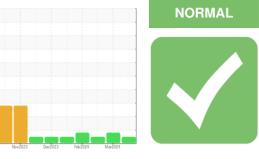


# **OIL ANALYSIS REPORT**

Sample Rating Trend



414062 Component Diesel Engine Fluid

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

SAMPLE INFORMATION method

## 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.

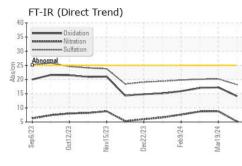
### Fluid Condition

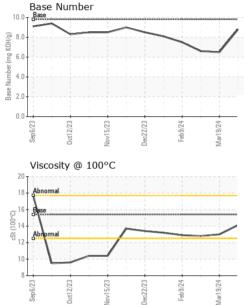
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method	limit/base	current	nistory i	nistory∠
Sample Number		Client Info		GFL0110628	GFL0110572	GFL0110555
Sample Date		Client Info		04 Apr 2024	19 Mar 2024	14 Mar 2024
Machine Age	hrs	Client Info		10133	1410	10133
Oil Age	hrs	Client Info		400	600	400
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	ABNORMAL	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	c	method	limit/bass	ourropt	biotonut	biotory?
	0		limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	5	28	23
Chromium	ppm	ASTM D5185m	>20	<1	2	0
Nickel	ppm	ASTM D5185m	>5	1	<u> </u>	6
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	10	9
Lead	ppm	ASTM D5185m	>40	1	1	<1
Copper	ppm	ASTM D5185m	>330	40	175	187
Tin	ppm	ASTM D5185m	>15	<1	2	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 0	history1 6	history2 5
	ppm ppm	ASTM D5185m				
Boron Barium		ASTM D5185m	0	0	6	5
Boron	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	0 0	6	5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 62	6 1 67	5 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 62 <1	6 1 67 2	5 0 63 <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	0 0 62 <1 1121	6 1 67 2 929	5 0 63 <1 999
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	0 0 62 <1 1121 1198	6 1 67 2 929 1104	5 0 63 <1 999 1142
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	0 0 62 <1 1121 1198 1175	6 1 67 2 929 1104 896	5 0 63 <1 999 1142 991
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	0 0 62 <1 1121 1198 1175 1457	6 1 67 2 929 1104 896 1138	5 0 63 <1 999 1142 991 1184
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	0 0 62 <1 1121 1198 1175 1457 4062 current	6 1 67 2 929 1104 896 1138 2334 history1	5 0 63 <1 999 1142 991 1184 2878 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 62 <1 1121 1198 1175 1457 4062 current 4	6 1 67 2 929 1104 896 1138 2334 history1 12	5 0 63 <1 999 1142 991 1184 2878
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 <b>limit/base</b>	0 0 62 <1 1121 1198 1175 1457 4062 current	6 1 67 2 929 1104 896 1138 2334 history1	5 0 63 <1 999 1142 991 1184 2878 history2 9
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 60 1010 1070 1150 1270 2060 <b>limit/base</b>	0 0 62 <1 1121 1198 1175 1457 4062 current 4 3	6 1 67 2 929 1104 896 1138 2334 <b>history1</b> 12 3	5 0 63 <1 999 1142 991 1184 2878 history2 9 4
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 <b>Jimit/base</b> >25	0 0 62 <1 1121 1198 1175 1457 4062 current 4 3 5 5	6 1 67 2 929 1104 896 1138 2334 history1 12 3 30 history1	5 0 63 <1 999 1142 991 1184 2878 history2 9 4 24
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	0 0 62 <1 1121 1198 1175 1457 4062 <i>current</i> 4 3 5 <i>current</i> 0.1	6 1 67 2 929 1104 896 1138 2334 history1 12 3 30 history1 0.4	5 0 63 <1 999 1142 991 1184 2878 history2 9 4 24 24 history2 0.4
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 TS 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	0 0 62 <1 1121 1198 1175 1457 4062 <i>current</i> 4 3 5 <i>current</i> 0.1 5.2	6 1 67 2 929 1104 896 1138 2334 history1 12 3 30 history1 0.4 8.8	5 0 63 <1 999 1142 991 1184 2878 history2 9 4 24 24 history2 0.4 8.7
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> >4 >20	0 0 62 <1 1121 1198 1175 1457 4062 <b>current</b> 4 3 5 <b>current</b> 0.1 5.2 18.2	6 1 67 2 929 1104 896 1138 2334 history1 12 3 30 history1 0.4 8.8 20.2	5 0 63 <1 999 1142 991 1184 2878 <b>history2</b> 9 4 24 24 <b>history2</b> 0.4 8.7 20.1
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >4 >20 >30 imit/base	0 0 62 <1 1121 1198 1175 1457 4062 <i>current</i> 4 3 5 <i>current</i> 0.1 5.2 18.2 <i>current</i>	6 1 67 2 929 1104 896 1138 2334 history1 12 3 30 history1 0.4 8.8 20.2 history1	5 0 63 <1 999 1142 991 1184 2878 history2 9 4 24 24 history2 0.4 8.7 20.1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 /////////////////////////////////	0 0 62 <1 1121 1198 1175 1457 4062 <i>current</i> 4 3 5 <i>current</i> 0.1 5.2 18.2 18.2 <i>current</i>	6 1 67 2 929 1104 896 1138 2334 history1 12 3 30 history1 0.4 8.8 20.2 history1 17.2	5 0 63 <1 999 1142 991 1184 2878 history2 9 4 24 24 history2 0.4 8.7 20.1 history2 17.0
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >4 >20 >30 imit/base	0 0 62 <1 1121 1198 1175 1457 4062 <i>current</i> 4 3 5 <i>current</i> 0.1 5.2 18.2 <i>current</i>	6 1 67 2 929 1104 896 1138 2334 history1 12 3 30 history1 0.4 8.8 20.2 history1	5 0 63 <1 999 1142 991 1184 2878 history2 9 4 24 24 history2 0.4 8.7 20.1 history2



# **OIL ANALYSIS REPORT**

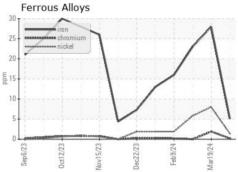


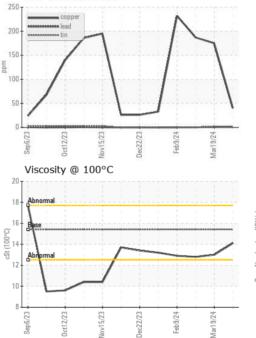


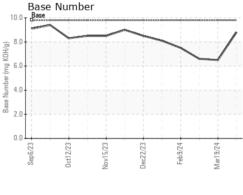
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.1	13.0	12.8
CDADUS						

GRAPHS

Non-ferrous Metals







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 166 - Phenix City Sample No. : GFL0110628 Received : 11 Apr 2024 18 Old Brickyard Rd Lab Number : 06145662 Tested : 12 Apr 2024 Phenix City, AL Unique Number : 10970470 Diagnosed : 12 Apr 2024 - Wes Davis US 36869 Test Package : FLEET Contact: EDWARD CASHMAN Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. ecashman@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:

Report Id: GFL166 [WUSCAR] 06145662 (Generated: 04/12/2024 09:37:26) Rev: 1

Submitted By: DARRIN WRIGHT

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