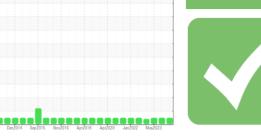


(YA117739)

# **OIL ANALYSIS REPORT**

Sample Rating Trend





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

SAMPLE INFORMATION method

# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

Area

Fluic

10476 Diesel Engine

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

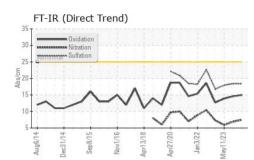
# Fluid Condition

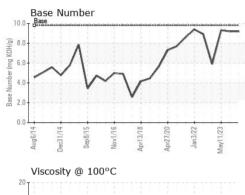
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

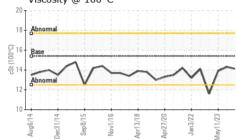
Sample Number		Client Info		GFL0123377	GFL0123389	GFL0050789
Sample Date		Client Info		10 Jul 2024	27 Jun 2024	11 May 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>130	29	25	14
Chromium	ppm	ASTM D5185m	>10	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	2
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	7	6	6
Lead	ppm	ASTM D5185m	>20	0	0	<1
Copper	ppm	ASTM D5185m	>125	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	0	0	1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
					11. A.	bioto m.O
ADDITIVES		method				history2
Boron	ppm	ASTM D5185m	0	<1	history1	nistory∠ 1
	ppm ppm		0		· · · · · · · · · · · · · · · · · · ·	
Boron	ppm	ASTM D5185m	0	<1	1	1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 0 60	<1 0	1 0	1
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 59	1 0 57	1 0 59
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 59 <1	1 0 57 <1	1 0 59 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 59 <1 974	1 0 57 <1 987	1 0 59 <1 1049
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 59 <1 974 1112 1082	1 0 57 <1 987 1117	1 0 59 <1 1049 1064
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	<1 0 59 <1 974 1112	1 0 57 <1 987 1117 1077	1 0 59 <1 1049 1064 1103
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	<1 0 59 <1 974 1112 1082 1252	1 0 57 <1 987 1117 1077 1345	1 0 59 <1 1049 1064 1103 1378
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 59 <1 974 1112 1082 1252 3626	1 0 57 <1 987 1117 1077 1345 3747	1 0 59 <1 1049 1064 1103 1378 4081
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	<1 0 59 <1 974 1112 1082 1252 3626 current	1 0 57 <1 987 1117 1077 1345 3747 history1	1 0 59 <1 1049 1064 1103 1378 4081 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	<1 0 59 <1 974 1112 1082 1252 3626 current 3	1 0 57 <1 987 1117 1077 1345 3747 history1 4	1 0 59 <1 1049 1064 1103 1378 4081 history2 4
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 1010 1070 1150 1270 2060 <b>limit/base</b>	<1 0 59 <1 974 1112 1082 1252 3626 current 3 2	1 0 57 <1 987 1117 1077 1345 3747 history1 4 1	1 0 59 <1 1049 1064 1103 1378 4081 history2 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	<1 0 59 <1 974 1112 1082 1252 3626 current 3 2 <1 current	1 0 57 <1 987 1117 1077 1345 3747 history1 4 1 2 kistory1	1 0 59 <1 1049 1064 1103 1378 4081 <b>history2</b> 4 1 3 <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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 1imit/base >20	<1 0 59 <1 974 1112 1082 1252 3626 <i>current</i> 3 2 <1 2 <1 <i>current</i>	1 0 57 <1 987 1117 1077 1345 3747 history1 4 1 2 history1 0.3	1 0 59 <1 1049 1064 1103 1378 4081 <b>history2</b> 4 1 3 <b>history2</b> 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	<1 0 59 <1 974 1112 1082 1252 3626 current 3 2 <1 current	1 0 57 <1 987 1117 1077 1345 3747 history1 4 1 2 kistory1	1 0 59 <1 1049 1064 1103 1378 4081 <b>history2</b> 4 1 3 <b>history2</b>
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 <b>imit/base</b> >20 <b>imit/base</b> >20	<1 0 59 <1 974 1112 1082 1252 3626 <i>current</i> 3 2 <1 2 <1 <i>current</i> 0.3 7.5	1 0 57 <1 987 1117 1077 1345 3747 history1 4 1 2 history1 0.3 6.9	1 0 59 <1 1049 1064 1103 1378 4081 history2 4 1 3 history2 0.2 5.9
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >6 >20 >30 imit/base	<1 0 59 <1 974 1112 1082 1252 3626 Current 3 2 <1 Current 0.3 7.5 18.4 Current	1 0 57 <1 987 1117 1077 1345 3747 history1 4 1 2 history1 0.3 6.9 18.4 history1	1 0 59 <1 1049 1064 1103 1378 4081 history2 4 1 3 history2 0.2 5.9 17.9 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >20 <b>imit/base</b> >20	<1 0 59 <1 974 1112 1082 1252 3626 <u>current</u> 3 2 <1 2 <1 0.3 7.5 18.4	1 0 57 <1 987 1117 1077 1345 3747 history1 4 1 2 <u>history1</u> 0.3 6.9 18.4	1 0 59 <1 1049 1064 1103 1378 4081 <b>history2</b> 4 1 3 <b>history2</b> 0.2 5.9 17.9



# **OIL ANALYSIS REPORT**

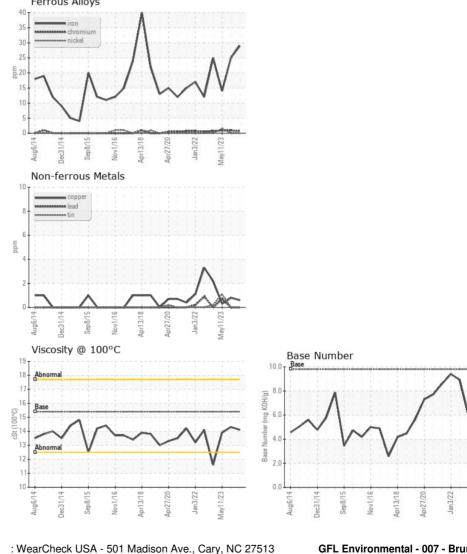






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.1	14.3	13.9
GRAPHS						

Ferrous Alloys



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 007 - Brunswick Sample No. : GFL0123377 Received : 16 Jul 2024 2809 Galloway Road Lab Number : 06237532 Tested : 17 Jul 2024 Bolivia, NC US 28422 Unique Number : 11126366 Diagnosed : 17 Jul 2024 - Wes Davis Test Package : FLEET Contact: DONALD CRAVEN Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dcraven@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Т: 

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

Report Id: GFL007 [WUSCAR] 06237532 (Generated: 07/17/2024 08:52:51) Rev: 1

Submitted By: DONALD CRAVEN

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May11/23