

# **OIL ANALYSIS REPORT**

# (YA144603) GFL035 2704 Component

**Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (40 QTS)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Fluid

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.





NORMAL

## ...,..,..,..,..,..,..,..,..,..,

SAMPLE INFORM	MATION	method				history2
Sample Number		Client Info		GFL0102334	GFL0102290	GFL0071602
Sample Date		Client Info		02 Feb 2024	17 Nov 2023	15 Sep 2023
Machine Age	hrs	Client Info		7083	7083	7083
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ON	method	limit/base	current	historv1	history2
Firel		WO Mathead	0.0		1.0	1.0
Fuei		WC Method	>3.0	<1.0	<1.0	<1.0
vvater		WC Wethod	>0.2	NEG	NEG	NEG
GIYCOI		WC Wethod		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>165	4	9	14
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	1	4
Lead	ppm	ASTM D5185m	>150	<1	1	2
Copper	ppm	ASTM D5185m	>90	0	<1	<1
Tin	ppm	ASTM D5185m	>5	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
<b>a</b>						
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
ADDITIVES Boron	ppm	ASTM D5185m method ASTM D5185m	limit/base	0 current 0	0 history1 4	0 history2 2
ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 0 0	0 current 0 <1	0 history1 4 0	0 history2 2 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60	0 current 0 <1 63	0 history1 4 0 64	0 history2 2 0 65
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0	0 current 0 <1 63 <1	0 history1 4 0 64 0	0 history2 2 0 65 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010	0 current 0 <1 63 <1 981	0 history1 4 0 64 0 945	0 history2 2 0 65 <1 933
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070	0 current 0 <1 63 <1 981 1080	0 history1 4 0 64 0 945 1130	0 history2 2 0 65 <1 933 1117
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150	0 current 0 <1 63 <1 981 1080 1096	0 history1 4 0 64 0 945 1130 1007	0 history2 2 0 65 <1 933 1117 1067
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270	0 current 0 <1 63 <1 981 1080 1096 1294	0 history1 4 0 64 0 945 1130 1007 1252	0 history2 2 0 65 <1 933 1117 1067 1285
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 60 0 1010 1070 1150 1270 2060	0 current 0 <1 63 <1 981 1080 1096 1294 3021	0 history1 4 0 64 0 945 1130 1007 1252 3203	0 history2 2 0 65 <1 933 1117 1067 1285 3367
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0 0 1010 1070 1150 1270 2060	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0 60 0 1010 1070 1150 1270 2060  limit/base >35	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 0 0 0 1010 1070 1150 1270 2060 limit/base >35	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3
Cadmium ADDITIVES 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 Method ASTM D5185m ASTM D5185m	limit/base 0 0 0 0 1010 1070 1150 1270 2060 limit/base >35	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2 1	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3 6	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3 4
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 0 0 0 0 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2 1 current	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3 6 history1	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3 4 history2
Cadmium ADDITIVES 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 Method ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >7.5	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2 1 current 0.3	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3 6 5 history1 0.4	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3 4 4 history2 0.4
Cadmium ADDITIVES 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 ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >20	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2 1 current 0.3 8,0	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3 6 3 6 history1 0.4 8.1	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3 4 history2 0.4 8.7
Cadmium ADDITIVES 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 Method ASTM D5185m ASTM D5185m	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >7.5   >20   >30	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2 1 current 0.3 8.0 19.5	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3 6 6 history1 0.4 8.1 19.9	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3 4 kistory2 0.4 8.7 19.7
Cadmium ADDITIVES 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 Method ASTM D5185m ASTM D5185m Method	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >20   limit/base	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2 1 current 0.3 8.0 19.5 current	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3 6 3 6 history1 0.4 8.1 19.9 history1	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3 4 history2 0.4 8.7 19.7 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation Cultation Cultation Cultation Cultation Cultation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM	limit/base   0   0   60   0   1010   1070   1150   1270   2060   limit/base   >20   limit/base   >7.5   >20   limit/base   >30   limit/base   >25	0 current 0 <1 63 <1 981 1080 1096 1294 3021 current 3 2 1 current 0.3 8.0 19.5 current 15.8	0 history1 4 0 64 0 945 1130 1007 1252 3203 history1 6 3 6 3 6 history1 0.4 8.1 19.9 history1 15.8	0 history2 2 0 65 <1 933 1117 1067 1285 3367 history2 7 3 4 history2 0.4 8.7 19.7 history2 15.7



# **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
	DTIEC	mothod	limit/baco	ourropt	history1	history?
		methou	iiiiii/base	current	TIIStOLA	TIStoryz
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.5	13.4
CRADHS						



Non-ferrous Metals

180 160



To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - 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)

Certificate L2367

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