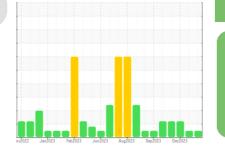


# **OIL ANALYSIS REPORT**

Sample Rating Trend



 $\checkmark$ 

NORMAL

723008 Component Diesel Engine Fluid

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

SAMPLE INFORMATION method

## DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Machine Id

### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

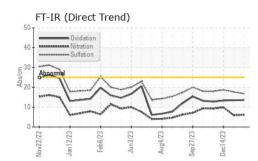
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

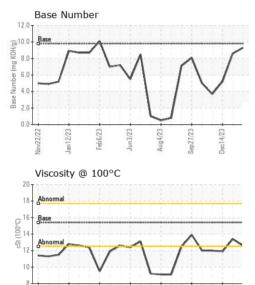
		methou	IIIIII/Dase	current	TIIStOLA	TIStoryz
Sample Number		Client Info		GFL0113735	GFL0111097	GFL0094779
Sample Date		Client Info		16 Apr 2024	31 Jan 2024	14 Dec 2023
Machine Age	hrs	Client Info		23214	23121	23033
Oil Age	hrs	Client Info		181	88	946
Oil Changed		Client Info		N/A	N/A	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
-				-		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	1.5	<b>3</b> .4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	16	23	26
Chromium	ppm		>20	0	0	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm		>2	0	0	0
Aluminum	ppm	ASTM D5185m		4	5	9
Lead		ASTM D5185m	>20	4 <1	0	<1
Copper	ppm ppm	ASTM D5185m	>330	3	4	23
Tin				-	4 <1	<1
Vanadium	ppm		>15	<1		0
	ppm	ASTM D5185m		<1	<1	
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method				history2
//BBIIII/E0		memou	mmubase	current	TIISTOLA I	
Boron	ppm	ASTM D5185m	0	8	21	12
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	8	21	12
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	8 0	21 0	12 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8 0 70	21 0 87	12 0 97
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	8 0 70 <1	21 0 87 <1	12 0 97 <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	8 0 70 <1 886	21 0 87 <1 888	12 0 97 <1 840
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	8 0 70 <1 886 1044	21 0 87 <1 888 1022	12 0 97 <1 840 985
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	8 0 70 <1 886 1044 1005	21 0 87 <1 888 1022 1012	12 0 97 <1 840 985 1096
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	8 0 70 <1 886 1044 1005 1136	21 0 87 <1 888 1022 1012 1174	12 0 97 <1 840 985 1096 1251
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	8 0 70 <1 886 1044 1005 1136 3532	21 0 87 <1 888 1022 1012 1174 3063	12 0 97 <1 840 985 1096 1251 3513
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	8 0 70 <1 886 1044 1005 1136 3532 current	21 0 87 <1 888 1022 1012 1174 3063 history1	12 0 97 <1 840 985 1096 1251 3513 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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	8 0 70 <1 886 1044 1005 1136 3532 current 3	21 0 87 <1 888 1022 1012 1012 1174 3063 history1 3	12 0 97 <1 840 985 1096 1251 3513 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	8 0 70 <1 886 1044 1005 1136 3532 current 3 7	21 0 87 <1 888 1022 1012 1012 1174 3063 history1 3 8	12 0 97 <1 840 985 1096 1251 3513 history2 6 15
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20	8 0 70 <1 886 1044 1005 1136 3532 current 3 7 1 2	21 0 87 <1 888 1022 1012 1174 3063 history1 3 8 7 7 history1	12 0 97 <1 840 985 1096 1251 3513 history2 6 15 13 13 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b>	8 0 70 <1 886 1044 1005 1136 3532 current 3 7 1 2 0.3	21 0 87 <1 888 1022 1012 1174 3063 history1 3 8 7 history1 0.3	12 0 97 <1 840 985 1096 1251 3513 history2 6 15 13 13 history2 0.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	8 0 70 <1 886 1044 1005 1136 3532 <i>current</i> 3 7 1 <i>current</i> 0.3 6.2	21 0 87 <1 888 1022 1012 1174 3063 history1 3 8 7 history1 0.3 5.9	12 0 97 <1 840 985 1096 1251 3513 history2 6 15 13 history2 0.8 9.9
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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 20 <b>imit/base</b> >4 >20	8 0 70 <1 886 1044 1005 1136 3532 <u>current</u> 3 7 1 1 <u>current</u> 0.3 6.2 16.8	21 0 87 <1 888 1022 1012 1174 3063 history1 3 8 7 history1 0.3 5.9 17.7	12 0 97 <1 840 985 1096 1251 3513 history2 6 15 13 13 history2 0.8 9.9 18.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	8 0 70 <1 886 1044 1005 1136 3532 <i>current</i> 3 7 1 <i>current</i> 0.3 6.2 16.8 <i>current</i>	21 0 87 <1 888 1022 1012 1174 3063 history1 3 8 7 history1 0.3 5.9 17.7 history1	12 0 97 <1 840 985 1096 1251 3513 history2 6 15 13 history2 0.8 9.9 18.7 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 20 <b>imit/base</b> >4 >20	8 0 70 <1 886 1044 1005 1136 3532 <u>current</u> 3 7 1 <u>current</u> 0.3 6.2 16.8 <u>current</u> 13.6	21 0 87 <1 888 1022 1012 1174 3063 history1 3 8 7 history1 0.3 5.9 17.7 history1 13.5	12 0 97 <1 840 985 1096 1251 3513 history2 6 15 13 history2 0.8 9.9 18.7 history2 13.4
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	8 0 70 <1 886 1044 1005 1136 3532 <i>current</i> 3 7 1 <i>current</i> 0.3 6.2 16.8 <i>current</i>	21 0 87 <1 888 1022 1012 1174 3063 history1 3 8 7 history1 0.3 5.9 17.7 history1	12 0 97 <1 840 985 1096 1251 3513 history2 6 15 13 history2 0.8 9.9 18.7 history2

Submitted By: GFL166,GFL172,GFL180,GFL867,GFL868,GFL955 - Chelsea Bryan



# **OIL ANALYSIS REPORT**





un3/23

eb6/23

Nov22/22

Jan 12/23

vug4/23

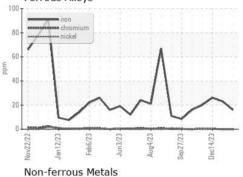
Sep27/23

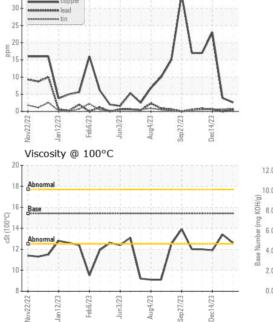
Dec14/23

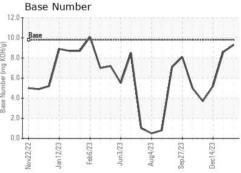
3!

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	12.6	13.4	<b>1</b> 1.9
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL environmental - 867 - Trafford (Blount Hauling) Sample No. : GFL0113735 Received : 19 Apr 2024 1130 County Line Rd Lab Number : 06153963 Tested : 22 Apr 2024 Trafford, AL US 35172 Unique Number : 10989386 Diagnosed : 22 Apr 2024 - Wes Davis Test Package : FLEET Contact: Service Manager Certificate 12367 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. T: F:

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

Report Id: GFL867 [WUSCAR] 06153963 (Generated: 04/22/2024 07:34:31) Rev: 1 Submitted By: GFL166,GFL172,GFL180,GFL867,GFL868,GFL955 - Chelsea Bryan

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