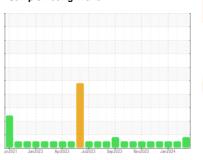


OIL ANALYSIS REPORT

Sample Rating Trend





920056-102721

Component

Diesel Engine

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

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

An increase in the copper level is noted. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

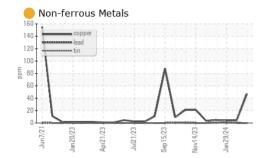
Fluid Condition

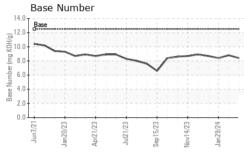
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

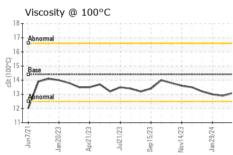
Sample Date Client Info 08 Mar 2024 29 Feb 2024 29 Jan 2024 Machine Age hrs Client Info 6269 6251 6075 Oil Age hrs Client Info 936 918 742 Oil Changed Client Info Not Changd N/A N/A Sample Status Image: Control of the Info Not Changd N/A N/A CONTAMINATION method Imitibase current Inistory1 history2 Fuel WC Method >5 <1.0	0 (LTR)						
Client Info	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 6269 6251 6075 Oil Age hrs Client Info 936 918 742 Oil Changed Client Info Not Changd N/A N/A Sample Status Image: Contract Info Not Changd N/A N/A CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG NEG Oligool WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >1 4 1 2 10 Chromium ppm ASTM D5185m >2 0 0 0 1 Silver ppm ASTM D5185m >2 0 0 0 1 Silver ppm ASTM D5185m >25 2 5<	Sample Number		Client Info		GFL0103455	GFL0103453	GFL0103443
Oil Age hrs Client Info 936 918 742 Oil Changed Client Info Not Changd N/A N/A Sample Status Image: Control Info Not Changd N/A N/A N/A CONTAMINATION method Imitibase current history2 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Water WC Method >5 <1.0 <1.0 <1.0 <1.0 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 4 12 10 Chromium ppm ASTM D5185m >4 <1 0 <1 1 Chromium ppm ASTM D5185m >2 0 0 0 <1 Nickel ppm ASTM D5185m >2 0 0 0 <1 Calcaitim ppm ASTM D5185m >4	Sample Date		Client Info		08 Mar 2024	29 Feb 2024	29 Jan 2024
Contained Client Info Not Change N/A N	Machine Age	hrs	Client Info		6269	6251	6075
CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		936	918	742
Fuel	Oil Changed		Client Info		Not Changd	N/A	N/A
Fuel	Sample Status				ATTENTION	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >11.0 4 12 10 Chromium ppm ASTM D5185m >4 <1	CONTAMINATION	NC	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 4 12 10 Chromium ppm ASTM D5185m >4 <1	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 4 12 10 Chromium ppm ASTM D5185m >4 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 <1 0 <1 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 2 5 5 Lead ppm ASTM D5185m >45 0 0 <1	WEAR METALS	;	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 2 5 5 Lead ppm ASTM D5185m >4 0 0 <1	Iron	ppm	ASTM D5185m	>110	4	12	10
Titanium	Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Sliver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 2 5 5 Lead ppm ASTM D5185m >45 0 0 <1 Copper ppm ASTM D5185m >85 47 4 4 Tin ppm ASTM D5185m 0 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0.4 0 0 0 0 Boron ppm ASTM D5185m 0.4 0 0 0 0 Barium ppm ASTM D5185m 0.4 0 0 0 0 Manganesium ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 0<	Nickel	ppm	ASTM D5185m	>2	0	0	0
Aluminum ppm ASTM D5185m >25 2 5 5 Lead ppm ASTM D5185m >45 0 0 <1	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >45 0 0 <1 Copper ppm ASTM D5185m >85 47 4 4 Tin ppm ASTM D5185m >4 <1 <1 0 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0.4 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0.4 0 0 0 ADDITIVES method limit/base current history1 histo	Silver	ppm					
Copper ppm ASTM D5185m >85 47 4 4 Tin ppm ASTM D5185m >4 <1	Aluminum	ppm	ASTM D5185m	>25		5	5
Tin	Lead	ppm					
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 151 25 38 41 Barium ppm ASTM D5185m 0.4 0 0 0 Molybdenum ppm ASTM D5185m 0.4 0 0 0 Molybdenum ppm ASTM D5185m 0.5 0 0 1 Manganese ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 2046 1071 1223 1123 Phosphorus ppm ASTM D5185m 943 1120 1158 1173 Sulfur ppm ASTM D5185m 95012 3096 3070	Copper	ppm	ASTM D5185m	>85	47	4	
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 151 25 38 41 Barium ppm ASTM D5185m 0.4 0 0 0 Molybdenum ppm ASTM D5185m 250 71 75 75 Manganese ppm ASTM D5185m 0 0 0 -1 Magnesium ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 2046 1071 1223 1123 Phosphorus ppm ASTM D5185m 943 1120 1158 1173 Sulfur ppm ASTM D5185m 943 1120 1158 1173 Sulfur ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m >30 4		ppm		>4			
ADDITIVES	Vanadium	ppm					
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0.4 0 0 0 Molybdenum ppm ASTM D5185m 250 71 75 75 Manganese ppm ASTM D5185m 0 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 250 71 75 75 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 2046 1071 1223 1123 Phosphorus ppm ASTM D5185m 1043 944 1010 970 Zinc ppm ASTM D5185m 943 1120 1158 1173 Sulfur ppm ASTM D5185m 5012 3096 3070 2993 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m >20 4 1 4 INFRA-RED method limit/base current	Boron	ppm				38	
Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 2046 1071 1223 1123 Phosphorus ppm ASTM D5185m 1043 944 1010 970 Zinc ppm ASTM D5185m 943 1120 1158 1173 Sulfur ppm ASTM D5185m 5012 3096 3070 2993 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m >20 4 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.2 Nitration Abs/cm *ASTM D7845 >30 </td <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0.4</td> <th>-</th> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m	0.4	-	0	0
Magnesium ppm ASTM D5185m 0 834 920 864 Calcium ppm ASTM D5185m 2046 1071 1223 1123 Phosphorus ppm ASTM D5185m 1043 944 1010 970 Zinc ppm ASTM D5185m 943 1120 1158 1173 Sulfur ppm ASTM D5185m 5012 3096 3070 2993 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m >20 4 1 4 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 0.1 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.2 7.5 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 </td <td></td> <td></td> <td>ASTM D5185m</td> <td>250</td> <th></th> <td>75</td> <td></td>			ASTM D5185m	250		75	
Calcium ppm ASTM D5185m 2046 1071 1223 1123 Phosphorus ppm ASTM D5185m 1043 944 1010 970 Zinc ppm ASTM D5185m 943 1120 1158 1173 Sulfur ppm ASTM D5185m 5012 3096 3070 2993 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m >20 4 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.2 7.5 6.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 19.5 18.8							



OIL ANALYSIS REPORT



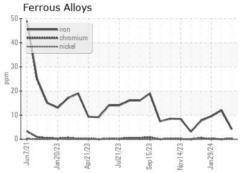


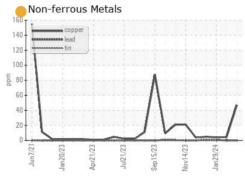


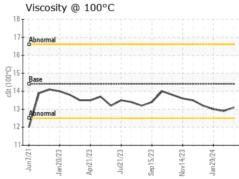
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

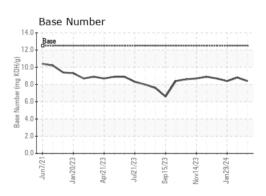
FLUID PROPI	EHILO					
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	12.9	13.0

GRAPHS













Certificate L2367

Laboratory

Sample No.

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0103455 Lab Number : 06116929

Unique Number : 10925762

Received **Tested** Diagnosed

: 13 Mar 2024 : 14 Mar 2024 : 14 Mar 2024 - Don Baldridge

GFL Environmental - 180 - Tuscaloosa Hauling

4701 12TH ST NE Tuscaloosa, AL US 35404

Contact: FREDERICK ROGERS fred.rogers@gflenv.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: