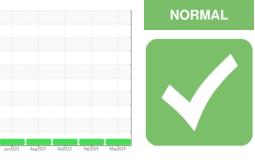


# **OIL ANALYSIS REPORT**

Sample Rating Trend



911044 Component Diesel Engine Fluid

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

SAMPLE INFORMATION method

### 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.

Machine Id

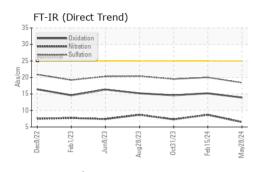
#### Fluid Condition

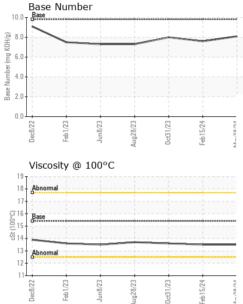
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0101011	GFL0101055	GFL0092782
Sample Date		Client Info		28 May 2024	15 Feb 2024	31 Oct 2023
Machine Age	hrs	Client Info		2519	2519	2519
Oil Age	hrs	Client Info		0	2519	2519
Oil Changed		Client Info		Not Changd	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	0	16	12
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	1	1
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	0	2	1
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 <1	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	0	<1	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 0	<1 0	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 57	<1 0 60	2 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 57 0	<1 0 60 <1	2 0 65 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 57 0 912	<1 0 60 <1 883	2 0 65 <1 966
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 0 57 0 912 1039	<1 0 60 <1 883 1014	2 0 65 <1 966 1133
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	0 0 57 0 912 1039 1017	<1 0 60 <1 883 1014 914	2 0 65 <1 966 1133 1081
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	0 0 57 0 912 1039 1017 1189	<1 0 60 <1 883 1014 914 1100	2 0 65 <1 966 1133 1081 1308
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 57 0 912 1039 1017 1189 3376	<1 0 60 <1 883 1014 914 1100 2414	2 0 65 <1 966 1133 1081 1308 2759
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 57 0 912 1039 1017 1189 3376 current	<1 0 60 <1 883 1014 914 1100 2414 history1	2 0 65 <1 966 1133 1081 1308 2759 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 57 0 912 1039 1017 1189 3376 current 0	<1 0 60 <1 883 1014 914 1100 2414 history1 3	2 0 65 <1 966 1133 1081 1308 2759 history2 3
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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	0 0 57 0 912 1039 1017 1189 3376 current 0 2	<1 0 60 <1 883 1014 914 1100 2414 <b>history1</b> 3 9	2 0 65 <1 966 1133 1081 1308 2759 history2 3 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	0 0 57 0 912 1039 1017 1189 3376 current 0 2 0	<1 0 60 <1 883 1014 914 1100 2414 <b>history1</b> 3 9 0	2 0 65 <1 966 1133 1081 1308 2759 history2 3 <1 1
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20	0 0 57 0 912 1039 1017 1189 3376 current 0 2 0 0	<1 0 60 <1 883 1014 914 1100 2414 history1 3 9 0 0 history1	2 0 65 <1 966 1133 1081 1308 2759 history2 3 <1 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 0 57 0 912 1039 1017 1189 3376 current 0 2 0 2 0 0 current	<1 0 60 <1 883 1014 914 1100 2414 history1 3 9 0 history1 0.9	2 0 65 <1 966 1133 1081 1308 2759 history2 3 <1 1 1 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	0 0 57 0 912 1039 1017 1189 3376 <i>current</i> 0 2 0 2 0 <i>current</i> 0.3 6.5	<1 0 60 <1 883 1014 914 1100 2414 history1 3 9 0 history1 0.9 8.7	2 0 65 <1 966 1133 1081 1308 2759 history2 3 <1 1 1 history2 0.6 7.3
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >4 >20	0 0 57 0 912 1039 1017 1189 3376 <u>current</u> 0 2 0 2 0 <u>current</u> 0.3 6.5 18.4	<1 0 60 <1 883 1014 914 1100 2414 history1 3 9 0 history1 0.9 8.7 20.0	2 0 65 <1 966 1133 1081 1308 2759 history2 3 <1 1 1 <u>history2</u> 0.6 7.3 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 TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	0 0 57 0 912 1039 1017 1189 3376 <i>current</i> 0 2 0 <i>current</i> 0.3 6.5 18.4 <i>current</i>	<1 0 60 <1 883 1014 914 1100 2414 <b>history1</b> 3 9 0 <b>history1</b> 0.9 8.7 20.0 <b>history1</b>	2 0 65 <1 966 1133 1081 1308 2759 history2 3 <1 1 1 history2 0.6 7.3 19.5 history2



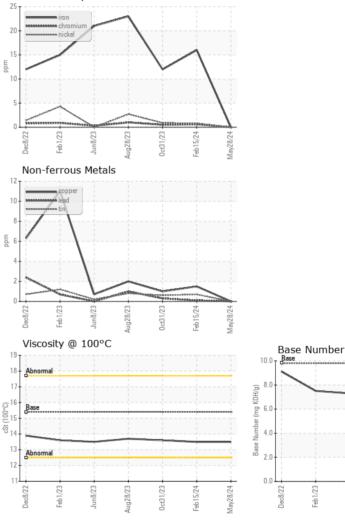
# **OIL ANALYSIS REPORT**

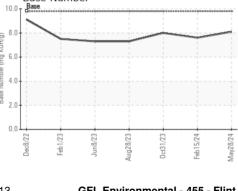




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.5	13.5	13.6







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 455 - Flint Sample No. : GFL0101011 Received : 03 Jun 2024 2051 W. Bristol Rd Lab Number : 06197282 Tested : 03 Jun 2024 Flint Township, MI US 48507 Unique Number : 11059405 Diagnosed : 03 Jun 2024 - Wes Davis Test Package : FLEET Contact: MARK WOMBLE Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. mwomble@gflenv.com T: (586)825-9514 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. F:

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

Submitted By: MARK WOMBLE

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