

# **OIL ANALYSIS REPORT**

### Sample Rating Trend

# NORMAL



Machine Id
712032
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (--- 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

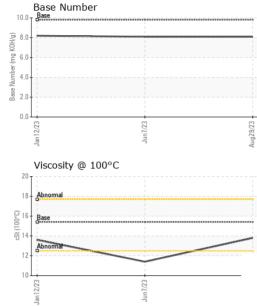
#### **Fluid Condition**

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		GFL0092741	GFL0080802	GFL0068270
Sample Date		Client Info		29 Aug 2023	07 Jun 2023	12 Jan 2023
Machine Age	hrs	Client Info		4409	3902	3009
Oil Age	hrs	Client Info		4409	0	600
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	ATTENTION	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	0.6	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	17	37	15
Chromium	ppm	ASTM D5185m	>5	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	5	2	3
Lead	ppm	ASTM D5185m	>30	0	0	<1
Copper	ppm	ASTM D5185m	>150	<1	2	<1
Tin	ppm	ASTM D5185m	>5	0	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
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ADDITIVES	lo lo tra	method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base			
ADDITIVES				current	history1	history2
ADDITIVES Boron	ppm	ASTM D5185m	0	current 5	history1	history2
ADDITIVES Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0	current 5 0	history1 11 0	history2 2 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 5 0 70	history1 11 0 77	history2 2 0 57
ADDITIVES  Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 5 0 70 <1	history1  11 0 77 <1	history2 2 0 57 <1
ADDITIVES  Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 5 0 70 <1 1041	history1  11  0  77  <1  1093	history2 2 0 57 <1 843
ADDITIVES  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	0 0 60 0 1010 1070	current  5  0  70  <1  1041  1137	history1  11  0  77  <1  1093  1378	history2 2 0 57 <1 843 1073 941 1160
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur	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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current  5  0  70  <1  1041  1137  1061	history1  11  0  77  <1  1093  1378  1171	history2 2 0 57 <1 843 1073 941
ADDITIVES  Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current  5 0 70 <1 1041 1137 1061 1309 3616 current	history1  11 0 77 <1 1093 1378 1171 1490 3882 history1	history2  2  0  57  <1  843  1073  941  1160  2867  history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current  5 0 70 <1 1041 1137 1061 1309 3616 current 4	history1  11 0 77 <1 1093 1378 1171 1490 3882 history1 4	history2  2  0  57  <1  843  1073  941  1160  2867  history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current  5 0 70 <1 1041 1137 1061 1309 3616  current 4 7	history1  11 0 77 <1 1093 1378 1171 1490 3882 history1 4	history2 2 0 57 <1 843 1073 941 1160 2867 history2 3 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current  5 0 70 <1 1041 1137 1061 1309 3616 current 4	history1  11 0 77 <1 1093 1378 1171 1490 3882 history1 4	history2  2  0  57  <1  843  1073  941  1160  2867  history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current  5 0 70 <1 1041 1137 1061 1309 3616  current 4 7	history1  11  0  77  <1 1093 1378 1171 1490 3882 history1  4 2 2 history1	history2 2 0 57 <1 843 1073 941 1160 2867 history2 3 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	current  5 0 70 <1 1041 1137 1061 1309 3616  current 4 7 2	history1  11 0 77 <1 1093 1378 1171 1490 3882 history1 4 2 2	history2  2  0  57  <1  843  1073  941  1160  2867  history2  3  4  5
ADDITIVES  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	0 0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >3	current  5 0 70 <1 1041 1137 1061 1309 3616 current 4 7 2 current	history1  11  0  77  <1 1093 1378 1171 1490 3882 history1  4 2 2 history1 0.4 7.6	history2 2 0 57 <1 843 1073 941 1160 2867 history2 3 4 5 history2 0.4 8.0
ADDITIVES 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  method  *ASTM D5185m  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >20 limit/base	current  5 0 70 <1 1041 1137 1061 1309 3616  current 4 7 2  current 0.4	history1  11  0  77  <1 1093 1378 1171 1490 3882 history1  4 2 2 history1 0.4	history2 2 0 57 <1 843 1073 941 1160 2867 history2 3 4 5 history2 0.4
ADDITIVES 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  Method ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >20 	current  5 0 70 <1 1041 1137 1061 1309 3616 current 4 7 2 current 0.4 7.6	history1  11  0  77  <1 1093 1378 1171 1490 3882 history1  4 2 2 history1 0.4 7.6	history2 2 0 57 <1 843 1073 941 1160 2867 history2 3 4 5 history2 0.4 8.0
ADDITIVES 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  Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >3	current  5 0 70 <1 1041 1137 1061 1309 3616 current  4 7 2 current 0.4 7.6 18.7	history1  11  0  77  <1 1093  1378  1171  1490  3882  history1  4  2  2  history1  0.4  7.6  19.7	history2 2 0 57 <1 843 1073 941 1160 2867 history2 3 4 5 history2 0.4 8.0 19.0



# **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
ELLIID DRODE	DTIES	method	limit/hase	current	history1	history2

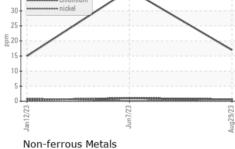
13.8

**11.4** 

13.6

Visc @ 100°C	
GRAPHS	

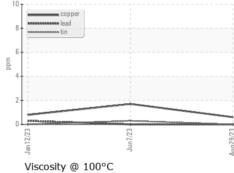
# Ferrous Alloys

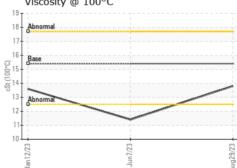


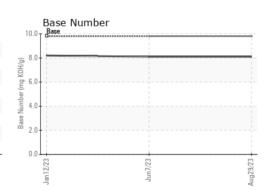
cSt

ASTM D445 15.4













Certificate L2367

Laboratory

Sample No. Lab Number Unique Number : 10631190 Test Package : FLEET

: GFL0092741 : 05940578

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 01 Sep 2023 Diagnosed : 02 Sep 2023 Diagnostician : Wes Davis

GFL Environmental - 455 - Flint

2051 W. Bristol Rd Flint Township, MI US 48507 Contact: MARK WOMBLE

mwomble@gflenv.com

T: (586)825-9514

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)