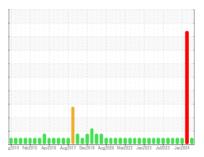


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id
11102
Component
Diesel Engine

## PETRO CANADA DURON SHP 15W40 (30 GAL)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

### Contamination

No evidence of coolant present in the oil. There is no indication of any contamination in the oil.

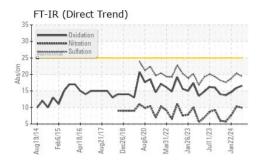
## **Fluid Condition**

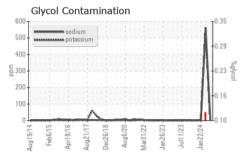
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

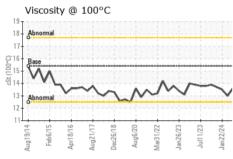
JAL)						
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0098887	GFL0098862	GFL0098963
Sample Date		Client Info		16 Apr 2024	06 Mar 2024	22 Jan 2024
Machine Age	hrs	Client Info		12440	12345	12199
Oil Age	hrs	Client Info		62002	62002	62002
Oil Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	SEVERE	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
WEAR METAL	.S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>130	25	39	18
Chromium	ppm	ASTM D5185m	>10	2	<1	0
Nickel	ppm	ASTM D5185m	>4	1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	6	2
Lead	ppm	ASTM D5185m	>20	1	0	0
Copper	ppm	ASTM D5185m	>125	4	<1	2
Tin	ppm	ASTM D5185m	>4	1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
_		ACTM DE10Ess	0	<1	1	3
Boron	ppm	ASTM D5185m	O			0
Boron Barium	ppm	ASTM D5185m		<1	0	0
Barium	ppm	ASTM D5185m	0 60	<1	0	0
Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0 60	<1 58	0 96	0 56
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	<1 58 1	0 96 0	0 56 0
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	<1 58 1 888	0 96 0 938	0 56 0 984
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	<1 58 1 888 1053	0 96 0 938 1278	0 56 0 984 1098
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	<1 58 1 888 1053 956	0 96 0 938 1278 1156	0 56 0 984 1098 1066
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 60 0 1010 1070 1150 1270	<1 58 1 888 1053 956 1197	0 96 0 938 1278 1156 1292	0 56 0 984 1098 1066
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 60 0 1010 1070 1150 1270 2060	<1 58 1 888 1053 956 1197 3157	0 96 0 938 1278 1156 1292 3406	0 56 0 984 1098 1066 1281 3213
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 60 0 1010 1070 1150 1270 2060	<1 58 1 888 1053 956 1197 3157 current	0 96 0 938 1278 1156 1292 3406 history1	0 56 0 984 1098 1066 1281 3213
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	<1 58 1 888 1053 956 1197 3157 current	0 96 0 938 1278 1156 1292 3406 history1	0 56 0 984 1098 1066 1281 3213 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	<1 58 1 888 1053 956 1197 3157 current 4 <1	0 96 0 938 1278 1156 1292 3406 history1 10 ▲ 562	0 56 0 984 1098 1066 1281 3213 history2 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	<1 58 1 888 1053 956 1197 3157 current 4 <1	0 96 0 938 1278 1156 1292 3406 history1 10 ▲ 562 ▲ 553	0 56 0 984 1098 1066 1281 3213 history2 2 <1 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm	ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	<1 58 1 888 1053 956 1197 3157 current 4 <1 4 NEG	0 96 0 938 1278 1156 1292 3406 history1 10 ▲ 562 ▲ 553 ▲ 0.12	0 56 0 984 1098 1066 1281 3213 history2 2 <1 2 NEG
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm	ASTM D5185m *ASTM D2982	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 58 1 888 1053 956 1197 3157 current 4 <1 4 NEG current	0 96 0 938 1278 1156 1292 3406 history1 10 △ 562 △ 553 △ 0.12 history1	0 56 0 984 1098 1066 1281 3213 history2 2 <1 2 NEG
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m *ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 58 1 888 1053 956 1197 3157 current 4 <1 4 NEG current 0.7	0 96 0 938 1278 1156 1292 3406 history1 10 △ 562 △ 553 △ 0.12 history1 0.5	0 56 0 984 1098 1066 1281 3213 history2 2 <1 2 NEG history2 0.5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm	ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 58 1 888 1053 956 1197 3157 current 4 <1 4 NEG current 0.7 9.9	0 96 0 938 1278 1156 1292 3406  history1 10  ▲ 562 ▲ 553 ▲ 0.12  history1 0.5 10.3	0 56 0 984 1098 1066 1281 3213 history2 2 <1 2 NEG history2 0.5 7.6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm	ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D76124 *ASTM D76124 *ASTM D76125 *Method	0 60 0 1010 1070 1150 1270 2060  limit/base >25 >20 limit/base >6 >20 >30 limit/base	<1 58 1 888 1053 956 1197 3157 current 4 <1 4 NEG current 0.7 9.9 19.4 current	0 96 0 938 1278 1156 1292 3406 history1 10  ▲ 562 ▲ 553 ▲ 0.12 history1 0.5 10.3 20.3 history1	0 56 0 984 1098 1066 1281 3213 history2 2 <1 2 NEG history2 0.5 7.6 18.7 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	<1 58 1 888 1053 956 1197 3157 current 4 <1 4 NEG current 0.7 9.9 19.4	0 96 0 938 1278 1156 1292 3406 history1 10 ▲ 562 ▲ 553 ▲ 0.12 history1 0.5 10.3 20.3	0 56 0 984 1098 1066 1281 3213 history2 2 <1 2 NEG history2 0.5 7.6 18.7

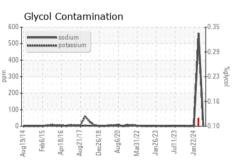


# **OIL ANALYSIS REPORT**





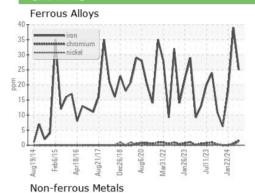


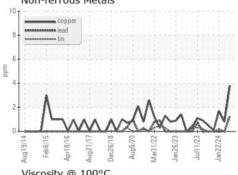


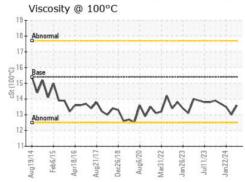
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

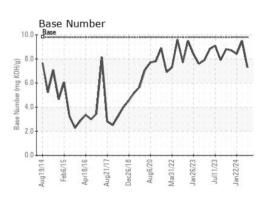
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.0	13.5

## **GRAPHS**













Laboratory Sample No.

Lab Number : 06160202

: GFL0098887 Unique Number : 10995625

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 25 Apr 2024

**Tested** : 30 Apr 2024 Diagnosed : 30 Apr 2024 - Jonathan Hester

699 Jack Miller Boulevard Clarksville, TN

US 37042 Contact: ROBERT THIBAULT robert.thibault@gflenv.com

GFL Environmental - 084 - Clarksville

Test Package : FLEET Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Report Id: GFL084 [WUSCAR] 06160202 (Generated: 05/04/2024 04:58:46) Rev: 1

Submitted By: GFL084,GFL842,GFL844,GFL846 - ROBERT THIBAULT

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