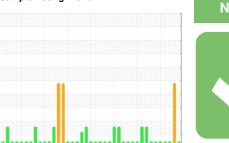


# **OIL ANALYSIS REPORT**

#### Sample Rating Trend







# Machine Id SJNM03BE Component Biogas Engine Fluid CHEVRON HDAX 6500

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

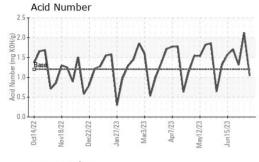
#### **Fluid Condition**

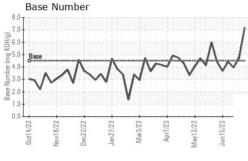
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

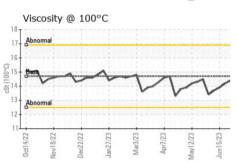
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0764355	WC0764347	WC0764346
Sample Date		Client Info		14 Jul 2023	07 Jul 2023	30 Jun 2023
Machine Age	hrs	Client Info		99217	99031	98887
Oil Age	hrs	Client Info		186	955	811
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	SEVERE	NORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	1	3	4
Chromium	ppm	ASTM D5185m	>4	0	0	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	<1	3	2
Lead	ppm	ASTM D5185m	>9	<1	3	2
Copper	ppm	ASTM D5185m	>6	<1	2	2
Tin	ppm	ASTM D5185m	>4	1	4	4
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
4 D D I T I V I C O	•••					
ADDITIVES		method			history1	history2
Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 4	history2 5
	ppm		limit/base			
Boron Barium	ppm	ASTM D5185m	limit/base	2	4	5
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 4	4 0 7	5 0 8
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	limit/base	2 0 4 <1	4 0	5 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 4 <1 16	4 0 7 <1 16	5 0 8 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 4 <1 16 1982	4 0 7 <1 16 2112	5 0 8 <1 19 2171
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 4 <1 16 1982 299	4 0 7 <1 16 2112 298	5 0 8 <1 19 2171 319
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 4 <1 16 1982	4 0 7 <1 16 2112	5 0 8 <1 19 2171
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 4 <1 16 1982 299 349	4 0 7 <1 16 2112 298 349	5 0 8 <1 19 2171 319 402
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m		2 0 4 <1 16 1982 299 349 2389	4 0 7 <1 16 2112 298 349 2711	5 0 8 <1 19 2171 319 402 2609
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	2 0 4 <1 16 1982 299 349 2389	4 0 7 <1 16 2112 298 349 2711 history1	5 0 8 <1 19 2171 319 402 2609
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	2 0 4 <1 16 1982 299 349 2389 current	4 0 7 <1 16 2112 298 349 2711 history1	5 0 8 <1 19 2171 319 402 2609 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	2 0 4 <1 16 1982 299 349 2389 current 81	4 0 7 <1 16 2112 298 349 2711 history1  206 5	5 0 8 <1 19 2171 319 402 2609 history2 200
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >20	2 0 4 <1 16 1982 299 349 2389 current 81 3	4 0 7 <1 16 2112 298 349 2711 history1  206 5 0	5 0 8 <1 19 2171 319 402 2609 history2 200 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >20 limit/base	2 0 4 <1 16 1982 299 349 2389 current 81 3 0	4 0 7 <1 16 2112 298 349 2711 history1  206 5 0 history1	5 0 8 <1 19 2171 319 402 2609 history2 200 1 2
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	ASTM D5185m	limit/base >181 >20 limit/base >20	2 0 4 <1 16 1982 299 349 2389 current 81 3 0	4 0 7 <1 16 2112 298 349 2711 history1	5 0 8 <1 19 2171 319 402 2609 history2 200 1 2 history2
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	ASTM D5185m  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181 >20 limit/base >20	2 0 4 <1 16 1982 299 349 2389 current 81 3 0 current 0.1 6.6	4 0 7 <1 16 2112 298 349 2711 history1  206 5 0 history1 0.1 8.1	5 0 8 <1 19 2171 319 402 2609 history2 200 1 2 history2 0.1 7.8
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	ASTM D5185m  Method  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76145	limit/base >181 >20 limit/base >20 >30	2 0 4 <1 16 1982 299 349 2389 current 81 3 0 current 0.1 6.6 18.4	4 0 7 <1 16 2112 298 349 2711 history1  206 5 0 history1 0.1 8.1 25.2	5 0 8 <1 19 2171 319 402 2609 history2 200 1 2 history2 0.1 7.8 24.2
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	ASTM D5185m  method  *ASTM D5185m  *ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D5185m  method  *ASTM D7624  *ASTM D7624  *ASTM D7415  method  *ASTM D7414	limit/base >181 >20 limit/base >20 >30 limit/base	2 0 4 <1 16 1982 299 349 2389 current 81 3 0 current 0.1 6.6 18.4	4 0 7 <1 16 2112 298 349 2711 history1 206 5 0 history1 0.1 8.1 25.2 history1	5 0 8 <1 19 2171 319 402 2609 history2 200 1 2 history2 0.1 7.8 24.2



## **OIL ANALYSIS REPORT**



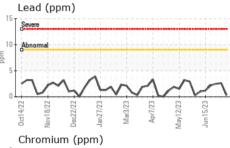


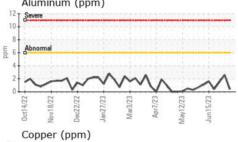


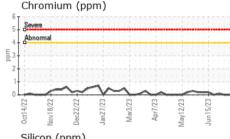
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

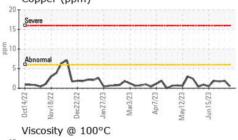
LLUID PHOPER	THES	method			riistory i	History
Visc @ 100°C	cSt	ASTM D445	14.7	13.5	14.6	14.4

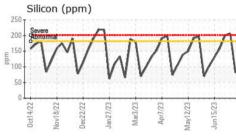
Abn	ormal	11:11					
		\./	~	1	~~		1
/22	727	122	/23	/23	/23	123	123
0ct14/22	Nov18/2	)ec22/	Jan27/23	Mar3/23	Apr7/23	May12/	Jun15/2

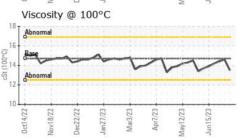


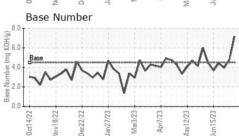














Certificate L2367

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

: WC0764355 : 05902470 : 10563826

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

: 19 Jul 2023 : 21 Jul 2023 Diagnostician : Sean Felton **EDL NA Recips-South Jordan** 

South Jordan Powerstation, 10473 S. Bacchus Hwy. South Jordan, UT US 84095

Contact: Aaron Klein

aaron.klein@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)

T:

F: