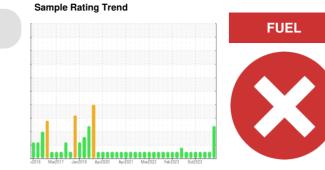


PROBLEM SUMMARY

PETRO CANADA DURON SHP 15W40 (6 GAL)

FREIGHTLINER 10619

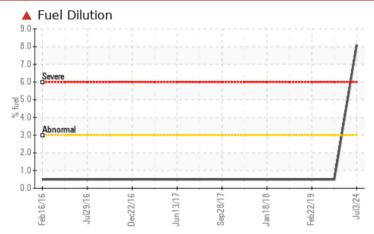


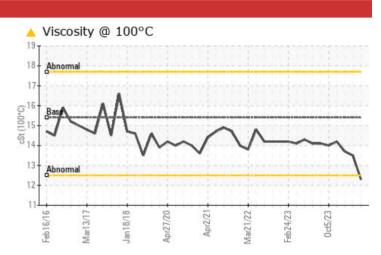
COMPONENT CONDITION SUMMARY

Area

(MP7991)

Diesel Engine





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	>3.0	A 8.1	<1.0	<1.0		
Visc @ 100°C	cSt	ASTM D445	15.4	12.3	13.5	13.7		

Customer Id: GFL331 Sample No.: GFL0087510 Lab Number: 06231320 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



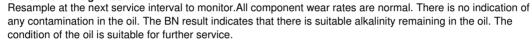
01 Apr 2024 Diag: Wes Davis

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.



07 Feb 2024 Diag: Wes Davis

NORMAL





10 Oct 2023 Diag: Wes Davis

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.





view report

view report





OIL ANALYSIS REPORT

Sample Rating Trend

.....

FUEL \mathbf{X}



Area

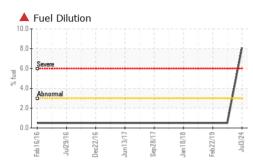
(MP7991) **FREIGHTLINER 10619** Diesel Engine

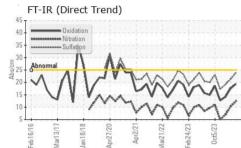
PETRO CANADA DURON SHP 15W40 (6 GAL)

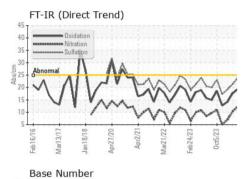
DIAGNOSIS	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
A Recommendation	Sample Number		Client Info		GFL0087510	GFL0109604	GFL0109581
We advise that you check the fuel injection system.	Sample Date		Client Info		03 Jul 2024	01 Apr 2024	07 Feb 2024
The oil change at the time of sampling has been	Machine Age	hrs	Client Info		11104	10523	10183
noted. We recommend an early resample to monitor this condition.	Oil Age	hrs	Client Info		581	1053	719
	Oil Changed		Client Info		Changed	Changed	Not Changd
Wear All component wear rates are normal.	Sample Status				SEVERE	NORMAL	NORMAL
▲ Contamination	CONTAMINAT	ION	method	limit/base	current	history1	history2
There is a high amount of fuel present in the oil.	Water		WC Method	>0.2	NEG	NEG	NEG
Tests confirm the presence of fuel in the oil.	Glycol		WC Method		NEG	NEG	NEG
Fluid Condition The BN result indicates that there is suitable	WEAR METAL	S	method	limit/base	current	history1	history2
alkalinity remaining in the oil. Fuel is present in the	Iron	ppm	ASTM D5185m	>90	44	42	16
oil and is lowering the viscosity. The oil is no longer	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
serviceable due to the presence of contaminants.	Nickel	ppm	ASTM D5185m	>2	0	<1	<1
	Titanium	ppm	ASTM D5185m	>2	0	0	<1
	Silver	ppm	ASTM D5185m	>2	0	0	0
	Aluminum	ppm	ASTM D5185m	>20	2	3	1
	Lead	ppm	ASTM D5185m	>40	8	3	1
	Copper	ppm	ASTM D5185m	>330	7	47	24
	Tin	ppm	ASTM D5185m		0	<1	<1
	Vanadium	ppm	ASTM D5185m		0	<1	0
	Cadmium	ppm	ASTM D5185m		0	0	<1
	ADDITIVES		method	limit/base	current	history1	history2
	Boron	ppm	ASTM D5185m		5	6	8
		ppm ppm		0	5 0	6 0	8 <1
	Boron		ASTM D5185m	0			
	Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	0	0	<1
	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 66	0 68	<1 59
	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 66 <1	0 68 <1	<1 59 <1
	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 66 <1 852	0 68 <1 975	<1 59 <1 843
	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	0 66 <1 852 1146	0 68 <1 975 1189	<1 59 <1 843 1075
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 66 <1 852 1146 975	0 68 <1 975 1189 1035	<1 59 <1 843 1075 957
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 66 <1 852 1146 975 1177	0 68 <1 975 1189 1035 1316	<1 59 <1 843 1075 957 1133
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	0 66 <1 852 1146 975 1177 2897	0 68 <1 975 1189 1035 1316 3091	<1 59 <1 843 1075 957 1133 3027
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	0 66 <1 852 1146 975 1177 2897 current	0 68 <1 975 1189 1035 1316 3091 history1	<1 59 <1 843 1075 957 1133 3027 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Iimit/base	0 66 <1 852 1146 975 1177 2897 current 10	0 68 <1 975 1189 1035 1316 3091 <u>history1</u> 14	<1 59 <1 843 1075 957 1133 3027 history2 11
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 66 <1 852 1146 975 1177 2897 <u>current</u> 10 53	0 68 <1 975 1189 1035 1316 3091 history1 14 10	<1 59 <1 843 1075 957 1133 3027 history2 11 <1
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 66 <1 852 1146 975 1177 2897 <u>current</u> 10 53 25	0 68 <1 975 1189 1035 1316 3091 history1 14 10 7	<1 59 <1 843 1075 957 1133 3027 history2 11 <1 5
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >225 >20 >3.0	0 66 <1 852 1146 975 1177 2897 Current 10 53 25 ▲ 8.1	0 68 <1 975 1189 1035 1316 3091 <u>history1</u> 14 10 7 <1.0	<1 59 <1 843 1075 957 1133 3027 history2 11 <1 5 <1.0
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20 >3.0 Imit/base >6	0 66 <1 852 1146 975 1177 2897 Current 10 53 25 ▲ 8.1 Current	0 68 <1 975 1189 1035 1316 3091 history1 14 10 7 <1.0 history1	<1 59 <1 843 1075 957 1133 3027 history2 11 <1 5 <1.0 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 >3.0 imit/base >20 imit/base	0 66 <1 852 1146 975 1177 2897 Current 10 53 25 ▲ 8.1 Current 2.1	0 68 <1 975 1189 1035 1316 3091 history1 14 10 7 <1.0 history1 1.4	<1 59 <1 843 1075 957 1133 3027 history2 11 <1 5 <1.0 history2 0.6
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 >3.0 imit/base >20 imit/base	0 66 <1 852 1146 975 1177 2897 Current 10 53 25 ▲ 8.1 Current 2.1 12.4	0 68 <1 975 1189 1035 1316 3091 <u>history1</u> 14 10 7 <1.0 <u>history1</u> 1.4 1.4	<1 59 <1 843 1075 957 1133 3027 history2 11 <1 5 <1.0 history2 0.6 7.0
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAM	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 >3.0 imit/base >6 >20 >30 imit/base	0 66 <1 852 1146 975 1177 2897 Current 10 53 25 ▲ 8.1 Current 2.1 12.4 23.9 Current	0 68 <1 975 1189 1035 1316 3091 history1 14 10 7 <1.0 history1 1.4 10.3 21.4 history1	<1 59 <1 843 1075 957 1133 3027 1133 3027 11 <11 <1 5 <10 <10 10 istory2 0.6 7.0 19.2 istory2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >3.0 imit/base >30 imit/base >30	0 66 <1 852 1146 975 1177 2897 Current 10 53 25 ▲ 8.1 Current 2.1 12.4 23.9	0 68 <1 975 1189 1035 1316 3091 history1 14 10 7 <1.0 history1 1.4 1.4 10.3 21.4	<1 59 <1 843 1075 957 1133 3027 history2 11 <1 5 <1.0 history2 0.6 7.0 19.2

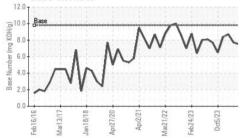


OIL ANALYSIS REPORT





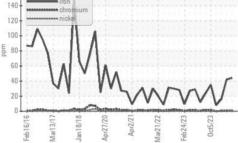




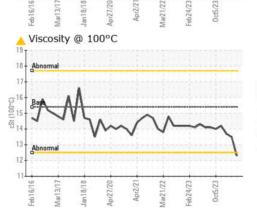
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.3	13.5	13.7
GRAPHS						

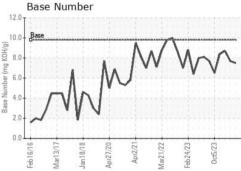
Ferrous Alloys

160



Non-ferrous Metals 120 100 lead 80 E 60 40 20





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 331 - Columbus Sample No. Received : GFL0087510 : 09 Jul 2024 180 Ada Moore Rd Lab Number : 06231320 Tested : 11 Jul 2024 Columbus, NC Unique Number : 11114813 Diagnosed : 11 Jul 2024 - Wes Davis US 28722 Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel) Contact: Matt Segars Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. matt.segars@gflenv.com T: (800)207-6618 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. F: (252)617-2494

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: GFL331 [WUSCAR] 06231320 (Generated: 07/11/2024 09:52:46) Rev: 1

Submitted By: Matt Segars