

# **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 630M Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (9 GAL)

				022 Jul2022 Apr2023 Jul2023 Feb2		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115050	GFL0106703	GFL008728
Sample Date		Client Info		25 Feb 2024	11 Feb 2024	27 Jul 2023
Machine Age	hrs	Client Info		12872	12854	12328
Oil Age	hrs	Client Info		18	526	700
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	SEVERE	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
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	>120	21	3	43
Chromium	ppm	ASTM D5185m	>20	<1	0	2
Nickel	ppm	ASTM D5185m	>5	4	0	7
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	2	0
Lead	ppm	ASTM D5185m	>40	<1	<1	2
Copper	ppm	ASTM D5185m	>330	8	2	6
Tin	ppm	ASTM D5185m	>15	<1	0	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	163	3
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	62	6	61
Manganasa						
wanganese	ppm	ASTM D5185m	0	<1	0	2
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	0 1010	<1 1157	0 79	
Manganese Magnesium Calcium						2
Magnesium	ppm	ASTM D5185m	1010	1157	79	2 974
Magnesium Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	1010 1070	1157 1260	79 1899	2 974 1179
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	1157 1260 1151	79 1899 971	2 974 1179 1042
Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	1157 1260 1151 1510	79 1899 971 1126	2 974 1179 1042 1309 3076
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060	1157 1260 1151 1510 3401	79 1899 971 1126 3394	2 974 1179 1042 1309 3076
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1010 1070 1150 1270 2060 limit/base	1157 1260 1151 1510 3401 current	79 1899 971 1126 3394 history1	2 974 1179 1042 1309 3076 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm tTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	1010 1070 1150 1270 2060 limit/base	1157 1260 1151 1510 3401 current 4	79 1899 971 1126 3394 history1 22	2 974 1179 1042 1309 3076 history2 6
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm tTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	1157 1260 1151 1510 3401 current 4 2	79 1899 971 1126 3394 history1 22 1	2 974 1179 1042 1309 3076 history2 6 8
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm tTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 <b>limit/base</b> >25	1157 1260 1151 1510 3401 <u>current</u> 4 2 2 <1	79 1899 971 1126 3394 history1 22 1 6	2 974 1179 1042 1309 3076 history2 6 8 2 0.3
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm tTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 >20	1157 1260 1151 3401 <u>current</u> 4 2 <1 0.3	79 1899 971 1126 3394 history1 22 1 6 6 9.9	2 974 1179 1042 1309 3076 history2 6 8 2 0.3
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm tTS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 >3.0 <b>limit/base</b>	1157 1260 1151 3401 <u>current</u> 4 2 <1 0.3 <u>current</u>	79 1899 971 1126 3394 history1 22 1 6 6 ▶ 9.9 9.9	2 974 1179 1042 1309 3076 history2 6 8 2 0.3 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm iTS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 <b>method</b> *ASTM D7844	1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4	1157 1260 1151 3401 <i>current</i> 4 2 <1 0.3 <i>current</i> 0.6	79 1899 971 1126 3394 <b>history1</b> 22 1 6 ▲ 9.9 <b>history1</b> 0	2 974 1179 1042 1309 3076 history2 6 8 2 0.3 history2 1.1
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm tTS ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 ASTM D3524 *ASTM D7844 *ASTM D7624	1010 1070 1150 1270 2060 <b>iimit/base</b> >25 >20 >20 >3.0 <b>iimit/base</b> >4 >20	1157 1260 1151 3401 <i>current</i> 4 2 <1 0.3 <i>current</i> 0.6 8.4	79 1899 971 1126 3394	2 974 1179 1042 1309 3076 history2 6 8 2 0.3 history2 1.1 12.5 28.4
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm tTS ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 ASTM D3524 *ASTM D7844 *ASTM D7624	1010 1070 1150 22060 <b>limit/base</b> >25 >20 >3.0 <b>limit/base</b> >4 >20 >3.0	1157 1260 1151 3401 <u>current</u> 4 2 <1 0.3 <u>current</u> 0.6 8.4 20.0	79 1899 971 1126 3394 <b>history1</b> 22 1 6 ▲ 9.9 <b>history1</b> 0 5.5 18.7	2 974 1179 1042 1309 3076 history2 6 8 2 0.3 history2 1.1 1.2.5

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: Resample )  $\label{eq:comment}$ 

### Wear

All component wear rates are normal.

#### Contamination

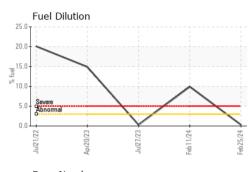
Fuel content negligible. There is no indication of any contamination in the oil.

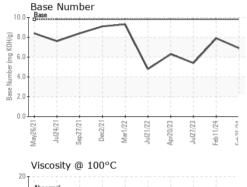
#### Fluid Condition

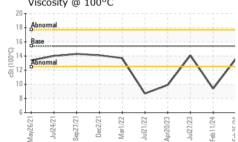
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



# **OIL ANALYSIS REPORT**

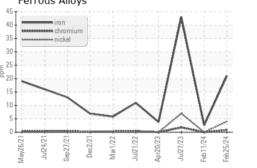


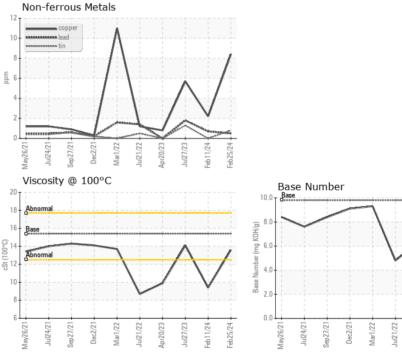




VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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	13.6	<b>9</b> .4	14.1
GRAPHS						

Ferrous Alloys





: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Laboratory GFL Environmental - 405 - Arbor Hills Sample No. : GFL0115050 Received : 29 Feb 2024 7400 Napier Rd Lab Number : 06104104 Tested : 04 Mar 2024 NORTHVILLE, MI Unique Number : 10902334 Diagnosed : 04 Mar 2024 - Don Baldridge US 48168 Test Package : FLEET (Additional Tests: PercentFuel) Contact: Anthony Hopkins Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. ahopkins@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Т: F:

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

Jul27/23

Apr20/23

-eb25/24 Feb11/24