

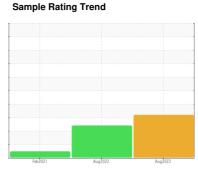
OIL ANALYSIS REPORT

4000 Series **FORD 4285**

Component

Gasoline Engine

PETRO CANADA DURON SHP 10W30 (7 LTR)





DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

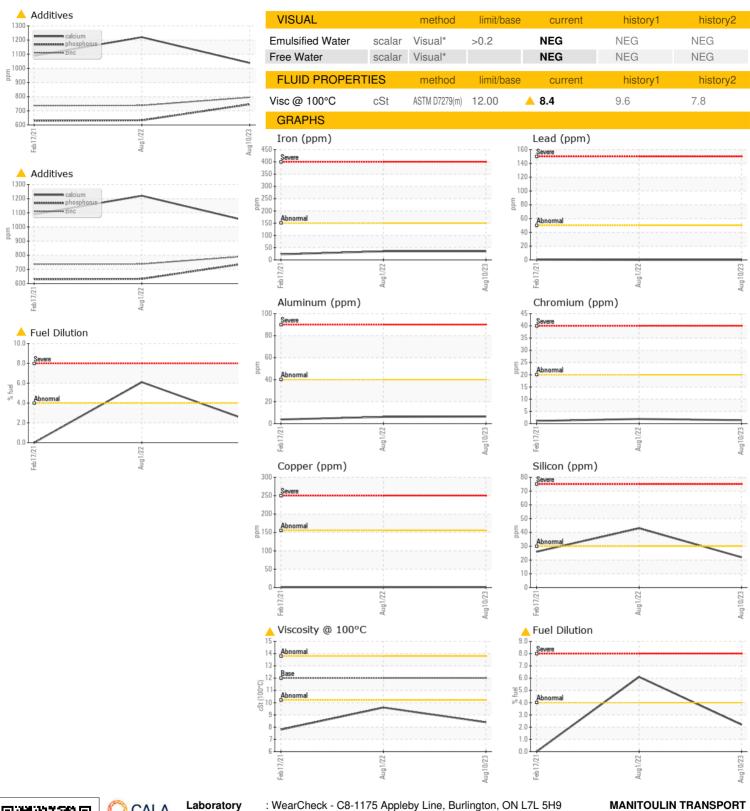
▲ Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The condition of the oil is acceptable for the time in service.

Sample Number Client Info WC0720935 WC0501604 WC050155 Sample Date Client Info 10 Aug 2023 01 Aug 2022 17 Feb 203 Machine Age kms Client Info 0	R)		Fel	b2021	Aug2022 Aug20	123	
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history
Machine Age kms	Sample Number		Client Info		WC0720935	WC0501604	WC050159
Oil Age kms Client Info 0 0 3566 Oil Changed Sample Status Client Info Changed ABNORMAL Changed ABNORMAL Changed ABNORMAL Changed ABNORMAL NCRMAL CONTAMINATION method limit/base current history1 history1 Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM 05185(m) >150 35 35 23 Chromium ppm ASTM 05185(m) >20 1 2 1 1 <1	Sample Date		Client Info		10 Aug 2023	01 Aug 2022	17 Feb 202
Coli Changed Status	Machine Age	kms	Client Info		84994	61543	32045
ABNORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history history	Oil Age	kms	Client Info		0	0	3566
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Changed
MEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185(m) >150 35 35 23 Chromium ppm ASTM D5185(m) >20 1 2 1 Nickel ppm ASTM D5185(m) >5 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Sample Status				ABNORMAL	ABNORMAL	NORMAL
WEAR METALS	CONTAMINATION	١	method	limit/base	current	history1	history
	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM DS18S(m) >20 1 2 1 Nickel ppm ASTM DS18S(m) >5 <1 <1 <1 Titanium ppm ASTM DS18S(m) >5 <1 <1 <1 Siliver ppm ASTM DS18S(m) >2 0 0 0 Aluminum ppm ASTM DS18S(m) >50 0 0 <1 Lead ppm ASTM DS18S(m) >50 0 0 <1 Copper ppm ASTM DS18S(m) >10 0 0 <1 Copper ppm ASTM DS18S(m) >10 0 <1 0 Vanadium ppm ASTM DS18S(m) 0 0 <1 0 Wanadium ppm ASTM DS18S(m) 0 0 0 0 Cadmium ppm ASTM DS18S(m) 0 0 0 0 ADDITIVES method limit/base current his	WEAR METALS		method	limit/base	current	history1	history
Nickel	Iron	ppm	ASTM D5185(m)	>150	35	35	23
Titanium	Chromium	ppm	ASTM D5185(m)	>20	1	2	1
Silver	Nickel	ppm	ASTM D5185(m)	>5	<1	<1	<1
Aluminum ppm ASTM D5185(m) >40 6 6 4 Lead ppm ASTM D5185(m) >50 0 0 <1 Copper ppm ASTM D5185(m) >155 1 <1 <1 <1 Tin ppm ASTM D5185(m) >10 0 <1 Antimony ppm ASTM D5185(m) >10 0 <1 0 Antimony ppm ASTM D5185(m) 0 0 <1 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185(m) 2 △ 40 38 14 Barium ppm ASTM D5185(m) 5 0 88 125 73 Manganese ppm ASTM D5185(m) 5 0 88 125 73 Manganese ppm ASTM D5185(m) 0 <1 1 1 1 Magnesium ppm ASTM D5185(m) 950 △ 511 445 410 Calcium ppm ASTM D5185(m) 995 △ 746 633 630 Phosphorus ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 1800 △ 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 △ 1810 1876 1740 CONTAMINANTS method limit/base current history1 history Solicon ppm ASTM D5185(m) >20 <1 8 19 Potassium ppm ASTM D5185(m) >20 <1 8 19 Potassium ppm ASTM D5185(m) >20 <1 8 19 INFRA-RED method limit/base current history1 history Soot % % ASTM D7844* 0 0 0 Nitration Abs/tmm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history1 history	Titanium	ppm	ASTM D5185(m)		<1	<1	0
Lead ppm ASTM D5185(m) >50 0 0 <1 Copper ppm ASTM D5185(m) >155 1 <1	Silver	ppm	ASTM D5185(m)	>2	0	0	0
Copper ppm ASTM D5185(m) >155 1 <1 <1 Tin ppm ASTM D5185(m) >10 0 0 <1	Aluminum	ppm	ASTM D5185(m)	>40	6	6	4
Tin ppm ASTM D5185(m) > 10 0 0 < 1 Antimony ppm ASTM D5185(m) 0 0 < 1 0 Antimony ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history Barium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 0 0 0 0 0 Molybdenum ppm ASTM D5185(m) 0 0 0 0 0 Molybdenum ppm ASTM D5185(m) 0 0 0 0 0 Manganese ppm ASTM D5185(m) 0 0 0 1 1 1 1 1 Magnesium ppm ASTM D5185(m) 950 ▲ 511 445 410 Calcium ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 995 ▲ 746 633 630 Zinc ppm ASTM D5185(m) 1180 ▲ 795 738 737 Sulfur ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 Lithium ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >20 <1 8 1 Fuel % ASTM D7593* >4.0 ▲ 2.2 ▲ 6.1 <1.0 INFRA-RED method limit/base current history1 history Soulfation Abs/tmm ASTM D7445* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history1 history Sulfation Abs/tmm ASTM D7445* >30 25.4 32.0 27.4	Lead	ppm	ASTM D5185(m)	>50	0	0	<1
Trin	Copper	ppm	ASTM D5185(m)	>155	1	<1	<1
Antimony ppm ASTM D5185(m) 0 <1 0 Vanadium ppm ASTM D5185(m) <1		ppm	ASTM D5185(m)	>10	0	0	<1
Vanadium ppm ASTM D5185(m) <1 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185(m) 2 40 38 14 Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 50 88 125 73 Manganese ppm ASTM D5185(m) 950 4511 445 410 Calcium ppm ASTM D5185(m) 950 4511 445 410 Calcium ppm ASTM D5185(m) 995 746 633 630 Zinc ppm ASTM D5185(m) 995 746 633 737 Sulfur ppm ASTM D5185(m) 2600 1810 1876 <	Antimony	ppm			0	<1	0
Description	Vanadium				<1	0	0
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history3 Boron ppm ASTM D5185(m) 2 ▲ 40 38 14 Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 50 88 125 73 Manganese ppm ASTM D5185(m) 0 <1	Beryllium				0	0	0
Boron ppm ASTM D5185(m) 2	•		. ,				0
Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 50 88 125 73 Manganese ppm ASTM D5185(m) 0 <1	ADDITIVES		method	limit/base	current	history1	history
Molybdenum ppm ASTM D5185(m) 50 88 125 73 Manganese ppm ASTM D5185(m) 0 <1 1 1 Magnesium ppm ASTM D5185(m) 950 ▲ 511 445 410 Calcium ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 1050 1038 1220 1089 Zinc ppm ASTM D5185(m) 995 ▲ 746 633 630 Zinc ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >30 22 43 26 Sodium <th< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185(m)</td><td>2</td><td>40</td><td>38</td><td>14</td></th<>	Boron	ppm	ASTM D5185(m)	2	4 0	38	14
Manganese ppm ASTM D5185(m) 0 <1 1 1 Magnesium ppm ASTM D5185(m) 950 ▲ 511 445 410 Calcium ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 995 ▲ 746 633 630 Zinc ppm ASTM D5185(m) 1180 ▲ 795 738 737 Sulfur ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium <	Barium	ppm	ASTM D5185(m)	0	0	0	0
Manganese ppm ASTM D5185(m) 0 <1 1 1 Magnesium ppm ASTM D5185(m) 950 ▲ 511 445 410 Calcium ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 995 ▲ 746 633 630 Zinc ppm ASTM D5185(m) 1180 ▲ 795 738 737 Sulfur ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1	Molybdenum	ppm	ASTM D5185(m)	50	88	125	73
Magnesium ppm ASTM D5185(m) 950 ▲ 511 445 410 Calcium ppm ASTM D5185(m) 1050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 995 ▲ 746 633 630 Zinc ppm ASTM D5185(m) 1180 ▲ 795 738 737 Sulfur ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1 8 1 Fuel % ASTM D7593* >4.0 2.2 ▲ 6.1 <1.0 INFRA-RED method		ppm	ASTM D5185(m)	0	<1	1	1
Calcium ppm ASTM D5185(m) 1 050 1038 1220 1089 Phosphorus ppm ASTM D5185(m) 995 ▲ 746 633 630 Zinc ppm ASTM D5185(m) 1180 ▲ 795 738 737 Sulfur ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1	Magnesium	ppm		950	<u></u> 511	445	410
Phosphorus ppm ASTM D5185(m) 995 4 746 633 630 Zinc ppm ASTM D5185(m) 1180 795 738 737 Sulfur ppm ASTM D5185(m) 2600 4 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 4 1810 1876 1740 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >30 22 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1 8 1 Fuel % ASTM D7693* >4.0 2.2 6.1 <1.0 INFRA-RED method limit/base current history1 history1 Soot % % ASTM D7844* 0 0 0 0 Nitration Abs/cm ASTM D7415* </td <td>-</td> <td></td> <td>ASTM D5185(m)</td> <td>1050</td> <td>1038</td> <td>1220</td> <td>1089</td>	-		ASTM D5185(m)	1050	1038	1220	1089
Zinc ppm ASTM D5185(m) 1180 795 738 737 Sulfur ppm ASTM D5185(m) 2600 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 1810 1876 1740 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >30 22 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1			. ,				
Sulfur ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 Lithium ppm ASTM D5185(m) 2600 ▲ 1810 1876 1740 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1 8 1 Fuel % ASTM D7693* >4.0 ▲ 2.2 ▲ 6.1 <1.0 INFRA-RED method limit/base current history1 history Soot % % ASTM D7844* 0 0 0 Nitration Abs/cm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history1 history	Zinc		. ,		-		
Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1	-		(/				
Silicon ppm ASTM D5185(m) >30 22 ▲ 43 26 Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1 8 1 Fuel % ASTM D7593* >4.0 ▲ 2.2 ▲ 6.1 <1.0 INFRA-RED method limit/base current history1 history Soot % % ASTM D7844* 0 0 0 Nitration Abs/cm ASTM D7624* >20 13.4 20.6 15.9 Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history1 history			` ,				
Sodium ppm ASTM D5185(m) >400 4 8 19 Potassium ppm ASTM D5185(m) >20 <1	CONTAMINANTS		method	limit/base	current	history1	history
Potassium ppm ASTM D5185(m) >20 <1 8 1 Fuel % ASTM D7593* >4.0 ▲ 2.2 ▲ 6.1 <1.0 INFRA-RED method limit/base current history1 history Soot % % ASTM D7844* 0 0 0 Nitration Abs/cm ASTM D7624* >20 13.4 20.6 15.9 Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history1 history	Silicon	ppm	ASTM D5185(m)	>30	22	4 3	26
Fuel % ASTM D7593* >4.0 ▲ 2.2 ▲ 6.1 <1.0 INFRA-RED method limit/base current history1 history1 Soot % % ASTM D7844* 0 0 0 Nitration Abs/cm ASTM D7624* >20 13.4 20.6 15.9 Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history1 history	Sodium	ppm	ASTM D5185(m)	>400	4	8	19
INFRA-RED method limit/base current history1 history Soot % % ASTM D7844* 0 0 0 Nitration Abs/cm ASTM D7624* >20 13.4 20.6 15.9 Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history1 history	Potassium	ppm	ASTM D5185(m)	>20	<1	8	1
Soot % % ASTM D7844* 0 0 0 Nitration Abs/cm ASTM D7624* >20 13.4 20.6 15.9 Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history history	Fuel	%	ASTM D7593*	>4.0	<u> </u>	△ 6.1	<1.0
Nitration Abs/cm ASTM D7624* >20 13.4 20.6 15.9 Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history history	INFRA-RED		method	limit/base	current	history1	history
Nitration Abs/cm ASTM D7624* >20 13.4 20.6 15.9 Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history history	Soot %	%	ASTM D7844*		0	0	0
Sulfation Abs/.1mm ASTM D7415* >30 25.4 32.0 27.4 FLUID DEGRADATION method limit/base current history history				>20			
-							
Oxidation Abs/.1mm ASTM D7414* >25 17.7 35.1 22.1	FLUID DEGRADA	TION	method	limit/base	current	history1	history
	Oxidation	Abs/.1mm	ASTM D7414*	>25	17.7	35.1	22.1



OIL ANALYSIS REPORT





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number

: WC0720935 : 02576166

Received Diagnosed : 5629226

: 17 Aug 2023 Diagnostician : Wes Davis

: 16 Aug 2023

Test Package : MOB 1 (Additional Tests: PercentFuel) To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

75 MUMFORD ROAD LIVELY, ON **CA P3Y 1L1**

Contact: Todd Smith tosmith@manitoulintransport.com T: (705)562-3302

F: x: