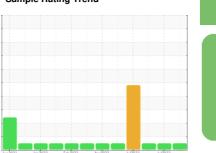


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 920056-102721

Component

Diesel Engine

CHEVRON DELO 400 MULTIGRADE 15W40 (--- LTR)

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

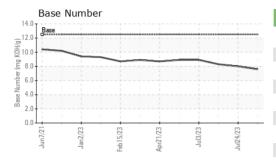
Fluid Condition

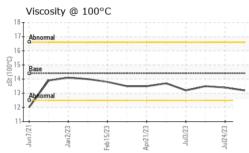
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

) (LTR)		Jun2021	Jan2023 Feb2023	Apr2023 Jul2023 Ji	12023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086327	GFL0086311	GFL0086314
Sample Date		Client Info		18 Aug 2023	24 Jul 2023	21 Jul 2023
Machine Age	hrs	Client Info		5181	5038	0
Oil Age	hrs	Client Info		4099	3956	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	16	16	14
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	10	8	7
Lead	ppm	ASTM D5185m	>45	0	0	0
Copper	ppm	ASTM D5185m	>85	11	2	2
Tin	ppm	ASTM D5185m	>4	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1	history2 98
	ppm					
Boron		ASTM D5185m	151	78	94	98
Boron Barium	ppm	ASTM D5185m ASTM D5185m	151 0.4	78 0	94	98
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4	78 0 90	94 0 94	98 0 92
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250	78 0 90 <1	94 0 94 <1	98 0 92 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250	78 0 90 <1 840	94 0 94 <1 878	98 0 92 <1 836
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046	78 0 90 <1 840 1414	94 0 94 <1 878 1411	98 0 92 <1 836 1414
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043	78 0 90 <1 840 1414 857	94 0 94 <1 878 1411 937	98 0 92 <1 836 1414 897
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	151 0.4 250 0 2046 1043 943	78 0 90 <1 840 1414 857 1054	94 0 94 <1 878 1411 937 1138	98 0 92 <1 836 1414 897 1119
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	151 0.4 250 0 2046 1043 943 5012	78 0 90 <1 840 1414 857 1054 3299	94 0 94 <1 878 1411 937 1138 3424	98 0 92 <1 836 1414 897 1119 3437
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base	78 0 90 <1 840 1414 857 1054 3299	94 0 94 <1 878 1411 937 1138 3424 history1	98 0 92 <1 836 1414 897 1119 3437 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base	78 0 90 <1 840 1414 857 1054 3299 current	94 0 94 <1 878 1411 937 1138 3424 history1	98 0 92 <1 836 1414 897 1119 3437 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >30	78 0 90 <1 840 1414 857 1054 3299 current 27	94 0 94 <1 878 1411 937 1138 3424 history1 6	98 0 92 <1 836 1414 897 1119 3437 history2 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >30	78 0 90 <1 840 1414 857 1054 3299 current 27 2 6	94 0 94 <1 878 1411 937 1138 3424 history1 6 1	98 0 92 <1 836 1414 897 1119 3437 history2 5 2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >30	78 0 90 <1 840 1414 857 1054 3299 current 27 2 6 current	94 0 94 <1 878 1411 937 1138 3424 history1 6 1 3	98 0 92 <1 836 1414 897 1119 3437 history2 5 2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >30 >20 limit/base	78 0 90 <1 840 1414 857 1054 3299 current 27 2 6 current 0.3	94 0 94 <1 878 1411 937 1138 3424 history1 6 1 3 history1 0.3	98 0 92 <1 836 1414 897 1119 3437 history2 5 2 5 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7624 *ASTM D7624 *ASTM D76145	151 0.4 250 0 2046 1043 943 5012 limit/base >30 >20 limit/base	78 0 90 <1 840 1414 857 1054 3299 current 27 2 6 current 0.3 8.6	94 0 94 <1 878 1411 937 1138 3424 history1 6 1 3 history1 0.3 8.4	98 0 92 <1 836 1414 897 1119 3437 history2 5 2 5 history2 0.3 8.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7624 *ASTM D7624 *ASTM D76145	151 0.4 250 0 2046 1043 943 5012 limit/base >30 >20 limit/base >3 >20 >3	78 0 90 <1 840 1414 857 1054 3299 current 27 2 6 current 0.3 8.6 23.2	94 0 94 <1 878 1411 937 1138 3424 history1 6 1 3 history1 0.3 8.4 21.3	98 0 92 <1 836 1414 897 1119 3437 history2 5 2 5 history2 0.3 8.4 21.4



OIL ANALYSIS REPORT

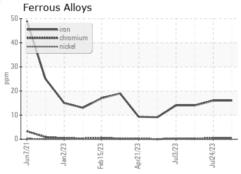


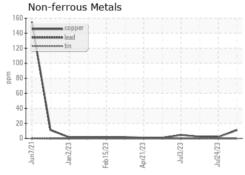


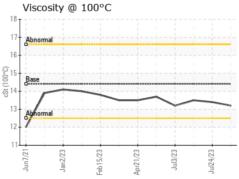
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

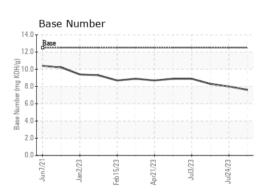
FLUID PROP	ERITES	method	ilmit/base		nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	14.4	13.2	13.4	13.5

GRAPHS













Certificate L2367

Test Package : FLEET

Laboratory Sample No. Lab Number **Unique Number**

: GFL0086327 : 05937021 : 10622292

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 29 Aug 2023 Diagnosed : 29 Aug 2023

Diagnostician : Wes Davis

GFL Environmental - 180 - Tuscaloosa Hauling

4701 12TH ST NE Tuscaloosa, AL US 35404

Contact: FREDERICK ROGERS

fred.rogers@gflenv.com

T:

* - 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: GFL180 [WUSCAR] 05937021 (Generated: 08/29/2023 19:34:59) Rev: 1

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