

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend

NORMAL

#### Area (YA115724) Machine Id 2519 Component

## **Diesel Engine**

Fluid

# PETRO CANADA DURON SHP 15W40 (40 GAL)

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

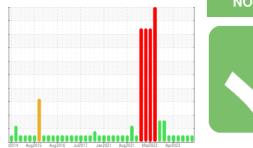
All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

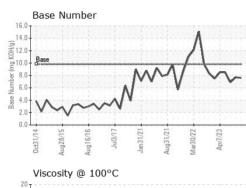
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

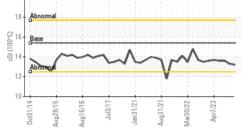


SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090013	GFL0080523	GFL0080564
Sample Date		Client Info		05 Mar 2024	17 Oct 2023	23 Aug 2023
Machine Age	hrs	Client Info		77972	77972	77972
Oil Age	hrs	Client Info		0	77972	77972
Oil Changed		Client Info		Not Changd	Changed	Changed
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	>165	23	19	46
Chromium	ppm	ASTM D5185m	>5	2	2	3
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	1	1	4
Lead	ppm	ASTM D5185m	>150	0	0	1
Copper	ppm	ASTM D5185m	>90	25	69	77
Tin	ppm	ASTM D5185m	>5	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 2	history1 4	history2 3
	ppm ppm		0			
Boron		ASTM D5185m	0	2	4	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	4 <1	3 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 61	4 <1 61	3 0 66
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 61 <1	4 <1 61 <1	3 0 66 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	2 0 61 <1 932	4 <1 61 <1 946	3 0 66 1 1040
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	2 0 61 <1 932 1053	4 <1 61 <1 946 1046	3 0 66 1 1040 1201
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 ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 61 <1 932 1053 991	4 <1 61 <1 946 1046 1006	3 0 66 1 1040 1201 1054
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	2 0 61 <1 932 1053 991 1220	4 <1 61 <1 946 1046 1006 1263	3 0 66 1 1040 1201 1054 1360
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	2 0 61 <1 932 1053 991 1220 2528	4 <1 61 <1 946 1046 1006 1263 2698	3 0 66 1 1040 1201 1054 1360 3084
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	2 0 61 <1 932 1053 991 1220 2528 current	4 <1 61 <1 946 1046 1006 1263 2698 history1	3 0 66 1 1040 1201 1054 1360 3084 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	2 0 61 <1 932 1053 991 1220 2528 current 9	4 <1 61 <1 946 1046 1046 1066 1263 2698 history1 10	3 0 66 1 1040 1201 1054 1360 3084 history2 19
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 <b>method</b> ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >35	2 0 61 <1 932 1053 991 1220 2528 <u>current</u> 9 4	4 <1 61 <1 946 1046 1006 1263 2698 history1 10 5	3 0 66 1 1040 1201 1054 1360 3084 history2 19 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >35	2 0 61 <1 932 1053 991 1220 2528 <u>current</u> 9 4 4 <1	4 <1 61 <1 946 1046 1006 1263 2698 history1 10 5 1	3 0 66 1 1040 1201 1054 1360 3084 <b>history2</b> 19 9 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >35	2 0 61 <1 932 1053 991 1220 2528 current 9 4 <1 <	4 <1 61 <1 946 1046 1006 1263 2698 history1 10 5 1 1 history1	3 0 66 1 1040 1201 1054 1360 3084 history2 19 9 1 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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 limit/base >35 >20 limit/base	2 0 61 <1 932 1053 991 1220 2528 current 9 4 <1 <1 current	4 <1 61 <1 946 1046 1006 1263 2698 history1 10 5 1 history1 0.5	3 0 66 1 1040 1201 1054 1360 3084 history2 19 9 1 1 history2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >35 >20 <i>limit/base</i> >7.5 >20	2 0 61 <1 932 1053 991 1220 2528 <i>current</i> 9 4 <1 <i>current</i> 0.6 8.8	4 <1 61 <1 946 1046 1006 1263 2698 history1 10 5 1 history1 0.5 7.9	3 0 66 1 1040 1201 1054 1360 3084 history2 19 9 1 1 history2 1 history2 1 1 11.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium NIFRA-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 <b>imit/base</b> >35 -20 <b>imit/base</b> >7.5 >20 >30	2 0 61 <1 932 1053 991 1220 2528 <u>current</u> 9 4 <1 <1 <u>current</u> 0.6 8.8 20.3	4 <1 61 <1 946 1046 1006 1263 2698 history1 10 5 1 history1 0.5 7.9 19.7 history1	3 0 66 1 1040 1201 1054 1360 3084 history2 19 9 1 1 history2 1 1 history2 1 1 11.3 22.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 2060 2060 2060 2	2 0 61 <1 932 1053 991 1220 2528 <i>current</i> 9 4 <1 <i>current</i> 0.6 8.8 20.3	4 <1 61 <1 946 1046 1006 1263 2698 history1 10 5 1 history1 0.5 7.9 19.7	3 0 66 1 1040 1201 1054 1360 3084 history2 19 9 1 1 history2 1 1 11.3 22.7 history2



# **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	13.2	13.3	13.6
GRAPHS						

Ferrous Alloys



70

60

18

17

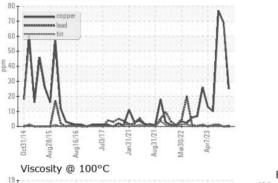
16 cSt (100°C)

> 12 11

10

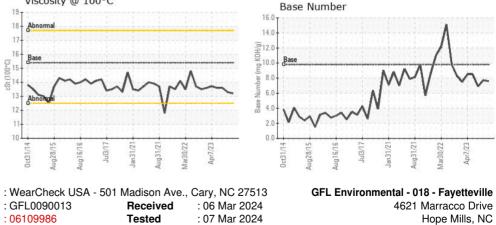
0ct31/14 Aug28/15

: GFL0090013



pr7/23

far30/23



Sample No. Lab Number : 06109986 Unique Number : 10913483 Certificate L2367 

Diagnosed : 07 Mar 2024 - Wes Davis Test Package : FLEET Contact: Robert Carter To discuss this sample report, contact Customer Service at 1-800-237-1369. robert.carter@gflenv.com \* - 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)

Aug16/16

Aug31/21.

Received

Tested

Mar30/22

an 31/21

Report Id: GFL018 [WUSCAR] 06109986 (Generated: 03/07/2024 09:57:39) Rev: 1

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