1 0 2 0 <1 15 1489 253 330 1755	history2 0 0 <1 <1 5 1547 209 291 1629
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current <1 0 0 <1 9 1723 264 330 1890 current	history1 0 2 0 <1 15 1489 253 330 1755 history1	history2 0 0 <1 <1 5 1547 209 291 1629 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m		current <1 0 0 0 <1 9 1723 264 330 1890 current	history1 0 2 0 <1 15 1489 253 330 1755 history1 99	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >181	current <1 0 0 -1 9 1723 264 330 1890	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >181 >20	current <1 0 0 0 <1 9 1723 264 330 1890 current 154 0 0	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33 <1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >181	current <1 0 0 -1 9 1723 264 330 1890	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33 <1 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181 >20 limit/base	current <1 0 0 1 7 1723 264 330 1890 current 154 0 0 current 0.1	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1 history1 0	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33 <1 2 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181 >20 limit/base >20	current <1 0 0 1 7 1723 264 330 1890 current 154 0 0 current 0.1 6.2	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1 history1 0 5.7	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33 <1 2 history2 0 4.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >181 >20 limit/base >20 >30	current <1 0 0 1 7 1723 264 330 1890 current 154 0 0 current 0.1 6.2 18.5	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1 history1 0 5.7 17.4	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33 <1 2 history2 0 4.7 15.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181 >20 limit/base >20 >30 limit/base	current <1 0 0 1 7 1 9 1723 264 330 1890 current 154 0 0 current 0.1 6.2 18.5 current	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1 history1 0 5.7	history2 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m method *ASTM D5185m *ASTM D78144 *ASTM D7844 *ASTM D7844	limit/base >181 >20 limit/base >20 >30	current <1 0 0 1 7 1 9 1723 264 330 1890 current 154 0 0 current 0.1 6.2 18.5 current	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1 history1 0 5.7 17.4 history1 11.0	history2 0 0 <1 <1 5 1547 209 291 1629 history2 33 <1 2 history2 0 4.7 15.1 history2 8.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m method *ASTM D5185m *ASTM D78144 *ASTM D7844 *ASTM D7844	limit/base >181 >20 limit/base >20 >30 limit/base	current <1 0 0 1 7 1 9 1723 264 330 1890 current 154 0 0 current 0.1 6.2 18.5 current	history1 0 2 0 <1 15 1489 253 330 1755 history1 99 0 <1 history1 0 5.7 17.4 history1	history2 0 0



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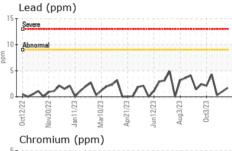


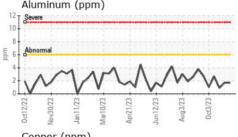


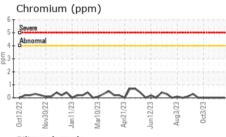
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

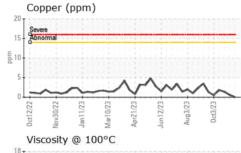
FLUID FROFER	THES	memou			HISTORY	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	14.7	14.0	13.7	13.5

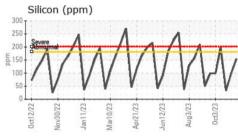
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	Nov30/22	Jan 11/23	Mar10/23	Apr21/23	Jun12/23	Aug3/23	Oct3/23	

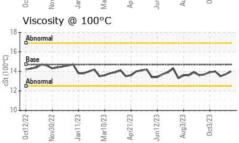


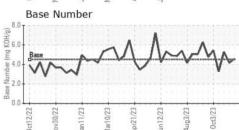
















Certificate L2367

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

: WC0819424 : 06015275 : 10754419

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 22 Nov 2023 : 26 Nov 2023 Diagnosed Diagnostician : Don Baldridge

EDL NA Recips-Coopersville

Coopersville Powerstation, 15362 68th Avenue Coopersville, MI

US 49404 Contact: Daniel Young daniel.young@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)

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