

### **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# Machine Id 923031-260313

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

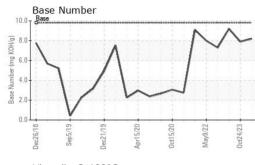
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

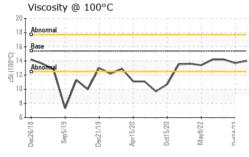
				,		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0099951	GFL0095090	GFL0083797
Sample Date		Client Info		15 Nov 2023	24 Oct 2023	15 Jun 2023
Machine Age	hrs	Client Info		5442	5415	5085
Oil Age	hrs	Client Info		1200	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
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	>110	6	10	10
Chromium	ppm		>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	1	10
Lead	ppm	ASTM D5185m	>45	0	0	0
Copper	ppm		>85	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	0	0
Vanadium	ppm	ASTM D5185m	~7	<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	le le		limit/baco			-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 5	history1 <1	history2 3
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 5 0	history1 <1 0	history2 3 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 5 0 60	history1 <1 0 57	history2 3 0 57
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current           5           0           60           <1	history1 <1 0 57 0	history2 3 0 57 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	Current 5 0 60 <1 961	history1 <1 0 57 0 902	history2 3 0 57 <1 984
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	Current 5 0 60 <1 961 1098	history1 <1 0 57 0 902 952	history2 3 0 57 <1 984 1081
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current 5 0 60 <1 961 1098 1072	history1 <1 0 57 0 902 952 944	history2 3 0 57 <1 984 1081 1035
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 0 1010 1070 1150 1270	Current 5 0 60 <1 961 1098 1072 1290	history1         <1         0         57         0         902         952         944         1236	history2 3 0 57 <1 984 1081 1035 1275
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current 5 0 60 <1 961 1098 1072 1290 3144	history1 <1 0 57 0 902 952 944 1236 2820	history2 3 0 57 <1 984 1081 1035 1275 3723
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current 5 0 60 <1 961 1098 1072 1290 3144 Current	history1 <1 0 57 0 902 952 944 1236 2820 history1	history2 3 0 57 <1 984 1081 1035 1275 3723 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current 5 0 60 <1 961 1098 1072 1290 3144 Current 4	<1         0         57         0         902         952         944         1236         2820         history1         5	history2           3           0           57           <1           984           1081           1035           1275           3723           history2           8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current           5           0           60           <1           961           1098           1072           1290           3144           current           4           17	<1         0         57         0         902         952         944         1236         2820         history1         5         14	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30	Current 5 0 60 <1 961 1098 1072 1290 3144 Current 4 17 2	<1         0         57         0         902         952         944         1236         2820         history1         5	history2           3           0           57           <1           984           1081           1035           1275           3723           history2           8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	Current 5 0 60 <1 961 1098 1072 1290 3144 Current 4 17 2	<1         0         57         0         902         952         944         1236         2820         history1         5         14         2         history1	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4         23         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30	Current 5 0 60 <1 961 1098 1072 1290 3144 Current 4 17 2	<1         0         57         0         902         952         944         1236         2820         history1         5         14         2         history1         0.3	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4         23
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	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >30 -20	Current 5 0 60 <1 961 1098 1072 1290 3144 Current 4 17 2 Current	<1         0         57         0         902         952         944         1236         2820         history1         5         14         2         history1	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4         23         history2         0.7         6.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 20 limit/base	Current         5         0         60         <1         961         1098         1072         1290         3144         current         4         17         2         current         0.2	<1         0         57         0         902         952         944         1236         2820         history1         5         14         2         history1         0.3	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4         23         history2         0.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 200 <i>limit/base</i> >3 >20	Current         5         0         60         <1         961         1098         1072         1290         3144         current         4         17         2         current         0.2         7.7         19.3	<1         0         57         0         902         952         944         1236         2820         history1         5         14         2         history1         0.3         7.9	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4         23         history2         0.7         6.9
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	method           ASTM D5185m           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>i</b> mit/base >30 220 <b>i</b> mit/base >3 >20 >30	Current         5         0         60         <1         961         1098         1072         1290         3144         current         4         17         2         current         0.2         7.7         19.3	<1         0         57         0         902         952         944         1236         2820         history1         5         14         2         history1         0.3         7.9         19.6	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4         23         history2         0.7         6.9         19.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAM	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7185M           *ASTM D7844           *ASTM D7415           method	0 0 0 1010 1070 1150 1270 2060 <b>i</b> mit/base >30 220 <b>i</b> mit/base >3 >20 >30	Current 5 0 60 <1 961 1098 1072 1290 3144 Current 4 17 2 Current 0.2 7.7 19.3 Current	<1         0         57         0         902         952         944         1236         2820         history1         5         14         2         history1         0.3         7.9         19.6         history1	history2         3         0         57         <1         984         1081         1035         1275         3723         history2         8         4         23         history2         0.7         6.9         19.7         history2

Contact/Location: See also GFL823, 834, 837, 840 - Robert Hart - GFL836

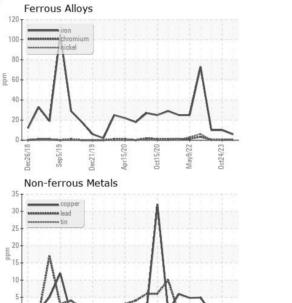


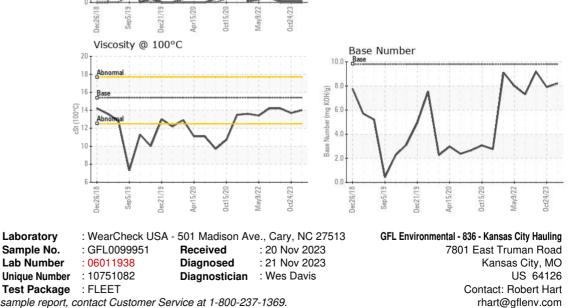
## **OIL ANALYSIS REPORT**





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	14.0	13.7	14.2
GRAPHS						





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)

Certificate L2367

Contact/Location: See also GFL823, 834, 837, 840 - Robert Hart - GFL836

F:

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