

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

### WL0182 Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### 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		GFL0108446	GFL0066221	GFL0066052
Sample Date		Client Info		10 Apr 2024	11 Nov 2023	27 Jun 2023
Machine Age	hrs	Client Info		0	10251	0
Oil Age	hrs	Client Info		0	344	0
Oil Changed		Client Info		N/A	Changed	N/A
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	6	3	8
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	<1	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	<1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	9	12
Barium		ACTM DE105m	0	0	0	0
Danum	ppm	ASTIVI DOTODITI	Ũ	•	0	0
Molybdenum	ppm ppm	ASTM D5185m	60	61	58	66
Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	60 0	61 0	58 <1	66 <1
Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010	61 0 999	58 <1 903	66 <1 1034
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	61 0 999 1104	58 <1 903 1002	66 <1 1034 1180
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150	61 0 999 1104 1060	58 <1 903 1002 997	66 <1 1034 1180 1107
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270	61 0 999 1104 1060 1217	58 <1 903 1002 997 1183	66 <1 1034 1180 1107 1373
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	60 0 1010 1070 1150 1270 2060	61 0 999 1104 1060 1217 3588	58 <1 903 1002 997 1183 2861	66 <1 1034 1180 1107 1373 3995
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	60 0 1010 1070 1150 1270 2060 limit/base	61 0 999 1104 1060 1217 3588 current	58 <1 903 1002 997 1183 2861 history1	66 <1 1034 1180 1107 1373 3995 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	60 0 1010 1070 1150 1270 2060 limit/base >25	61 0 999 1104 1060 1217 3588 current 7	58 <1 903 1002 997 1183 2861 history1 8	66 <1 1034 1180 1107 1373 3995 history2 11
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	60 0 1010 1070 1150 1270 2060 limit/base >25	61 0 999 1104 1060 1217 3588 current 7 <1	58 <1 903 1002 997 1183 2861 history1 8 2	66 <1 1034 1180 1107 1373 3995 history2 11 1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	61         0         999         1104         1060         1217         3588         current         7         <1         0	58 <1 903 1002 997 1183 2861 history1 8 2 2 <1	66 <1 1034 1180 1107 1373 3995 history2 11 1 1 1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 iimit/base >25 >20	61         0         999         1104         1060         1217         3588         current         7         <1         0         current	58 <1 903 1002 997 1183 2861 history1 8 2 <1 kistory1	66 <1 1034 1180 1107 1373 3995 history2 11 1 1 1 1 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3	61         0         999         1104         1060         1217         3588         current         7         <1         0         current         0.2	58 <1 903 1002 997 1183 2861 history1 8 2 2 <1 8 2 <1 history1 0.2	66 <1 1034 1180 1107 1373 3995 history2 11 1 1 history2 0.3
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	<ul> <li>60</li> <li>60</li> <li>1010</li> <li>1070</li> <li>1150</li> <li>1270</li> <li>2060</li> <li>limit/base</li> <li>&gt;20</li> <li>limit/base</li> <li>&gt;3</li> <li>&gt;20</li> </ul>	61         0         999         1104         1060         1217         3588         current         7         <1         0         current         0.2         7.1	58 <1 903 1002 997 1183 2861 history1 8 2 <1 8 2 <1 history1 0.2 6.4	66 <1 1034 1180 1107 1373 3995 history2 11 1 1 1 history2 0.3 7.5
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b> >20 <b>limit/base</b> >3 >20	61         0         999         1104         1060         1217         3588         current         7         <1         0         current         0         current         0.2         7.1         18.4	58 <1 903 1002 997 1183 2861 history1 8 2 <1 history1 0.2 6.4 18.5	66 <1 1034 1180 1107 1373 3995 history2 11 1 1 history2 0.3 7.5 19.2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	60 0 1010 1070 1150 1270 2060 imit/base >25 ////////////////////////////////////	61 0 9999 1104 1060 1217 3588 current 7 <1 0 current 0.2 7.1 18.4 current	58 <1 903 1002 997 1183 2861 history1 8 2 <1 history1 0.2 6.4 18.5 history1	66 <1 1034 1180 1107 1373 3995 history2 11 1 1 history2 0.3 7.5 19.2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7414	60 0 1010 1070 1150 1270 2060 limit/base >25 ////////////////////////////////////	61         0         999         1104         1060         1217         3588         current         7         <1         0         current         0.2         7.1         18.4         current         15.5	58 <1 903 1002 997 1183 2861 history1 8 2 2 <1 history1 0.2 6.4 18.5 history1 14.8	66 <1 1034 1180 1107 1373 3995 history2 11 1 1 history2 0.3 7.5 19.2 history2 15.6

Contact/Location: See also GFL904,A,B,C, 927, 938 - Andy Kane - GFL927 Page 1 of 2



6.0

0.0

Dct24

Base

# **OIL ANALYSIS REPORT**



Vov11/23

VISUAL		methou	iiiiii/base	current	Thistory I	Thistory 2
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
	DTIEO		1			
FLUID PROPE	RHES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.0	14.0
GRAPHS						





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\* - 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)

Certificate 12367

Contact/Location: See also GFL904,A,B,C, 927, 938 - Andy Kane - GFL927

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