

# **OIL ANALYSIS REPORT**



### Machine Id

## 526059

## Diesel Engine

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

#### 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0120606	GFL0108449	
Sample Date		Client Info		06 May 2024	29 Apr 2024	
Machine Age	hrs	Client Info		0	0	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	2	12	
Chromium	ppm	ASTM D5185m	>20	0	1	
Nickel	ppm	ASTM D5185m	>2	0	4	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	>2	0	<1	
Aluminum	ppm	ASTM D5185m	>25	<1	2	
Lead	ppm	ASTM D5185m	>40	0	2	
Copper	ppm	ASTM D5185m	>330	0	2	
Tin	ppm	ASTM D5185m	>15	0	2	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	2	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 3	history1 <1	history2
	ppm ppm					
Boron		ASTM D5185m	0	3	<1	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 0	<1 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 62	<1 0 55	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 62 0	<1 0 55 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	3 0 62 0 982	<1 0 55 1 1034	
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	3 0 62 0 982 1142	<1 0 55 1 1034 1186	   
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	3 0 62 0 982 1142 1052	<1 0 55 1 1034 1186 1154	   
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	3 0 62 0 982 1142 1052 1237	<1 0 55 1 1034 1186 1154 1349	    
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	3 0 62 0 982 1142 1052 1237 3881	<1 0 55 1 1034 1186 1154 1349 4017	
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 1010 1070 1150 1270 2060	3 0 62 0 982 1142 1052 1237 3881 current	<1 0 55 1 1034 1186 1154 1349 4017 history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m 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	3 0 62 0 982 1142 1052 1237 3881 current 4	<1 0 55 1 1034 1186 1154 1349 4017 history1 4	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m 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 <b>limit/base</b>	3 0 62 0 982 1142 1052 1237 3881 current 4 3	<1 0 55 1 1034 1186 1154 1349 4017 history1 4 10	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	3 0 62 0 982 1142 1052 1237 3881 current 4 3 0	<1 0 55 1 1034 1186 1154 1349 4017 history1 4 10 3	      history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	3 0 62 0 982 1142 1052 1237 3881 current 4 3 0 0	<1 0 55 1 1034 1186 1154 1349 4017 history1 4 10 3 history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	3 0 62 0 982 1142 1052 1237 3881 current 4 3 0 current 0.1	<1 0 55 1 1034 1186 1154 1349 4017 history1 4 10 3 history1 0.2	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 1imit/base >22 20	3 0 62 0 982 1142 1052 1237 3881 <i>current</i> 4 3 0 <i>current</i> 0.1 4.5	<1 0 55 1 1034 1186 1154 1349 4017 <b>history1</b> 4 10 3 <b>history1</b> 0.2 6.3	      history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 20 320 33 20 20	3 0 62 0 982 1142 1052 1237 3881 <u>current</u> 4 3 0 <u>current</u> 0.1 4.5 18.0	<1 0 55 1 1034 1186 1154 1349 4017 <b>history1</b> 4 10 3 <b>history1</b> 0.2 6.3 17.8	     history2   history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 33 220 230 20 23 30	3 0 62 0 982 1142 1052 1237 3881 <i>current</i> 4 3 3 0 <i>current</i> 0.1 4.5 18.0	<1 0 55 1 1034 1186 1154 1349 4017 <b>history1</b> 4 10 3 <b>history1</b> 0.2 6.3 17.8 <b>history1</b>	      history2  history2  history2  history2

Contact/Location: See also GFL904,A,B,C, 927, 938) - Andy Kane - GFL904 Page 1 of 2



F 35 30 25 u20-Abs/cm 15-10-

0.

10.0 T

(B/HOJ Base Number (mg KOH/g) 4.0 2.0

0.0

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# **OIL ANALYSIS REPORT**

	Map624	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C	scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NORML NORML >0.2	NONE NONE NONE NONE NONE NORML NORML NEG	NONE NONE NONE NONE NONE NORML NORML NEG	
		Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE	scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NORML NORML	NONE NONE NONE NORML NORML NEG	NONE NONE NONE NORML NORML	   
		Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE	scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NORML NORML	NONE NONE NORML NORML NEG	NONE NONE NORML NORML	  
		Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NONE NORML NORML	NONE NORML NORML NEG	NONE NORML NORML	
		Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NORML NORML	NONE NORML NORML NEG	NONE NORML NORML	
		Appearance Odor Emulsified Water Free Water FLUID PROPE	scalar scalar scalar scalar	*Visual *Visual *Visual	NORML NORML	NORML NORML NEG	NORML NORML	
		Odor Emulsified Water Free Water FLUID PROPE	scalar scalar scalar	*Visual *Visual	NORML	NORML NEG	NORML	
		Emulsified Water Free Water FLUID PROPE	scalar scalar	*Visual		NEG		
		Free Water FLUID PROPE	scalar		>0.2		NEG	
		FLUID PROPE		*Visual				
			ERTIES			NEG	NEG	
		Visc @ 100°C			limit/base	current	history1	history2
			cSt	ASTM D445	15.4	14.7	13.9	
		GRAPHS						
		Ferrous Alloys						
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CCREDITED								pewa Falls, WI
TESTING LABORATORY	Unique Number	: 11029683				es Davis	k	US 54729
Certificate L2367	Test Package	: FLEET	-		-		Cont	act: Andy Kane
								(715)202-3420
-	o discuss this - Denotes tes	Laboratory Sample No. Lab Number Unique Number Test Package o discuss this sample report, Denotes test methods that	Image: state stat	Image: Sample No. Laboratory Sample No. Lab Number Test Package : WearCheck USA - 501 Madisc GFL0120606 : GFL0120606 : GFL01206 : GFL01206	Laboratory :: WearCheck USA - 501 Madison Ave., Cary Sample No. : GFL0120606 :: Received :: 1- Lab Number :: 1029683 :: Diagnosed :: 14 Unique Number :: 11029683 :: Diagnosed :: 14 Witter Lab Sample report, contact Customer Service at 1-800-237-136 Denotes test methods that are outside of the ISO 17025 scope of accret	Laboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. :: GFL0120606 Receive 3: 14 May 2024 Witter 1207 biology biology bio	Image: second	Leboratory :: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No.: GFL DI2635 Export No.: FERCING Received :: 14 May 2024 Diagnosed :: 14

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

Contact/Location: See also GFL904,A,B,C, 927, 938) - Andy Kane - GFL904 Page 2 of 2