

## Machine Id **139322** Component **Diesel Engine** Fluid **CHEVRON DELO 400 MULTIGRADE 15W40 (44 GAL)**

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RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
No corrective action is recommended at this time. Resample at the next service interval to monitor.	Sample Number		Client Info		RPL0019730	RPL0016709	RPL0015266
	Sample Date		Client Info		20 May 2024	01 Mar 2024	19 Dec 2023
	Machine Age	mls	Client Info		215454	215454	193737
	Oil Age	mls	Client Info		193737	21717	60000
	Filter Age	mls	Client Info		0	21717	60000
	Oil Changed		Client Info		N/A	N/A	Changed
	Filter Changed		Client Info		N/A	N/A	Changed
	Sample Status				NORMAL	ABNORMAL	NORMAL
WEAR All component wear rates are normal.	Iron	ppm	ASTM D5185m	>165	89	53	16
	Chromium	ppm	ASTM D5185m	>5	3	2	<1
	Nickel	ppm	ASTM D5185m	>4	0	0	0
	Titanium	ppm	ASTM D5185m	>2	<1	0	0
	Silver	ppm	ASTM D5185m	>2	<1	0	0
	Aluminum	ppm	ASTM D5185m	>20	27	<u> </u>	11
	Lead	ppm	ASTM D5185m	>150	13	6	2
	Copper	ppm	ASTM D5185m	>90	3	2	<1
	Tin	ppm	ASTM D5185m	>5	2	<1	<1
	Vanadium	ppm	ASTM D5185m		<1	<1	0
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	0''''''''''''''''''''''''''''''''''''''				4.4	10	
CONTAMINATION	Silicon	ppm	ASTM D5185m	>35	14	10	/
Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m	>20	50	37	22
	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
	Water		WC Method	>0.2	NEG	NEG	NEG
	Glycol		WC Method		NEG	NEG	NEG
	Soot %	%	*ASTM D/844	>7.5	1	0.7	0.3
	Nitration	Abs/cm	*ASTM D/624	>20	14.5	12.7	10.0
	Sulfation	Abs/.1mm	*ASTM D/415	>30	33.3	29.6	25.2
	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
FLUID CONDITION	Sodium	ppm	ASTM D5185m		5	5	<1
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.	Boron	ppm	ASTM D5185m		43	64	134
	Barium	ppm	ASTM D5185m		0	0	0
	Molybdenum	ppm	ASTM D5185m		128	128	89
	Manganese	ppm	ASTM D5185m		2	<1	<1
	Magnesium	ppm	ASTM D5185m		752	716	615
	Calcium	ppm	ASTM D5185m		1566	1621	991
	Phosphorus	ppm	ASTM D5185m	1360	763	702	489
	Zinc	ppm	ASTM D5185m	1480	914	839	616

Sulfur

Oxidation

Visc @ 100°C cSt

ppm ASTM D5185m

Base Number (BN) mg KOH/g ASTM D2896 12.2

Abs/.1mm \*ASTM D7414 >25

ASTM D445 15.1

2480

29.7

5.2

13.6

1819

21.4

8.0

13.4

2831

36.1

3.9

13.8



Submitted By: REGGIE WILLIAMS Page 2 of 2