

# **OIL ANALYSIS REPORT**

Sample Rating Trend



# Machine Id 429103

#### 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	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086915	GFL0086941	GFL0083990
Sample Date		Client Info		18 Sep 2023	07 Sep 2023	30 Jun 2023
Machine Age	hrs	Client Info		5247	5182	4644
Oil Age	hrs	Client Info		600	538	600
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	18	19
Chromium	ppm	ASTM D5185m	>20	2	2	2
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	9	8	3
Lead	ppm	ASTM D5185m	>40	<1	1	<1
Copper	ppm	ASTM D5185m		0	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	6	4	1
	ppm ppm					
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6	4	1
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0 0 60	6 0	4 0 61 <1	1 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 0 64	4 0 61 <1 995	1 0 60 <1 908
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	6 0 64 <1 1023 1176	4 0 61 <1	1 0 60 <1 908 1059
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 0 64 <1 1023 1176 1109	4 0 61 <1 995 1167 1043	1 0 60 <1 908 1059 999
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	6 0 64 <1 1023 1176 1109 1348	4 0 61 <1 995 1167 1043 1268	1 0 60 <1 908 1059 999 1193
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	6 0 64 <1 1023 1176 1109	4 0 61 <1 995 1167 1043	1 0 60 <1 908 1059 999
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	6 0 64 <1 1023 1176 1109 1348	4 0 61 <1 995 1167 1043 1268	1 0 60 <1 908 1059 999 1193
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 1010 1070 1150 1270 2060	6 0 64 <1 1023 1176 1109 1348 3916	4 0 61 <1 995 1167 1043 1268 3684	1 0 60 <1 908 1059 999 1193 2933
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	0 0 60 0 1010 1070 1150 1270 2060	6 0 64 <1 1023 1176 1109 1348 3916 Current	4 0 61 <1 995 1167 1043 1268 3684 history1	1 0 60 <1 908 1059 999 1193 2933 history2 4 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	6 0 64 <1 1023 1176 1109 1348 3916 <u>current</u> 5	4 0 61 <1 995 1167 1043 1268 3684 history1 7	1 0 60 <1 908 1059 999 1193 2933 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	6 0 64 <1 1023 1176 1109 1348 3916 Current 5 4	4 0 61 <1 995 1167 1043 1268 3684 history1 7 5	1 0 60 <1 908 1059 999 1193 2933 history2 4 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	6 0 64 <1 1023 1176 1109 1348 3916 Current 5 4 23	4 0 61 <1 995 1167 1043 1268 3684 history1 7 5 24	1 0 60 <1 908 1059 999 1193 2933 history2 4 4 8
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 >25	6 0 64 <1 1023 1176 1109 1348 3916 current 5 4 23 current	4 0 61 <1 995 1167 1043 1268 3684 history1 7 5 24 history1	1 0 60 <1 908 1059 999 1193 2933 history2 4 4 8 8 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 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	6 0 64 <1 1023 1176 1109 1348 3916 <u>current</u> 5 4 23 <u>current</u> 0.6	4 0 61 <1 995 1167 1043 1268 3684 history1 7 5 24 history1 0.6	1 0 60 <1 908 1059 999 1193 2933 history2 4 4 8 history2 0.6
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	6 0 64 <1 1023 1176 1109 1348 3916 Current 5 4 23 Current 0.6 8.5	4 0 61 995 1167 1043 1268 3684 history1 7 5 24 history1 0.6 7.9	1 0 60 <1 908 1059 999 1193 2933 history2 4 4 4 8 <b>history2</b> 0.6 8.7
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <b>imit/base</b> >3 20 20	6 0 64 <1 1023 1176 1109 1348 3916 <u>current</u> 5 4 23 <u>current</u> 0.6 8.5 19.2	4 0 61 <1 995 1167 1043 1268 3684 history1 7 5 24 history1 0.6 7.9 18.7	1 0 60 <1 908 1059 999 1193 2933 history2 4 4 4 8 <b>history2</b> 0.6 8.7 19.5
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 TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	6 0 64 <1 1023 1176 1109 1348 3916 Current 5 4 23 Current 0.6 8.5 19.2 Current	4 0 61 <1 995 1167 1043 1268 3684 history1 7 5 24 history1 0.6 7.9 18.7 history1	1 0 60 <1 908 1059 999 1193 2933 history2 4 4 4 8 <u>history2</u> 0.6 8.7 19.5 history2

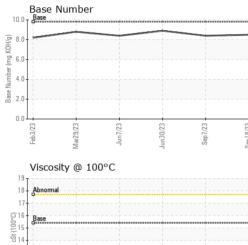


13 Abnorma 12 11 Feb3/23

Mar29/23

# **OIL ANALYSIS REPORT**

VISUAL .....



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				Debris		scala		isual	NONE		NOM		NONE		NONE		
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	cuss this		er : e : , cor	GFL008 059584 106596 FLEET ntact Cu	36915 45 58 stomer Se	Receiv Diagno Diagno	501 Madison Ave., Cary, NC 27513 Received : 22 Sep 2023 Diagnosed : 22 Sep 2023 Diagnostician : Wes Davis tice at 1-800-237-1369. 7025 scope of accreditation.					GFL Environmental - 408 - Brown City 4235 M-53 BROWN CITY, MI US 48416 Contact: WILLIAM DEOLA bdeola@gflenv.com T: (810)238-2836					
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Submitted By: WILLIAM DEOLA

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