

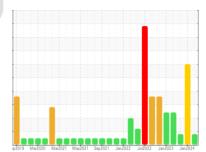
OIL ANALYSIS REPORT



Component

Diesel Engine

CHEVRON DELO 400 LE 15W40 (32 QTS)



Sample Rating Trend



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

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

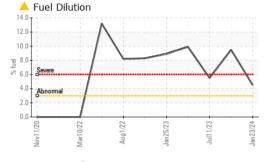
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

19.2019 Mna2020 Mna2021 Mna2021 Snp2021 Jnn2022 Jul2022 Jnn2024						
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0085179	GFL0102311	GFL0071572
Sample Date		Client Info		23 Jan 2024	04 Jan 2024	11 Jul 2023
Machine Age	hrs	Client Info		0	8469	8469
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				ABNORMAL	SEVERE	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	13	68	22
Chromium	ppm	ASTM D5185m	>20	<1	3	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	1 0	4
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	0	1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		and the section of		a	historyd	history2
ADDITIVES		method	limit/base	current	history1	HISTOLYZ
Boron	ppm	ASTM D5185m	ilmit/base	3	4	3
	ppm		ilmii/base			
Boron Barium	ppm	ASTM D5185m	iimii/base	3	4	3
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	IIMII/Dase	3 0	4	3 <1
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	ilmii/base	3 0 55	4 0 54	3 <1 63
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	ilmii/base	3 0 55 <1	4 0 54 <1	3 <1 63 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200	3 0 55 <1 872	4 0 54 <1 814	3 <1 63 <1 982
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		3 0 55 <1 872 994	4 0 54 <1 814 916	3 <1 63 <1 982 1124
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200	3 0 55 <1 872 994 1001	4 0 54 <1 814 916 908	3 <1 63 <1 982 1124 1090
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	1200 1300	3 0 55 <1 872 994 1001 1172	4 0 54 <1 814 916 908 1071	3 <1 63 <1 982 1124 1090 1344
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	1200 1300 3200	3 0 55 <1 872 994 1001 1172 2876	4 0 54 <1 814 916 908 1071 2291	3 <1 63 <1 982 1124 1090 1344 3790
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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	1200 1300 3200 limit/base	3 0 55 <1 872 994 1001 1172 2876	4 0 54 <1 814 916 908 1071 2291 history1	3 <1 63 <1 982 1124 1090 1344 3790 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1200 1300 3200 limit/base	3 0 55 <1 872 994 1001 1172 2876 current	4 0 54 <1 814 916 908 1071 2291 history1 ▲ 25	3 <1 63 <1 982 1124 1090 1344 3790 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1200 1300 3200 limit/base >25	3 0 55 <1 872 994 1001 1172 2876 current 7	4 0 54 <1 814 916 908 1071 2291 history1 ▲ 25 41	3 <1 63 <1 982 1124 1090 1344 3790 history2 8 22
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	1200 1300 3200 limit/base >25 >20	3 0 55 <1 872 994 1001 1172 2876 current 7 11	4 0 54 <1 814 916 908 1071 2291 history1 ▲ 25 41 6	3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	1200 1300 3200 limit/base >25 >20 >3.0	3 0 55 <1 872 994 1001 1172 2876 current 7 11 4 ▲ 4.5	4 0 54 <1 814 916 908 1071 2291 history1 ▲ 25 41 6 ● 9.5	3 <1 63 <1 982 1124 1090 1344 3790 history2 8 22 4 ▲ 5.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	1200 1300 3200 limit/base >25 >20 >3.0 limit/base	3 0 55 <1 872 994 1001 1172 2876 current 7 11 4 ▲ 4.5 current	4 0 54 <1 814 916 908 1071 2291 history1 ▲ 25 41 6 ● 9.5 history1	3 <1 63 <1 982 1124 1090 1344 3790 history2 8 22 4 ▲ 5.5 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	1200 1300 3200 limit/base >25 >20 >3.0 limit/base >6 >20	3 0 55 <1 872 994 1001 1172 2876 current 7 11 4 ▲ 4.5 current 0.3	4 0 54 <1 814 916 908 1071 2291 history1 △ 25 41 6 ● 9.5 history1 0.8	3 <1 63 <1 982 1124 1090 1344 3790 history2 8 22 4 ▲ 5.5 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D76145	1200 1300 3200 limit/base >25 >20 >3.0 limit/base >6 >20	3 0 55 <1 872 994 1001 1172 2876 current 7 11 4 ▲ 4.5 current 0.3 7.8	4 0 54 <1 814 916 908 1071 2291 history1 ▲ 25 41 6 ● 9.5 history1 0.8 15.6	3 <1 63 <1 982 1124 1090 1344 3790 history2 8 22 4 ▲ 5.5 history2 0.4 10.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	1200 1300 3200 limit/base >25 >20 >3.0 limit/base >6 >20 >30 limit/base	3 0 55 <1 872 994 1001 1172 2876 current 7 11 4 ▲ 4.5 current 0.3 7.8 18.9 current	4 0 54 <1 814 916 908 1071 2291 history1 ▲ 25 41 6 ● 9.5 history1 0.8 15.6 27.9 history1	3 <1 63 <1 982 1124 1090 1344 3790 history2 8 22 4 ▲ 5.5 history2 0.4 10.0 20.4 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D76145	1200 1300 3200 limit/base >25 >20 >3.0 limit/base >6 >20 >30	3 0 55 <1 872 994 1001 1172 2876 current 7 11 4 ▲ 4.5 current 0.3 7.8 18.9	4 0 54 <1 814 916 908 1071 2291 history1 △ 25 41 6 ● 9.5 history1 0.8 15.6 27.9	3 <1 63 <1 982 1124 1090 1344 3790 history2 8 22 4 ▲ 5.5 history2 0.4 10.0 20.4



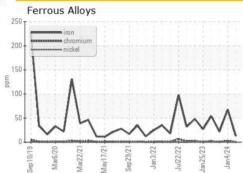
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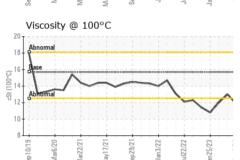


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

Base I	Number						
@10.0 - Base				^			
0.8 gg 8.0	2N	\cap	\	\sim	1		A /
6.0 mper (V				V	U	/\/
(B) HO William Base (M) Holy 8.0 - A Minus Holy 8.0					٧		V
0.0		Ш	Ш	Ш	Ш		
Sep10/19	Mar22/21	May17/2	Sep29/21	Jan3/22	Jul22/22	an25/23	

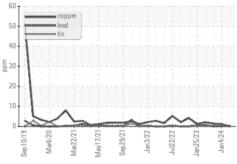
FLUID PROP	ERTIES	method	limit/base	current	history1	history
Visc @ 100°C	cSt	ASTM D445	15.7	12.8	▲ 11.9	13.0

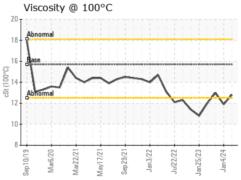


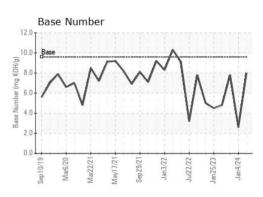




GRAPHS











Laboratory Sample No. Lab Number Unique Number : 10849340

: GFL0085179 : 06072663

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

: 29 Jan 2024 : 31 Jan 2024 Diagnostician : Wes Davis

Test Package : FLEET (Additional Tests: PercentFuel) 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)

GFL Environmental - 035 - Greensboro

1236 Elon Place High Point, NC US 27263

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Report Id: GFL035 [WUSCAR] 06072663 (Generated: 02/01/2024 03:29:12) Rev: 1

Submitted By: JORGE COSTA