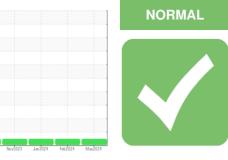


## **OIL ANALYSIS REPORT**

SAMPLE INFORMATION method

Sample Rating Trend



Machine Id

### 821054

#### Component 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

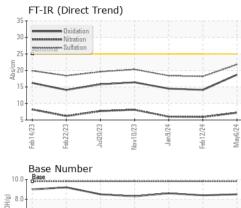
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR			iimi/base	current	nistory i	nistoryz
Sample Number		Client Info		GFL0120574	GFL0108496	GFL0108526
Sample Date		Client Info		06 May 2024	12 Feb 2024	09 Jan 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
				Normize	NOT IN AL	-
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
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	>100	11	5	5
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		2	2	2
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m		<1	0	0
Tin	ppm		>15	0	0	<1
Vanadium	ppm	ASTM D5185m	210	0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppm		11 1.0		-	-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	9	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 0	9 0	5
Boron Barium Molybdenum		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 59	9 0 60	5 0 56
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 59 0	9 0 60 0	5 0 56 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 59 0 993	9 0 60 0 1053	5 0 56 <1 928
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 59 0	9 0 60 0	5 0 56 <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	0 0 59 0 993	9 0 60 0 1053	5 0 56 <1 928
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	0 0 59 0 993 1131	9 0 60 0 1053 1121	5 0 56 <1 928 1045
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	0 0 59 0 993 1131 1040	9 0 60 0 1053 1121 1135	5 0 56 <1 928 1045 1080
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 0 59 0 993 1131 1040 1201	9 0 60 0 1053 1121 1135 1320	5 0 56 <1 928 1045 1080 1257
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	0 0 59 0 993 1131 1040 1201 3617	9 0 60 0 1053 1121 1135 1320 3292	5 0 56 <1 928 1045 1080 1257 3108
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	0 0 59 0 993 1131 1040 1201 3617 current	9 0 60 0 1053 1121 1135 1320 3292 history1	5 0 56 <1 928 1045 1080 1257 3108 <b>history2</b>
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	0 0 59 0 993 1131 1040 1201 3617 current	9 0 60 0 1053 1121 1135 1320 3292 history1 6	5 0 56 <1 928 1045 1080 1257 3108 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	0 0 59 0 993 1131 1040 1201 3617 <u>current</u> 5 4	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2	5 0 56 <1 928 1045 1080 1257 3108 history2 4 3 2
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 <b>Imit/base</b> >25 -20 <b>Imit/base</b>	0 0 59 0 993 1131 1040 1201 3617 current 5 4 0 0	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2 0 0 history1	5 0 56 <1 928 1045 1080 1257 3108 <b>history2</b> 4 3 2 <b>history2</b>
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >3	0 0 59 0 993 1131 1040 1201 3617 <i>current</i> 5 4 0 <i>current</i>	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2 0 history1 0.2	5 0 56 <1 928 1045 1080 1257 3108 history2 4 3 2 history2 0.2
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3 >20	0 0 59 0 993 1131 1040 1201 3617 <i>current</i> 5 4 0 <i>current</i> 0.4 7.2	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2 0 history1 0.2 5.9	5 0 56 <1 928 1045 1080 1257 3108 history2 4 3 2 history2 0.2 6.0
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> >3 >20	0 0 59 0 993 1131 1040 1201 3617 <i>current</i> 5 4 0 <i>current</i>	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2 0 0 history1 0.2 5.9 18.2	5 0 56 <1 928 1045 1080 1257 3108 <b>history2</b> 4 3 2 <b>history2</b> 0.2 6.0 18.4
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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3 >20	0 0 59 0 993 1131 1040 1201 3617 <i>current</i> 5 4 0 <i>current</i> 0.4 7.2	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2 0 history1 0.2 5.9	5 0 56 <1 928 1045 1080 1257 3108 history2 4 3 2 history2 0.2 6.0
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> >3 >20	0 0 59 0 993 1131 1040 1201 3617 <i>current</i> 5 4 0 0 <i>current</i> 0.4 7.2 21.8	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2 0 0 history1 0.2 5.9 18.2	5 0 56 <1 928 1045 1080 1257 3108 <b>history2</b> 4 3 2 <b>history2</b> 0.2 6.0 18.4
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >3 >20 >30 imit/base	0 0 59 0 993 1131 1040 1201 3617 <i>current</i> 5 4 0 <i>current</i> 0.4 7.2 21.8	9 0 60 0 1053 1121 1135 1320 3292 history1 6 2 0 history1 0.2 5.9 18.2 history1	5 0 56 <1 928 1045 1080 1257 3108 history2 4 3 2 history2 0.2 6.0 18.4 history2

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

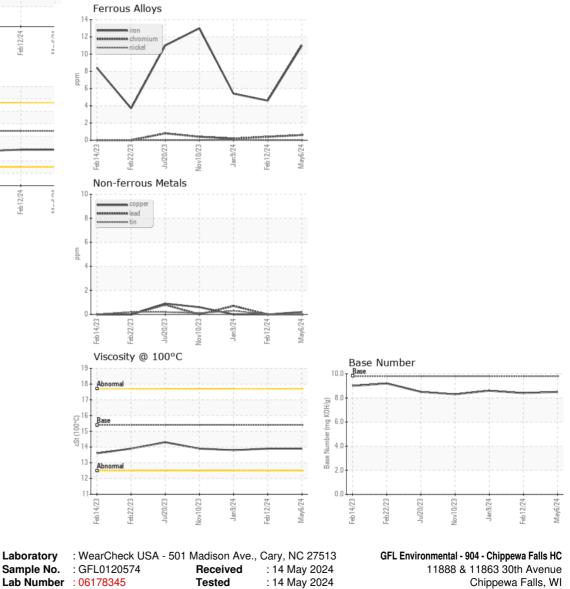


# **OIL ANALYSIS REPORT**



10.0 T Bas				*****		
8.0						
6.0						
0.0						
4.0						
2.0						
2.0						
0.0						
H/23	2/23	Jul20/23	)/23	Jan9/24	Feb12/24	VG J W
				0.5	6-1	4
eb 1	eb2	Jul2	Dv1	Jan	eb 1	-
Feb14/23	Feb22/23		Nov10/23	Jan	Feb 1	
	cosity @			Jan	Feb1	- VV
Vis				Jan	Feb1	
Vis	cosity @			Jan	Feb1	M.
Vis 19 18 Abr 17	cosity @ omal			Jan	Febl	μ
Vis 19 18 Abr 17	cosity @ omal			Jan	Feb1	μA
Vis 19 18 Abr 17	cosity @ omal			Jan	Feb	₩.
Vis 19 18 Abr 17 516 Bas 15 514	cosity @ omal			lan	Febl	₩
Vis	cosity @ omal			lan	Febi	Υ.
Vis 19 18 Abr 17 516 Bas 516 Bas 14 13 Abr 13 Abr 12 -	cosity @ omal				Feb1	W4
Vis	cosity @ omal	) 100°C				
Vis 19 18 Abr 17 516 Bas 516 Bas 14 13 Abr 13 Abr 12 -	cosity @ omal			Jan 3/24	Feb12/24	-2.7A

VISUAL		method				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	13.9	13.9	13.8
GRAPHS						





Unique Number : 11029671 Diagnosed : 14 May 2024 - Wes Davis Test Package : FLEET 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. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact: Andy Kane T: (715)202-3420 F:

Report Id: GFL904 [WUSCAR] 06178345 (Generated: 05/14/2024 18:35:11) Rev: 1

Laboratory

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

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