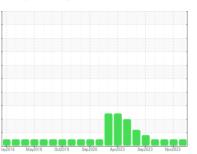


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
7981
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (20 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

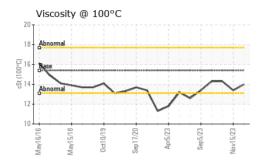
Fluid Condition

The condition of the oil is acceptable for the time in service.

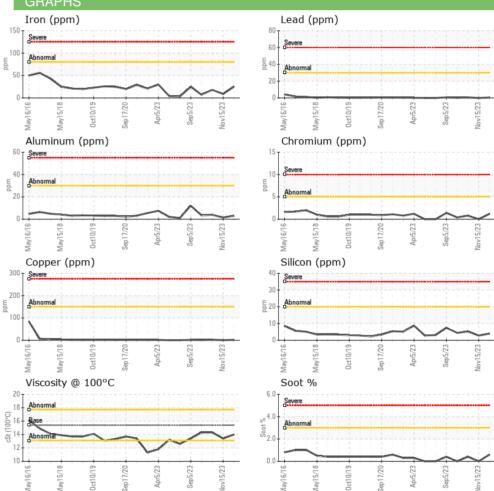
Sample Number Client Info GFL0111751 WC0875090 WC0875090 Sample Date Client Info 22 Feb 2024 15 Nov 2023 06 Nov 2023 Machine Age hrs Client Info 15807 155507 124718 Oil Age hrs Client Info O O O O O Oil Changed Cha	SAMPLE INFOR	RMATION	method_	limit/base	current	history1	history2
Sample Date						•	
Machine Age hrs Client Info 15807 155507 124718							
Oil Age	•	hrs					
Client Info Changed Changed Changed NORMAL NORMAL NORMAL NORMAL	•						
NORMAL NORMAL NORMAL NORMAL	•	1110			-		-
CONTAMINATION	•		Oliciti IIIIo			Ü	Ü
Fuel WC Method S5	·	FIGN		11 11 11			
Water WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >80 25 9 18 Chromium ppm ASTM D5185(m) >5 1 0 <1		ION				•	•
WEAR METALS							
WEAR METALS				>0.2	-		
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185(m) >5 1 0 <1	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185(m)	>80	25	9	18
Description	Chromium	ppm	ASTM D5185(m)	>5	1	0	<1
Silver	Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Aluminum	Titanium	ppm	ASTM D5185(m)		0	0	0
Lead	Silver	ppm	ASTM D5185(m)	>3	<1	<1	<1
Copper ppm ASTM D5185(m) >150 2 <1 2 Tin ppm ASTM D5185(m) >5 0 0 0 Antimony ppm ASTM D5185(m) 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm A	Aluminum	ppm	ASTM D5185(m)	>30	3	2	4
Tin	Lead	ppm	ASTM D5185(m)	>30	<1	0	<1
Antimony ppm ASTM D5185(m) 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 8 13 3 Barium ppm ASTM D5185(m) 0 0 <1	Copper	ppm	ASTM D5185(m)	>150	2	<1	2
Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 8 13 3 Barium ppm ASTM D5185(m) 0 0 <1	Tin	ppm	ASTM D5185(m)	>5	0	0	0
Beryllium	Antimony	ppm	ASTM D5185(m)		0	0	0
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 8 13 3 Barium ppm ASTM D5185(m) 0 0 <1	Vanadium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES	Beryllium	ppm	ASTM D5185(m)		0	0	0
Boron	Cadmium	ppm	ASTM D5185(m)		0	0	0
Barium ppm ASTM D5185(m) 0 c1 c1 Molybdenum ppm ASTM D5185(m) 60 62 9 60 Manganese ppm ASTM D5185(m) 0 0 0 0 Magnesium ppm ASTM D5185(m) 1010 952 41 928 Calcium ppm ASTM D5185(m) 1070 1107 2284 1085 Phosphorus ppm ASTM D5185(m) 1150 979 883 961 Zinc ppm ASTM D5185(m) 1270 1196 1021 1191 Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) <1 <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m)	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 60 62 9 60 Manganese ppm ASTM D5185(m) 0 0 0 0 Magnesium ppm ASTM D5185(m) 1010 952 41 928 Calcium ppm ASTM D5185(m) 1070 1107 2284 1085 Phosphorus ppm ASTM D5185(m) 1150 979 883 961 Zinc ppm ASTM D5185(m) 1270 1196 1021 1191 Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) 2060 2537 2933 2410 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m) >20 4 <1	Boron	ppm	ASTM D5185(m)	0	8	13	3
Manganese ppm ASTM D5185(m) 0 0 0 0 Magnesium ppm ASTM D5185(m) 1010 952 41 928 Calcium ppm ASTM D5185(m) 1070 1107 2284 1085 Phosphorus ppm ASTM D5185(m) 1150 979 883 961 Zinc ppm ASTM D5185(m) 1270 1196 1021 1191 Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) <1	Barium	ppm	ASTM D5185(m)	0	0	<1	<1
Magnesium ppm ASTM D5185(m) 1010 952 41 928 Calcium ppm ASTM D5185(m) 1070 1107 2284 1085 Phosphorus ppm ASTM D5185(m) 1150 979 883 961 Zinc ppm ASTM D5185(m) 1270 1196 1021 1191 Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) 2060 2537 2933 2410 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m) >20 4 3 5 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.6 0 0.4 Nitration Abs/cm AS	Molybdenum	ppm	ASTM D5185(m)	60	62	9	60
Calcium ppm ASTM D5185(m) 1070 1107 2284 1085 Phosphorus ppm ASTM D5185(m) 1150 979 883 961 Zinc ppm ASTM D5185(m) 1270 1196 1021 1191 Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) <1	Manganese	ppm	ASTM D5185(m)	0	0	0	0
Phosphorus ppm ASTM D5185(m) 1150 979 883 961 Zinc ppm ASTM D5185(m) 1270 1196 1021 1191 Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m) >20 4 <1 5 Potassium ppm ASTM D5185(m) >20 4 <1 5 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.6 0 0.4 Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	Magnesium	ppm	ASTM D5185(m)	1010	952	41	928
Zinc ppm ASTM D5185(m) 1270 1196 1021 1191 Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) <1	Calcium	ppm	ASTM D5185(m)	1070	1107	2284	1085
Sulfur ppm ASTM D5185(m) 2060 2537 2933 2410 Lithium ppm ASTM D5185(m) 2060 2537 2933 2410 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m) 7 2 7 Potassium ppm ASTM D5185(m) >20 4 <1 5 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.6 0 0.4 Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	Phosphorus	ppm	ASTM D5185(m)	1150	979	883	961
Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m) 7 2 7 Potassium ppm ASTM D5185(m) >20 4 <1	Zinc	ppm	ASTM D5185(m)	1270	1196	1021	1191
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m) 7 2 7 Potassium ppm ASTM D5185(m) >20 4 <1 5 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.6 0 0.4 Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	Sulfur	ppm	ASTM D5185(m)	2060	2537	2933	2410
Silicon ppm ASTM D5185(m) >20 4 3 5 Sodium ppm ASTM D5185(m) 7 2 7 Potassium ppm ASTM D5185(m) >20 4 <1	Lithium	ppm	ASTM D5185(m)		<1	<1	<1
Sodium ppm ASTM D5185(m) 7 2 7 Potassium ppm ASTM D5185(m) >20 4 <1	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185(m) >20 4 <1 5 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.6 0 0.4 Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	Silicon	ppm	ASTM D5185(m)	>20	4	3	5
INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.6 0 0.4 Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	Sodium	ppm	ASTM D5185(m)		7	2	7
Soot % % ASTM D7844* >3 0.6 0 0.4 Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	Potassium	ppm	ASTM D5185(m)	>20	4	<1	5
Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm ASTM D7624* >20 12.7 7.7 11.1	Soot %	%	ASTM D7844*	>3	0.6	0	0.4



OIL ANALYSIS REPORT



FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	21.7	12.7	19.7
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	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 PROPE	ERTIES	method	limit/base	current	history1	history2
/isc @ 100°C	cSt	ASTM D7279(m)	15.4	14.0	13.4	14.3
GRAPHS						
Iron (ppm)				Lead (ppm)		
Severe			80	Savera		
Abnormal			60 E 40	Severe		





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No.

: GFL0111751 Lab Number : 02617968 Unique Number : 5735078

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received **Tested**

Diagnosed Test Package : MOB 1 (Additional Tests: Visual)

: 26 Feb 2024 : 26 Feb 2024

: 26 Feb 2024 - Wes Davis

GFL Environmental - 217 - Aurora 14131 BAYVIEW AVE, AURORA YARD AURORA, ON CA L4G 0K6

Contact: Mike Havens MHavens@gflenv.com T:

F: (905)713-2445

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.

Submitted By: Scott Ewan