

# **OIL ANALYSIS REPORT**



**CHEVRON HDAX 6500 LFG GAS ENGINE OIL (141 GAL)** 



Sample Rating Trend



## 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

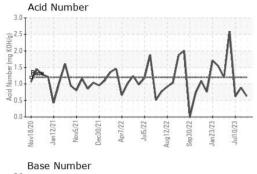
## **Fluid Condition**

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.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0816132	WC0816089	WC0816096
Sample Date		Client Info		09 Aug 2023	21 Jul 2023	10 Jul 2023
Machine Age	hrs	Client Info		162423	124056	124037
Oil Age	hrs	Client Info		456	95	123961
Oil Changed		Client Info		Filtered	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	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	3	4	9
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	3	1	3
Lead	ppm	ASTM D5185m	>9	2	1	1
Copper	ppm	ASTM D5185m	>6	2	2	7
Tin	ppm	ASTM D5185m	>4	2	<1	1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	history1	history2 9
	ppm		limit/base		•	•
Boron		ASTM D5185m	limit/base	7	14	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	7 0	14	9
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 8	14 0 8	9 2 9
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 8 <1	14 0 8 <1	9 2 9 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 8 <1 37	14 0 8 <1 36	9 2 9 <1 43
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 8 <1 37 1695	14 0 8 <1 36 1654	9 2 9 <1 43 2189
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	7 0 8 <1 37 1695 294	14 0 8 <1 36 1654 284	9 2 9 <1 43 2189 354
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	7 0 8 <1 37 1695 294	14 0 8 <1 36 1654 284 340	9 2 9 <1 43 2189 354 467
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 8 <1 37 1695 294 352 2242	14 0 8 <1 36 1654 284 340 1951	9 2 9 <1 43 2189 354 467 2701
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	7 0 8 <1 37 1695 294 352 2242 current	14 0 8 <1 36 1654 284 340 1951 history1	9 2 9 <1 43 2189 354 467 2701 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	7 0 8 <1 37 1695 294 352 2242 current	14 0 8 <1 36 1654 284 340 1951 history1	9 2 9 <1 43 2189 354 467 2701 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	7 0 8 <1 37 1695 294 352 2242 current 102 15	14 0 8 <1 36 1654 284 340 1951 history1 21 17	9 2 9 <1 43 2189 354 467 2701 history2 79 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >20	7 0 8 <1 37 1695 294 352 2242 current 102 15	14 0 8 <1 36 1654 284 340 1951 history1 21 17 <1	9 2 9 <1 43 2189 354 467 2701 history2 79 3 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	ASTM D5185m	limit/base >181 >20 limit/base	7 0 8 <1 37 1695 294 352 2242 current 102 15 2	14 0 8 <1 36 1654 284 340 1951 history1 21 17 <1	9 2 9 <1 43 2189 354 467 2701 history2 79 3 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	ASTM D5185m  method  *ASTM D5185m  *ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D5185m  *ASTM D5185m	limit/base >181 >20 limit/base	7 0 8 <1 37 1695 294 352 2242  current 102 15 2  current 0	14 0 8 <1 36 1654 284 340 1951 history1 21 17 <1	9 2 9 <1 43 2189 354 467 2701 history2 79 3 2 history2 0.1
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	limit/base >181 >20 limit/base >20	7 0 8 <1 37 1695 294 352 2242  current 102 15 2  current 0 5.1	14 0 8 <1 36 1654 284 340 1951 history1 21 17 <1 history1 0 4.6	9 2 9 <1 43 2189 354 467 2701 history2 79 3 2 history2 0.1 5.1
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 ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >181 >20 limit/base >20 >30	7 0 8 <1 37 1695 294 352 2242  current 102 15 2  current 0 5.1 16.2	14 0 8 <1 36 1654 284 340 1951 history1 21 17 <1 history1 0 4.6 14.7	9 2 9 <1 43 2189 354 467 2701 history2 79 3 2 history2 0.1 5.1 16.1
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	ASTM D5185m  method  ASTM D5185m ASTM D5185m  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  method  *ASTM D7844  *ASTM D7624  *ASTM D7415  method	limit/base >181 >20 limit/base >20 >30 limit/base	7 0 8 <1 37 1695 294 352 2242 current 102 15 2 current 0 5.1 16.2 current	14 0 8 <1 36 1654 284 340 1951 history1 21 17 <1 history1 0 4.6 14.7 history1	9 2 9 <1 43 2189 354 467 2701 history2 79 3 2 history2 0.1 5.1 16.1 history2



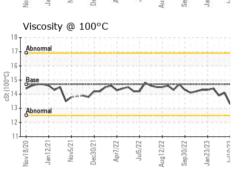
# **OIL ANALYSIS REPORT**

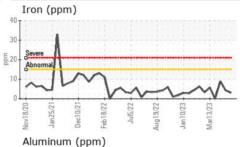


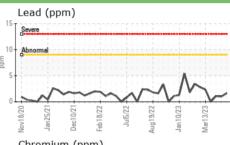
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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
FLUID PROPERT	TES	method	limit/hasa	current	history1	history2

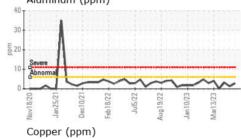
6.0-									
5.0 - Ba	e	^			Λ.	_	1		1
3.0	~1	1	<b>^</b>	1	V	1	/ `	~	
		3		V	-				
2.0	in heads			iot Halabih					
2.0									
5.0 Bas 4.0 3.0 2.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Jan12/21	Nov5/21		Apr7/22	2	Aug12/22	Sep30/22	23	1,110,03

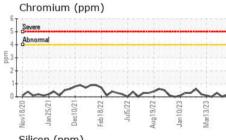
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	14.7	13.2	13.3	13.3

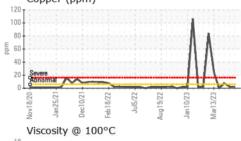


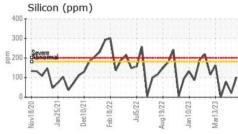


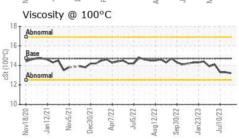


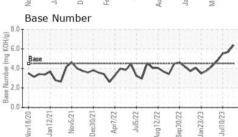
















Certificate L2367

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

: WC0816132 : 05922390

: 10602337

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 11 Aug 2023 : 14 Aug 2023 Diagnosed Diagnostician

: Don Baldridge

**EDL NA Recips-Covel** COVEL GARDENS POWER STATION, 8611 COVEL ROAD

SAN ANTONIO, TX US 78252

Contact: ARIEL CARRION ariel.carrion@edlenergy.com T:

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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