

# **OIL ANALYSIS REPORT**

## Sample Rating Trend

# **VISCOSITY**



4702 Component **Diesel Engine** 

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





## **DIAGNOSIS**

#### Recommendation

No corrective action is recommended at this time. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as PETRO CANADA DURON SHP 15W40, however, a fluid match indicates that this fluid is SAE 30 Diesel Engine Oil. Please confirm the oil type and grade on your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

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

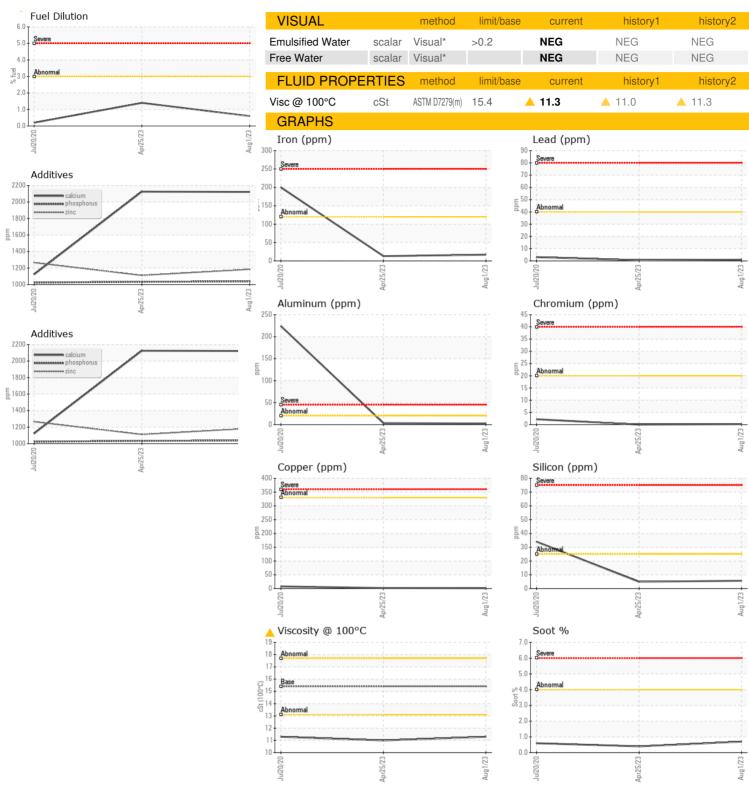
## Fluid Condition

Viscosity of sample indicates oil is within SAE 30 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

			2020	Aprz023 Aug20	23	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0035515	GFL0035513	GFL0005664
Sample Date		Client Info		01 Aug 2023	25 Apr 2023	20 Jul 2020
Machine Age	hrs	Client Info		0	13038	0
Oil Age	hrs	Client Info		600	600	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				ABNORMAL	ABNORMAL	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	17	13	<u>^</u> 200
Chromium	ppm	ASTM D5185(m)	>20	<1	0	2
Nickel	ppm	ASTM D5185(m)	>5	0	<1	2
Titanium	ppm	ASTM D5185(m)	>2	0	<1	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	2	3	224
Lead	ppm	ASTM D5185(m)	>40	1	<1	3
Copper	ppm	ASTM D5185(m)	>330	1	2	8
Tin	ppm	ASTM D5185(m)	>15	0	<1	<1
Antimony	ppm	ASTM D5185(m)		0	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
O - destant		10T11 DE (0E)				
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES	ppm	method	limit/base	0 current	0 history1	0 history2
	ppm	. ,	limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	0	current 21	history1	history2 2
ADDITIVES Boron Barium	ppm	method ASTM D5185(m) ASTM D5185(m)	0	current 21 0	history1 31 0	history2 2 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60	current 21 0 86	history1 31 0 85	history2 2 0 59
ADDITIVES  Boron  Barium  Molybdenum  Manganese	ppm ppm ppm	method  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)	0 0 60 0	21 0 86 <1	history1 31 0 85 <1	history2 2 0 59
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium	ppm ppm ppm ppm	method  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)	0 0 60 0 1010	current 21 0 86 <1 31	history1 31 0 85 <1 36	history2 2 0 59 3 962
ADDITIVES  Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)	0 0 60 0 1010 1070	current 21 0 86 <1 31 2122	history1  31  0  85  <1  36  2125	history2  2  0  59  3  962  1122
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus	ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150	current 21 0 86 <1 31 2122 1038	history1  31  0  85  <1  36  2125  1033	history2  2  0 59 3 962 1122 1023
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150	current 21 0 86 <1 31 2122 1038 1184	history1  31  0  85  <1  36  2125  1033  1111	history2  2  0 59 3 962 1122 1023 1266
ADDITIVES  Boron Barium  Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150	current  21  0  86  <1  31  2122  1038  1184  2940	history1  31  0  85  <1  36  2125  1033  1111  3040	history2  2  0 59 3 962 1122 1023 1266 2469
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	current  21  0  86  <1  31  2122  1038  1184  2940  <1	history1  31  0  85  <1  36  2125  1033  1111  3040  <1	history2  2  0 59 3 962 1122 1023 1266 2469 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	current  21 0 86 <1 31 2122 1038 1184 2940 <1 current	history1  31 0 85 <1 36 2125 1033 1111 3040 <1 history1	history2  2  0  59  3  962  1122  1023  1266  2469  <1
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  Lithium  CONTAMINAN  Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	current  21  0  86  <1  31  2122  1038  1184  2940  <1  current  6	history1  31  0  85  <1  36  2125  1033  1111  3040  <1  history1  5	history2  2  0 59 3 962 1122 1023 1266 2469 <1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	current  21  0  86  <1  31  2122  1038  1184  2940  <1  current  6  9	history1  31  0  85  <1  36  2125  1033  1111  3040  <1  history1  5	history2  2  0 59 3 962 1122 1023 1266 2469 <1 history2  ▲ 34 14
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	current  21  0  86  <1  31  2122  1038  1184  2940  <1  current  6  9  2	history1  31  0  85  <1  36  2125  1033  1111  3040  <1  history1  5  7	history2  2  0 59 3 962 1122 1023 1266 2469 <1 history2  34 14 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel	ppm	method  ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	current  21  0  86  <1  31  2122  1038  1184  2940  <1  current  6  9  2  0.6	history1  31 0 85 <1 36 2125 1033 1111 3040 <1 history1  5 7 1 1.4 history1	history2  2 0 59 3 962 1122 1023 1266 2469 <1 history2  ▲ 34 14 2 0.2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m) ASTM D7593*  method ASTM D7593*	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	current  21  0  86  <1  31  2122  1038  1184  2940  <1  current  6  9  2  0.6  current  0.7	history1  31 0 85 <1 36 2125 1033 1111 3040 <1 history1  5 7 1 1.4 history1 0.4	history2  2 0 59 3 962 1122 1023 1266 2469 <1 history2  14 2 0.2 history2 0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185(m)	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	current  21  0  86  <1  31  2122  1038  1184  2940  <1  current  6  9  2  0.6  current	history1  31 0 85 <1 36 2125 1033 1111 3040 <1 history1  5 7 1 1.4 history1	history2  2 0 59 3 962 1122 1023 1266 2469 <1 history2  ▲ 34 14 2 0.2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	method  ASTM D5185(m) ASTM D7593*  method  ASTM D7593*  method ASTM D7844* ASTM D7624* ASTM D7615*	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	current  21  0  86  <1  31  2122  1038  1184  2940  <1  current  6  9  2  0.6  current  0.7  9.8	history1  31  0  85  <1  36  2125  1033  1111  3040  <1  history1  5  7  1  1.4  history1  0.4  10.1	history2  2 0 59 3 962 1122 1023 1266 2469 <1 history2  14 2 0.2 history2  0.6 10.6



# **OIL ANALYSIS REPORT**





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number

: GFL0035515

: 5619014

Received : 02573963

: 03 Aug 2023 Diagnosed Diagnostician : Kevin Marson

: 04 Aug 2023 **Test Package**: MOB 1 (Additional Tests: FuelDilution, PercentFuel)

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 213 - Kitchener 16 Centennial Road, Kitchener Yard Kitchener, ON **CA N2B 3G1** Contact: Keith Zehr kzehr@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

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