

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

749005-310061

Component **Diesel Engine**

Fluic PETRO CANADA DURON SHP 15W40 (--- 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.

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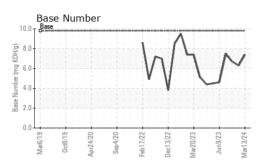


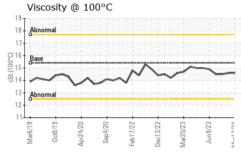
Mar2

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0106812	GFL0106823	GFL0084580
Sample Date		Client Info		13 Mar 2024	21 Feb 2024	21 Dec 2023
Machine Age	hrs	Client Info		14622	14444	14082
Oil Age	hrs	Client Info		600	0	625869
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.0
WEAR METAL	S	method	limit/base	current	history1	history2
		ASTM D5185m	>100	6	8	20
lron Chromium	ppm			0	8 <1	20
Nickel	ppm	ASTM D5185m		0	<1	<1
	ppm	ASTM D5185m	>4			
Titanium Silver	ppm	ASTM D5185m	>3	0	<1 0	<1
	ppm	ASTM D5185m		0		3
Aluminum	ppm	ASTM D5185m		<1	<1	
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m		0	<1	2
Tin	ppm		>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 0	current 27	history1 20	history2 11
	ppm ppm					
Boron		ASTM D5185m	0	27	20	11
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	27 0	20 0	11 13
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	27 0 49	20 0 52	11 13 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	27 0 49 0	20 0 52 <1	11 13 58 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	27 0 49 0 602	20 0 52 <1 497	11 13 58 2 555
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	27 0 49 0 602 1718	20 0 52 <1 497 1490	11 13 58 2 555 1454
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	27 0 49 0 602 1718 865	20 0 52 <1 497 1490 676	11 13 58 2 555 1454 773
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	27 0 49 0 602 1718 865 1052	20 0 52 <1 497 1490 676 760	11 13 58 2 555 1454 773 908
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	0 0 60 1010 1070 1150 1270 2060	27 0 49 0 602 1718 865 1052 3108	20 0 52 <1 497 1490 676 760 2222	11 13 58 2 555 1454 773 908 2457
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	0 0 60 1010 1070 1150 1270 2060	27 0 49 0 602 1718 865 1052 3108 current	20 0 52 <1 497 1490 676 760 2222 history1	11 13 58 2 555 1454 773 908 2457 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 method	0 0 0 1010 1070 1150 1270 2060 limit/base >25	27 0 49 0 602 1718 865 1052 3108 current 4	20 0 52 <1 497 1490 676 760 2222 history1 5	11 13 58 2 555 1454 773 908 2457 history2 18
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 ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	27 0 49 0 602 1718 865 1052 3108 <u>current</u> 4 10	20 0 52 <1 497 1490 676 760 2222 history1 5 63	11 13 58 2 555 1454 773 908 2457 history2 18 115
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 limit/base >25	27 0 49 0 602 1718 865 1052 3108 <u>current</u> 4 10 <1	20 0 52 <1 497 1490 676 760 2222 history1 5 63 7	11 13 58 2 555 1454 773 908 2457 history2 18 115 29
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	27 0 49 0 602 1718 865 1052 3108 current 4 10 <1 current	20 0 52 <1 497 1490 676 760 2222 history1 5 63 7 history1	11 13 58 2 555 1454 773 908 2457 history2 18 115 29 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >20	27 0 49 0 602 1718 865 1052 3108 <i>current</i> 4 10 <1 <i>current</i> 0	20 0 52 <1 497 1490 676 760 2222 history1 5 63 7 history1 0	11 13 58 2 555 1454 773 908 2457 history2 18 115 29 history2 0
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 imit/base >25 imit/base >20	27 0 49 0 602 1718 865 1052 3108 <i>current</i> 4 10 <1 <i>current</i> 0 8.0	20 0 52 <1 497 1490 676 760 2222 history1 5 63 7 history1 0 9.5	11 13 58 2 555 1454 773 908 2457 history2 18 115 29 history2 0 9.8
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 imit/base >25 imit/base >20 imit/base >3 >20	27 0 49 0 602 1718 865 1052 3108 current 4 10 <1 <1 current 0 8.0 19.3	20 0 52 <1 497 1490 676 760 2222 history1 5 63 7 history1 0 9.5 19.7	11 13 58 2 555 1454 773 908 2457 history2 18 115 29 history2 0 9.8 19.4
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 D7624	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >20 imit/base >3 >20	27 0 49 0 602 1718 865 1052 3108 <i>current</i> 4 10 <1 <i>current</i> 0 8.0 19.3	20 0 52 <1 497 1490 676 760 2222 history1 5 63 7 history1 0 9.5 19.7 history1	11 13 58 2 555 1454 773 908 2457 history2 18 115 29 history2 0 9.8 19.4 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	14.6	14.6	14.5
GRAPHS						

Ferrous Alloys 35 30 25 20 10 Sep4/20 Feb17/22 un9/23 lec13/22 far20/23 Aar13/74 Aar6/1 Ict8/ Non-ferrous Metals 25 20 10 Sep4/20 -eb17/22 Per13/7 ct8/ Viscosity @ 100°C Base Number 19 10.0 18 17 8. (B/HOX Bu) ()-00 15 6 (5 14 4 (Base 13 Abnorm 12 11 0.0 Mar13/24 -Mar6/19 Sep4/20 Mar6/19 Sep4/20 Feb17/22 Mar13/24 0ct8/19 pr24/20 Feb17/22 Dec13/22 Mar20/23 Jun9/23 Oct8/19 Apr24/20 Dec13/77 : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Laboratory GFL Environmental - 856 - Houston South Sample No. : GFL0106812 Received : 20 Mar 2024 8515 Highway 6 South Lab Number : 06123379 Tested : 21 Mar 2024 Houston, TX Unique Number : 10937530 Diagnosed : 22 Mar 2024 - Don Baldridge US 77083 Test Package : FLEET Contact: Apolinar Zacarias pzacariascano@gflenv.com

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To discuss this sample report, contact Customer Service at 1-800-237-1369.
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* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

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