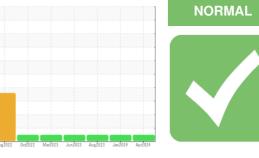


## **OIL ANALYSIS REPORT**

Sample Rating Trend

SAMPLE INFORMATION method limit/base





525033 Component Diesel Engine Fluid

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

### DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

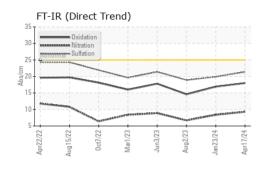
### Fluid Condition

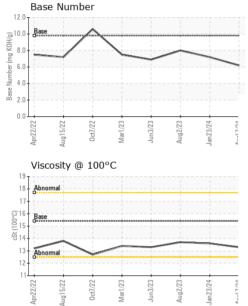
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0116199	GFL0100394	GFL0077921
Sample Date		Client Info		17 Apr 2024	23 Jan 2024	02 Aug 2023
Machine Age	hrs	Client Info		13750	13154	12124
Oil Age	hrs	Client Info		596	486	602
Oil Changed		Client Info		Changed	Changed	Changed
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	ppm	ASTM D5185m	>120	16	12	12
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	3	7
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	3
Lead	ppm	ASTM D5185m	>40	2	2	<1
Copper	ppm	ASTM D5185m	>330	23	48	177
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES			11			la la tana 0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 4	history1 <1	nistory2 0
	ppm ppm					
Boron		ASTM D5185m	0	4	<1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	<1 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 63	<1 0 59	0 1 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 63 <1	<1 0 59 <1	0 1 62 <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	4 0 63 <1 955	<1 0 59 <1 964 1075 965	0 1 62 <1 978 1058 995
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	4 0 63 <1 955 1080	<1 0 59 <1 964 1075	0 1 62 <1 978 1058
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	4 0 63 <1 955 1080 1016	<1 0 59 <1 964 1075 965	0 1 62 <1 978 1058 995
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	4 0 63 <1 955 1080 1016 1241	<1 0 59 <1 964 1075 965 1232	0 1 62 <1 978 1058 995 1223
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	4 0 63 <1 955 1080 1016 1241 2714	<1 0 59 <1 964 1075 965 1232 2527	0 1 62 <1 978 1058 995 1223 2906
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	4 0 63 <1 955 1080 1016 1241 2714 current	<1 0 59 <1 964 1075 965 1232 2527 history1	0 1 62 <1 978 1058 995 1223 2906 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> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 63 <1 955 1080 1016 1241 2714 2714 current 5	<1 0 59 <1 964 1075 965 1232 2527 history1 4	0 1 62 <1 978 1058 995 1223 2906 history2 4
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 limit/base >25	4 0 63 <1 955 1080 1016 1241 2714 <b>Current</b> 5 10	<1 0 59 <1 964 1075 965 1232 2527 history1 4 8	0 1 62 <1 978 1058 995 1223 2906 history2 4 15
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	4 0 63 <1 955 1080 1016 1241 2714 current 5 10 2	<1 0 59 <1 964 1075 965 1232 2527 history1 4 8 2	0 1 62 <1 978 1058 995 1223 2906 history2 4 15 6
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 <b>limit/base</b> >25	4 0 63 <1 955 1080 1016 1241 2714 <i>current</i> 5 10 2 <i>current</i>	<1 0 59 <1 964 1075 965 1232 2527 history1 4 8 2 2 <i>h</i> istory1	0 1 62 <1 978 1058 995 1223 2906 history2 4 15 6 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	4 0 63 <1 955 1080 1016 1241 2714 <i>current</i> 5 10 2 <i>current</i> 0.6	<1 0 59 <1 964 1075 965 1232 2527 history1 4 8 2 2 history1 0.5	0 1 62 <1 978 1058 995 1223 2906 history2 4 15 6 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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	4 0 63 <1 955 1080 1016 1241 2714 <i>current</i> 5 10 2 <i>current</i> 0.6 9.3 21.4	<1 0 59 <1 964 1075 965 1232 2527 history1 4 8 2 2 history1 0.5 8.4	0 1 62 <1 978 1058 995 1223 2906 history2 4 15 6 history2 0.3 6.7
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> >20 <b>imit/base</b> >20	4 0 63 <1 955 1080 1016 1241 2714 <i>current</i> 5 10 2 <i>current</i> 0.6 9.3 21.4	<1 0 59 <1 964 1075 965 1232 2527 history1 4 8 2 2 history1 0.5 8.4 19.9	0 1 62 <1 978 1058 995 1223 2906 <b>history2</b> 4 15 6 <b>history2</b> 0.3 6.7 18.9
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 2260 2060 225 220 220 imit/base >4 >20 >30	4 0 63 <1 955 1080 1016 1241 2714 <i>current</i> 5 10 2 <i>current</i> 0.6 9.3 21.4 <i>current</i>	<1 0 59 <1 964 1075 965 1232 2527 history1 4 8 2 history1 0.5 8.4 19.9 history1	0 1 62 <1 978 1058 995 1223 2906 history2 4 15 6 history2 0.3 6.7 18.9 history2

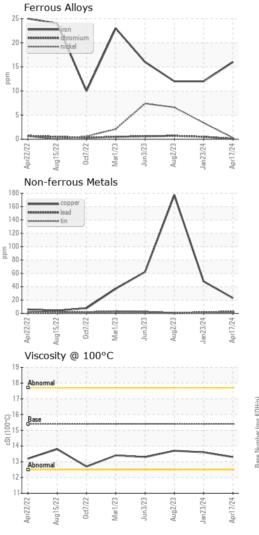


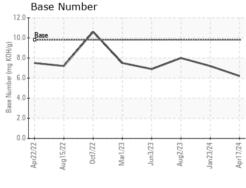
# **OIL ANALYSIS REPORT**





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	13.3	13.6	13.7
GRAPHS						





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 935 - Omro HC Sample No. : GFL0116199 Received : 22 Apr 2024 250 Alder Avenue Lab Number : 06156784 Tested : 23 Apr 2024 Omro, WI US 54963 Unique Number : 10992207 Diagnosed : 23 Apr 2024 - Wes Davis Test Package : FLEET Contact: Tim Kieffer Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. tim.kieffer@gflenv.com T: (608)219-0288 \* - 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) E:

Report Id: GFL935 [WUSCAR] 06156784 (Generated: 04/23/2024 16:50:36) Rev: 1

Submitted By: See also GFL935 - Tim Kieffer