

# **OIL ANALYSIS REPORT**

## Area (62A1N88) ALEXANDER CITY 10818

**Diesel Engine** Fluic

PETRO CANADA DURON SHP 15W40 (11 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

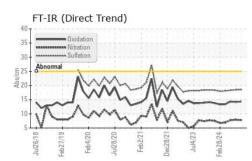
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

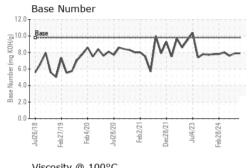


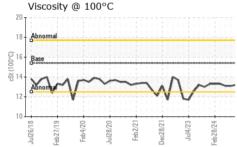
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0079740	GFL0089926	GFL0089933
Sample Date		Client Info		10 Apr 2024	02 Apr 2024	24 Mar 2024
Machine Age	hrs	Client Info		16575	16507	16437
Oil Age	hrs	Client Info		0	2105	2035
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>75	11	8	12
Chromium	ppm ppm	ASTM D5185m	>5	<1	0	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
				0	0	0
Titanium Silver	ppm	ASTM D5185m ASTM D5185m	>2 >2	0	0	0
	ppm			2	2	2
Aluminum	ppm	ASTM D5185m	>15	_	0	
Lead	ppm	ASTM D5185m	>25	<1		0
Copper	ppm	ASTM D5185m	>100	<1	0	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	12	13	11
	ppm ppm				13 0	
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	12 0 62	13	11 0 65
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	12 0 62 0	13 0	11 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	12 0 62 0 887	13 0 59 <1 862	11 0 65 0 1010
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	12 0 62 0	13 0 59 <1	11 0 65 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	12 0 62 0 887 1091 1013	13 0 59 <1 862	11 0 65 0 1010 1185 1094
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	12 0 62 0 887 1091	13 0 59 <1 862 1033	11 0 65 0 1010 1185
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	0 0 60 0 1010 1070 1150	12 0 62 0 887 1091 1013	13 0 59 <1 862 1033 942	11 0 65 0 1010 1185 1094
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	12 0 62 0 887 1091 1013 1191	13 0 59 <1 862 1033 942 1140 3069 history1	11 0 65 0 1010 1185 1094 1358 4023 history2
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 <b>method</b>	0 0 60 1010 1070 1150 1270 2060	12 0 62 0 887 1091 1013 1191 3401 current 5	13 0 59 <1 862 1033 942 1140 3069 history1 5	11 0 65 0 1010 1185 1094 1358 4023 history2 5
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	12 0 62 0 887 1091 1013 1191 3401 current	13 0 59 <1 862 1033 942 1140 3069 history1	11 0 65 0 1010 1185 1094 1358 4023 history2
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 <b>method</b>	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	12 0 62 0 887 1091 1013 1191 3401 current 5	13 0 59 <1 862 1033 942 1140 3069 history1 5	11 0 65 0 1010 1185 1094 1358 4023 history2 5
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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	12 0 62 0 887 1091 1013 1191 3401 <u>current</u> 5 31	13 0 59 <1 862 1033 942 1140 3069 history1 5 32	11 0 65 0 1010 1185 1094 1358 4023 history2 5 27
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 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	12 0 62 0 887 1091 1013 1191 3401 <u>current</u> 5 31 16	13 0 59 <1 862 1033 942 1140 3069 history1 5 32 0	11 0 65 0 1010 1185 1094 1358 4023 history2 5 27 0
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 limit/base >25 >20 limit/base >26	12 0 62 0 887 1091 1013 1191 3401 current 5 31 16 current	13 0 59 <1 862 1033 942 1140 3069 history1 5 32 0	11 0 65 0 1010 1185 1094 1358 4023 <b>history2</b> 5 27 0 <b>history2</b>
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 limit/base >25 >20 limit/base >26	12 0 62 0 887 1091 1013 1191 3401 <i>current</i> 5 31 16 <i>current</i> 0.3	13 0 59 <1 862 1033 942 1140 3069 history1 5 32 0 history1 0.3	11 0 65 0 1010 1185 1094 1358 4023 history2 5 27 0 0 history2 0.3
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 2060 2060 225 20 20 20 1imit/base >20	12 0 62 0 887 1091 1013 1191 3401 <i>current</i> 5 31 16 <i>current</i> 0.3 7.8	13 0 59 <1 862 1033 942 1140 3069 history1 5 32 0 history1 0.3 7.9	11 0 65 0 1010 1185 1094 1358 4023 history2 5 27 0 Vistory2 0.3 7.8
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 2060 225 20 225 20 <b>limit/base</b> >20 <b>limit/base</b> >20 30	12 0 62 0 887 1091 1013 1191 3401 <u>current</u> 5 31 16 <u>current</u> 0.3 7.8 18.5	13 0 59 <1 862 1033 942 1140 3069 history1 5 32 0 history1 0.3 7.9 18.5	11 0 65 0 1010 1185 1094 1358 4023 <b>history2</b> 5 27 0 <b>history2</b> 0.3 7.8 18.3
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 20 20 20 20 20 20 20 20 20 20	12 0 62 0 887 1091 1013 1191 3401 <i>current</i> 5 31 16 <i>current</i> 0.3 7.8 18.5 <i>current</i>	13 0 59 <1 862 1033 942 1140 3069 history1 5 32 0 history1 0.3 7.9 18.5 history1	11 0 65 0 1010 1185 1094 1358 4023 history2 5 27 0 history2 0.3 7.8 18.3 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	13.2	13.1	13.1
GRAPHS						

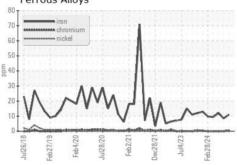
Ferrous Alloys

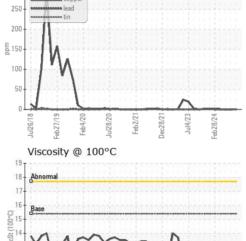
Non-ferrous Metals

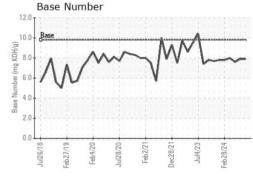
300

10

Jul26/1







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 172 - Montgomery-Alexander City-Tallahassee Sample No. : GFL0079740 Received : 16 Apr 2024 **Multiple Sites** Lab Number : 06150902 Tested : 17 Apr 2024 Montgomery, AL Unique Number : 10980980 Diagnosed : 17 Apr 2024 - Wes Davis US 36108 Test Package : FLEET Contact: RICHARD HATFIELD Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. rhatfield@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Feb4/20

Feb27/19

ul28/20

eb2/21

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eb28/24

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Submitted By: Lisa Reeves Page 2 of 2