

## **OIL ANALYSIS REPORT**

#### NORMAL

## Machine Id

#### 10482 Component Diesel Engine

Fluid

### PETRO CANADA DURON SHP 15W40 (13 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.

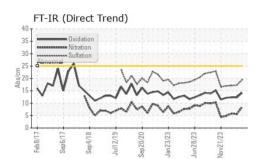
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115692	GFL0112317	GFL0109918
Sample Date		Client Info		10 Apr 2024	12 Feb 2024	29 Jan 2024
Machine Age	hrs	Client Info		176	2613	2475
Oil Age	hrs	Client Info		520	137	524
Oil Changed		Client Info		Not Changd	Not Changd	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	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	26	5	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	3	9
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	3	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<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 8	history1 13	history2 3
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	8	13	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	8 0	13 0	3
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8 0 62	13 0 55	3 0 53
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	8 0 62 <1	13 0 55 0 812 1002	3 0 53 <1
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	8 0 62 <1 860	13 0 55 0 812	3 0 53 <1 797 904 927
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	8 0 62 <1 860 1073	13 0 55 0 812 1002 929 1118	3 0 53 <1 797 904 927 1084
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	8 0 62 <1 860 1073 1018	13 0 55 0 812 1002 929	3 0 53 <1 797 904 927
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	0 0 60 0 1010 1070 1150 1270	8 0 62 <1 860 1073 1018 1217	13 0 55 0 812 1002 929 1118	3 0 53 <1 797 904 927 1084
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 0 1010 1070 1150 1270 2060	8 0 62 <1 860 1073 1018 1217 3379	13 0 55 0 812 1002 929 1118 2867 history1 4	3 0 53 <1 797 904 927 1084 2741 <b>history2</b> 7
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	8 0 62 <1 860 1073 1018 1217 3379 current	13 0 55 0 812 1002 929 1118 2867 history1	3 0 53 <1 797 904 927 1084 2741 <b>history2</b>
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 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	8 0 62 <1 860 1073 1018 1217 3379 current 8	13 0 55 0 812 1002 929 1118 2867 history1 4	3 0 53 <1 797 904 927 1084 2741 <b>history2</b> 7
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	8 0 62 <1 860 1073 1018 1217 3379 current 8 8 8	13 0 55 0 812 1002 929 1118 2867 history1 4 3 <1 history1	3 0 53 <1 797 904 927 1084 2741 <b>kistory2</b> 7 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20	8 0 62 <1 860 1073 1018 1217 3379 current 8 8 8 <1 <1 current 1.1	13 0 55 0 812 1002 929 1118 2867 history1 4 3 <1 4 3 <1 history1 0.3	3 0 53 <1 797 904 927 1084 2741 history2 7 4 1 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20	8 0 62 <1 860 1073 1018 1217 3379 current 8 8 8 <1 current 1.1 8.4	13 0 55 0 812 1002 929 1118 2867 history1 4 3 <1 history1	3 0 53 <1 797 904 927 1084 2741 history2 7 4 1 1 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >3	8 0 62 <1 860 1073 1018 1217 3379 current 8 8 8 <1 <1 current 1.1	13 0 55 0 812 1002 929 1118 2867 history1 4 3 <1 4 3 <1 history1 0.3	3 0 53 <1 797 904 927 1084 2741 history2 7 4 1 history2 0.5
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 >20 imit/base >20	8 0 62 <1 860 1073 1018 1217 3379 current 8 8 8 <1 current 1.1 8.4	13 0 55 0 812 1002 929 1118 2867 history1 4 3 <1 4 3 <1 history1 0.3 5.6	3 0 53 <1 797 904 927 1084 2741 history2 7 4 1 1 history2 0.5 5.8
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 <b>imit/base</b> >25 20 <b>imit/base</b> >3 >20 >3	8 0 62 <1 860 1073 1018 1217 3379 current 8 8 8 <1 <1 current 1.1 8.4 19.3	13 0 55 0 812 1002 929 1118 2867 history1 4 3 <1 4 3 <1 0.3 5.6 17.3	3 0 53 <1 797 904 927 1084 2741 <b>history2</b> 7 4 1 1 <b>history2</b> 0.5 5.8 17.1

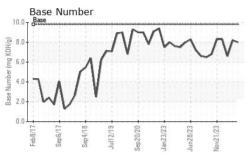
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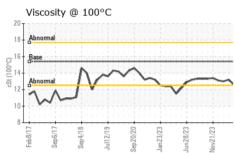




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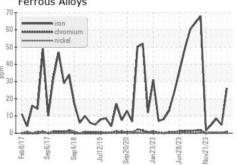


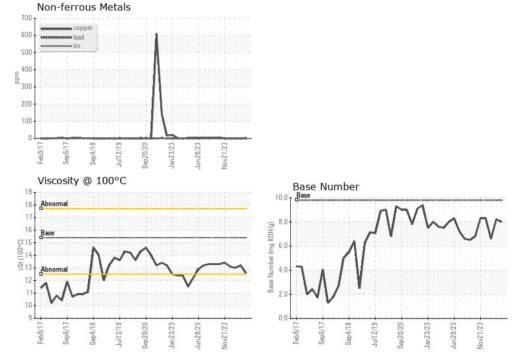




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	12.6	13.2	13.0
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 010 - Stockbridge Sample No. : GFL0115692 Received : 11 Apr 2024 1280 Rum Creek Parkway Lab Number : 06146483 Tested : 12 Apr 2024 Stockbridge, GA Unique Number : 10976561 Diagnosed : 12 Apr 2024 - Wes Davis US 30281 Test Package : FLEET Contact: JOSHUA TINKER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. joshuatinker@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)

Report Id: GFL010 [WUSCAR] 06146483 (Generated: 04/12/2024 18:45:38) Rev: 1

Submitted By: JOSHUA TINKER Page 2 of 2

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