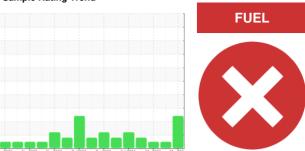


PROBLEM SUMMARY

Sample Rating Trend



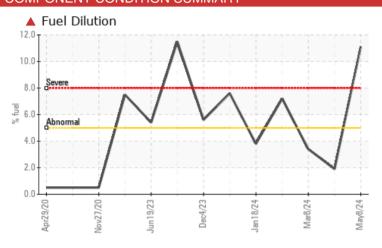
Machine Id

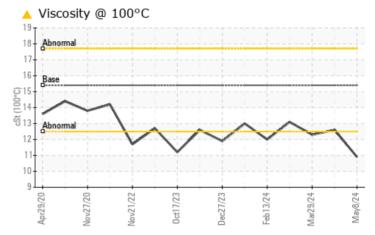
920092-260371

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS									
Sample Status				SEVERE	NORMAL	NORMAL			
Fuel	%	ASTM D3524	>5	▲ 11.1	<1.0	1.9			
Visc @ 100°C	cSt	ASTM D445	15.4	10.9	12.6	12.3			

Customer Id: GFL837 Sample No.: GFL0118769 Lab Number: 06176740 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS							
Action	Status	Date	Done By	Description			
Resample			?	We recommend an early resample to monitor this condition.			
Check Fuel/injector System			?	We advise that you check the fuel injection system.			

HISTORICAL DIAGNOSIS

23 Apr 2024 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



NORMAL



29 Mar 2024 Diag: Wes Davis

No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



08 Mar 2024 Diag: Wes Davis



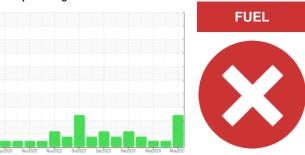
No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

920092-260371

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

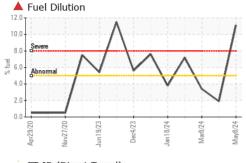
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

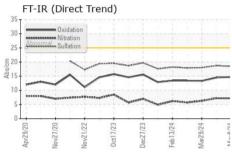
Machine Age hrs Client Info 24135 24039 23907 Oil Age hrs Client Info 24761 23895 266 Oil Changed Client Info Changed Not Changd	iAL)		Apr2020 No	v2020 Nov2022 Oct20	23 Dec2023 Feb2024 Mar20	24 May202	
Client Info O8 May 2024 23 Apr 2024 29 Mar 2024	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 24135 24039 23907 Oil Age hrs Client Info 24761 23895 266 Oil Changed Client Info Changed Not Changd	Sample Number		Client Info		GFL0118769	GFL0118796	GFL0114131
Oil Age hrs Client Info 24761 23895 266 Oil Changed Client Info Changed Not Changd <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <td>08 May 2024</td> <td>23 Apr 2024</td> <td>29 Mar 2024</td>	Sample Date		Client Info		08 May 2024	23 Apr 2024	29 Mar 2024
Colient Info	Machine Age	hrs	Client Info		24135	24039	23907
Sever Normal N	Oil Age	hrs	Client Info		24761	23895	266
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 11 10 9 Chromium ppm ASTM D5185m >20 1 <1	Oil Changed		Client Info		Changed	Not Changd	Not Changd
Water WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 11 10 9 Chromium ppm ASTM D5185m >20 1 <1 <1 <1 Nickel ppm ASTM D5185m >4 0 0 0 <1 Silver ppm ASTM D5185m >4 0 0 0 <1 Silver ppm ASTM D5185m >3 0 0 0 <1 Silver ppm ASTM D5185m >30 0 0 0 <1 Silver ppm ASTM D5185m >40 0 0 0 <1 Copper ppm ASTM D5185m >40 0 0 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 <1	Sample Status				SEVERE	NORMAL	NORMAL
WEAR METALS	CONTAMINAT	TION	method	limit/base	current	history1	history2
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 1 <1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >40 0 0 0 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >40 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 -1 Vanadium ppm ASTM D5185m 0 0 0 -1 Cadmium ppm ASTM D5185m 0 2 -1 0 Boron ppm ASTM D5185m 0 2 -1 0 <td>WEAR METAL</td> <td>_S</td> <td>method</td> <td>limit/base</td> <td>current</td> <td>history1</td> <td>history2</td>	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	11	10	9
Nickel	Chromium		ASTM D5185m	>20	1	<1	<1
Description	Nickel		ASTM D5185m	>4	0	0	0
Aluminum ppm ASTM D5185m >20 2 2 2 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 3 0 <1	Titanium	ppm	ASTM D5185m		0	0	<1
Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 3 0 <1 Tin ppm ASTM D5185m >15 <1 <1 <1 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 2 <1 0 Barium ppm ASTM D5185m 0 0 <1 0 Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 0 1 0 <1 Magnesium ppm ASTM D5185m 1010 853 884 872 Calcium ppm ASTM D5185m 1270 1100 1155 <td>Silver</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>3</td> <td>0</td> <td>0</td> <td>0</td>	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 3 0 <1 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	2	2	2
Tin ppm ASTM D5185m > 15 <1 <1 <1 <1 <1	Lead	ppm	ASTM D5185m	>40	0	0	0
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 0 Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 0 1 0 <1 Manganese ppm ASTM D5185m 0 1 0 <1 Magnesium ppm ASTM D5185m 1010 853 884 872 Calcium ppm ASTM D5185m 1070 944 981 1024 Phosphorus ppm ASTM D5185m 1270 1100 1155 1160 Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	3	0	<1
Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 0 Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 50 56 56 Manganese ppm ASTM D5185m 0 1 0 <1 Magnesium ppm ASTM D5185m 1010 853 884 872 Calcium ppm ASTM D5185m 1070 944 981 1024 Phosphorus ppm ASTM D5185m 1150 902 935 1024 Zinc ppm ASTM D5185m 1270 1100 1155 1160 Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current	Tin	ppm	ASTM D5185m	>15	<1	<1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1	Vanadium	ppm	ASTM D5185m		0	0	<1
Boron	Cadmium	ppm	ASTM D5185m		0	0	<1
Barium ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 50 56 56 Manganese ppm ASTM D5185m 0 1 0 <1	Boron	ppm	ASTM D5185m	0	2	<1	0
Manganese ppm ASTM D5185m 0 1 0 <1 Magnesium ppm ASTM D5185m 1010 853 884 872 Calcium ppm ASTM D5185m 1070 944 981 1024 Phosphorus ppm ASTM D5185m 1150 902 935 1024 Zinc ppm ASTM D5185m 1270 1100 1155 1160 Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 25 4 6 5 Sodium ppm ASTM D5185m 20 0 0 2 Fuel % ASTM D5185m >20 0 0 2 Fuel % ASTM D5185m >20 0 0 2 Fuel % ASTM D5185m >3 0.	Barium	ppm	ASTM D5185m	0	0	<1	0
Magnesium ppm ASTM D5185m 1010 853 884 872 Calcium ppm ASTM D5185m 1070 944 981 1024 Phosphorus ppm ASTM D5185m 1150 902 935 1024 Zinc ppm ASTM D5185m 1270 1100 1155 1160 Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 5 Sodium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D5185m >20 0 0 2 Fuel % ASTM D5185m >20 0 0 2 Fuel % ASTM D5185m >20 0 0 2 Soot % % *ASTM D7844 >3	Molybdenum	ppm	ASTM D5185m	60	50	56	56
Calcium ppm ASTM D5185m 1070 944 981 1024 Phosphorus ppm ASTM D5185m 1150 902 935 1024 Zinc ppm ASTM D5185m 1270 1100 1155 1160 Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 5 Sodium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D5185m >20 0 0 0 2 Soot % %	Manganese	ppm	ASTM D5185m	0	1	0	<1
Phosphorus ppm ASTM D5185m 1150 902 935 1024 Zinc ppm ASTM D5185m 1270 1100 1155 1160 Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 5 Sodium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D3524 >5 ▲ 11.1 <1.0	Magnesium	ppm	ASTM D5185m	1010	853	884	872
Zinc ppm ASTM D5185m 1270 1100 1155 1160 Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 5 Sodium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D5185m >20 0 0 2 Fuel % ASTM D3524 >5 ▲ 11.1 <1.0	Calcium	ppm	ASTM D5185m	1070	944	981	1024
Sulfur ppm ASTM D5185m 2060 2955 3181 3066 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 5 Sodium ppm ASTM D5185m 20 0 0 2 Fuel % ASTM D5185m >20 0 0 2 Soot % % ASTM D3524 >5 11.1 <1.0	Phosphorus	ppm	ASTM D5185m	1150	902	935	1024
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 5 Sodium ppm ASTM D5185m 4 8 4 Potassium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D3524 >5 ▲ 11.1 <1.0	Zinc	ppm	ASTM D5185m	1270	1100	1155	1160
Silicon ppm ASTM D5185m >25 4 6 5 Sodium ppm ASTM D5185m 4 8 4 Potassium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D3524 >5 ▲ 11.1 <1.0 1.9 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 7.2 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Sulfur	ppm	ASTM D5185m	2060	2955	3181	3066
Sodium ppm ASTM D5185m 4 8 4 Potassium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D3524 >5 ▲ 11.1 <1.0	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 0 2 Fuel % ASTM D3524 >5 ▲ 11.1 <1.0 1.9 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 7.2 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Silicon	ppm	ASTM D5185m	>25	4	6	5
Fuel % ASTM D3524 >5 ▲ 11.1 <1.0 1.9 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 7.2 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Sodium	ppm	ASTM D5185m		4	8	4
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 7.2 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Potassium	ppm	ASTM D5185m	>20	0	0	2
Soot % % *ASTM D7844 >3 0.4 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 7.2 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Fuel	%	ASTM D3524	>5	▲ 11.1	<1.0	1.9
Nitration Abs/cm *ASTM D7624 >20 7.2 7.2 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 7.2 7.2 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Soot %	%	*ASTM D7844	>3	0.4	0.5	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 18.5 18.7 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Nitration	Abs/cm	*ASTM D7624	>20	7.2	7.2	
Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.5 13.3	Sulfation	Abs/.1mm	*ASTM D7415	>30			
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.7	14.5	13.3
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.0	7.7	8.1

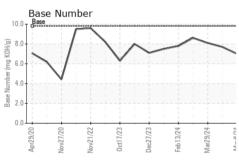


OIL ANALYSIS REPORT



	Mitra						
23	Sulf	ation					
E 20							_
10			Walter Parkers				
******	THE PERSON NAMED IN			SHARING SAN	SCHOOL SECTION	STREET	
5							
******	Nov27/20	Nov21/22	Oct17/23	Dec27/23 -	Feb13/24 -	Mar29/24 -	200

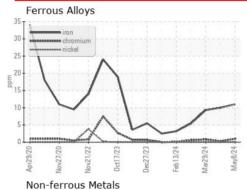


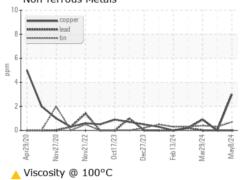


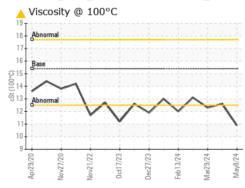
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

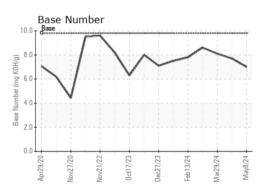
FLUID PROPI	ERITES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	<u> </u>	12.6	12.3

GRAPHS













Certificate 12367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0118769 Lab Number : 06176740 Unique Number : 11022793

Received : 13 May 2024 : 15 May 2024 **Tested** Diagnosed

: 15 May 2024 - Wes Davis Test Package: FLEET (Additional Tests: FuelDilution, PercentFuel)

US 64701 Contact: SARA PATRICK spatrick@gflenv.com T:

22820 S State Route 291

Harrisonville, MO

GFL Environmental - 837 - Harrison TS

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)

Report Id: GFL837 [WUSCAR] 06176740 (Generated: 05/15/2024 14:15:14) Rev: 1

Submitted By: JEREMY BROWN

F: