

## **OIL ANALYSIS REPORT**

Sample Rating Trend





#### Component Diesel Engine

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

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment:  $423093 \;)$ 

#### 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.

		Ma	r2023	Mar2023 Jun20	23	
SAMPLE INFORM	<b>/IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0083480	GFL0074183	GFL0074139
Sample Date		Client Info		13 Jun 2023	28 Mar 2023	07 Mar 2023
Machine Age	hrs	Client Info		2304	1218	1069
Oil Age	hrs	Client Info		2304	1218	1069
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	1.2
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	16	10	65
Chromium	ppm	ASTM D5185m	>4	1	<1	2
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	22	14	67
Lead	ppm	ASTM D5185m	>45	0	0	<1
Copper	ppm	ASTM D5185m	>85	1	4	17
Tin	ppm	ASTM D5185m	>4	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base 0	current 1	history1 2	history2 22
Boron	ppm ppm		0			
Boron Barium		ASTM D5185m	0	1	2	22
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0 0 60	1 0	2 2	22 7
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 58	2 2 56	22 7 22
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 58 <1	2 2 56 1	22 7 22 10
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	1 0 58 <1 1001	2 2 56 1 888	22 7 22 10 680
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	1 0 58 <1 1001 1088	2 2 56 1 888 1116	22 7 22 10 680 1385
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	1 0 58 <1 1001 1088 1033	2 2 56 1 888 1116 988	22 7 22 10 680 1385 746
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	1 0 58 <1 1001 1088 1033 1301	2 2 56 1 888 1116 988 1170	22 7 22 10 680 1385 746 930
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	1 0 58 <1 1001 1088 1033 1301 3613	2 2 56 1 888 1116 988 1170 3025	22 7 22 10 680 1385 746 930 2728
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 1010 1070 1150 1270 2060	1 0 58 <1 1001 1088 1033 1301 3613 current	2 2 56 1 888 1116 988 1170 3025 history1	22 7 22 10 680 1385 746 930 2728 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	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 limit/base >30	1 0 58 <1 1001 1088 1033 1301 3613 current 5	2 2 56 1 888 1116 988 1170 3025 history1 4	22 7 22 10 680 1385 746 930 2728 history2 20
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	0 0 60 1010 1070 1150 1270 2060 limit/base >30	1 0 58 <1 1001 1088 1033 1301 3613 <u>current</u> 5 3	2 2 56 1 888 1116 988 1170 3025 history1 4 2	22 7 22 10 680 1385 746 930 2728 2728 history2 20 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30	1 0 58 <1 1001 1088 1033 1301 3613 <i>current</i> 5 3 62	2 2 56 1 888 1116 988 1170 3025 history1 4 2 38	22 7 22 10 680 1385 746 930 2728 history2 20 4 201
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 limit/base >20	1 0 58 <1 1001 1088 1033 1301 3613 current 5 3 62 current	2 2 56 1 888 1116 988 1170 3025 history1 4 2 38 history1	22 7 22 10 680 1385 746 930 2728 <b>history2</b> 20 4 20 4 201 <b>history2</b>
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 20 limit/base >33 >20	1 0 58 <1 1001 1088 1033 1301 3613 <i>current</i> 5 3 62 <i>current</i> 0.3	2 2 56 1 888 1116 988 1170 3025 history1 4 2 38 history1 0.1	22 7 22 10 680 1385 746 930 2728 <b>history2</b> 20 4 20 4 201 <b>history2</b> 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm t spm ppm ppm ppm ppm spm ppm spm ppm spm ppm spm s	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 20 limit/base >33 >20	1 0 58 <1 1001 1088 1033 1301 3613 <i>current</i> 5 3 62 <i>current</i> 0.3 7.8	2 2 56 1 888 1116 988 1170 3025 history1 4 2 38 history1 0.1 5.8	22 7 22 10 680 1385 746 930 2728 history2 20 4 201 20 4 201 history2 0.4 10.4
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 t spm ppm ppm ppm ppm spm ppm spm ppm spm ppm spm s	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >30 <b>imit/base</b> >3 20	1 0 58 <1 1001 1088 1033 1301 3613 <i>current</i> 5 3 62 <i>current</i> 0.3 7.8 19.5	2 2 56 1 888 1116 988 1170 3025 history1 4 2 38 history1 0.1 5.8 18.2	22 7 22 10 680 1385 746 930 2728 <b>history2</b> 20 4 201 <b>history2</b> 0.4 10.4 23.2

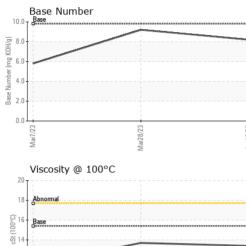


Base

Abnorm 12 10

Mar7/23

# **OIL ANALYSIS REPORT**



Mar28/23

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Submitted By: TECHNICIAN ACCOUNT