

### **OIL ANALYSIS REPORT**

# Sample Rating Trend FUEL FUEL

Machine Id 920092-260371 Component

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

#### DIAGNOSIS

#### Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

#### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

#### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0102497	GFL0102521	GFL0093691
Sample Date		Client Info		27 Dec 2023	04 Dec 2023	17 Oct 2023
Machine Age	hrs	Client Info		23322	23171	22901
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Change	Not Change
Sample Status				ABNORMAL	ABNORMAL	SEVERE
Sumple Status				ABROTINAL	//BINOTIUM/(E	OLVEILE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
	<u>_</u>	and the set	P 1. //		Interface and	la la tana 20
	3	method	limit/base	current	nistory i	nistory2
Iron	ppm	ASTM D5185m	>100	6	4	19
Chromium	ppm	ASTM D5185m	>20	<1	<1	3
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	1
Lead	ppm	ASTM D5185m	>40	0	1	0
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 0	history2 1
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0	current 2 0	history1 0 0	history2 1 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60	current 2 0 52	history1 0 0 55	history2 1 0 53
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0	current 2 0 52 <1	history1 0 0 55 0	history2 1 0 53 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010	current 2 0 52 <1 840	history1 0 0 55 0 874	history2 1 0 53 <1 835
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070	current 2 0 52 <1 840 932	history1 0 55 0 874 932	history2 1 0 53 <1 835 935
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150	current 2 0 52 <1 840 932 913	history1 0 55 0 874 932 799	history2 1 0 53 <1 835 935 884 4455
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270	current           2           0           52           <1           840           932           913           1115	history1 0 55 0 874 932 799 1138	history2 1 0 53 <1 835 935 884 1108
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060	current           2           0           52           <1           840           932           913           1115           2663	history1 0 55 0 874 932 799 1138 2864	history2 1 0 53 <1 835 935 884 1108 2564
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060	current           2           0           52           <1           840           932           913           1115           2663           current	history1 0 55 0 874 932 799 1138 2864 history1	history2 1 0 53 <1 835 935 884 1108 2564 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current           2           0           52           <1           840           932           913           1115           2663           current           2	history1           0           0           55           0           874           932           799           1138           2864           history1           3	history2         1         0         53         <1         835         935         884         1108         2564         history2         4
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	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current           2           0           52           <1           840           932           913           1115           2663           current           2           3	history1           0           0           55           0           874           932           799           1138           2864           history1           3           1	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method           ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current           2           0           52           <1           840           932           913           1115           2663           current           2           3           <1	history1         0         0         55         0         874         932         799         1138         2864         history1         3         1         <1	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         4         1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method           ASTM D5185m	limit/base 0 0 60 1010 1070 1150 1270 2060 limit/base >25 >20	current         2         0         52         <1         840         932         913         1115         2663         current         2         3         <1         ×         2         3         <1         ×         7.6	history1         0         0         55         0         874         932         799         1138         2864         history1         3         1         <1         5.6	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         4         1         1         1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5	current         2         0         52         <1         840         932         913         1115         2663         current         2         3         <1         ▲         7.6	history1         0         0         55         0         874         932         799         1138         2864         history1         3         1         <1         5.6	history2 1 0 53 <1 835 935 884 1108 2564 history2 4 4 1 1 ● 11.5 bictor 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >25 limit/base	current 2 0 52 <1 840 932 913 1115 2663 current 2 3 <1 ▲1 ▲1 ▲2 3 <1 ▲1	history1         0         55         0         874         932         799         1138         2864         history1         3         1         3         1         <1         <5.6	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         1         1         11.5         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >20 >5 limit/base >3	current         2         0         52         <1         840         932         913         1115         2663         current         2         3         <1         7.6         current         0.4	history1         0         0         55         0         874         932         799         1138         2864         history1         3         1         <1         <5.6         history1         0.2	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         1         1         1         1         0         0.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >3 >20	current         2         0         52         <1         840         932         913         1115         2663         current         2         3         <1         <7.6         current         0.4         7.0	history1         0         0         55         0         874         932         799         1138         2864         history1         3         1         <1         <5.6         history1         0.2         5.7	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         1         1         1         1         0         0.8         8.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >25 -20 >5 limit/base >3 >20 >30	current         2         0         52         <1         840         932         913         1115         2663         current         2         3         <1         2         3         <1            0.4         7.0         19.7	history1         0         55         0         874         932         799         1138         2864         history1         3         1         <1         5.6         history1         0.2         5.7         18.7	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         1         1         1         0         0.8         8.5         19.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 0 0 1010 1010 1070 1150 1270 2060 limit/base >20 >5 limit/base >3 >20 >30 limit/base	current         2         0         52         <1         840         932         913         1115         2663         current         2         3         <1         7.6         current         0.4         7.0         19.7         current	history1         0         55         0         874         932         799         1138         2864         history1         3         1         3         1         <5.6         history1         0.2         5.7         18.7	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         1         • 11.5         history2         0.8         8.5         19.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7844           *ASTM D7415           method           *ASTM D7414	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >20 S limit/base >3 >20 S limit/base >3 >20	current         2         0         52         <1         840         932         913         1115         2663         current         2         3         <1               0.4         7.0         19.7         current         15.6	history1         0         0         55         0         874         932         799         1138         2864         history1         3         1         <1         <5.6         history1         0.2         5.7         18.7         history1         14.6	history2         1         0         53         <1         835         935         884         1108         2564         history2         4         1         1         1         0.8         8.5         19.5         history2         15.7



## **OIL ANALYSIS REPORT**



Test Package : FLEET ( Additional Tests: PercentFuel )

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.



un19/73

Vov21/22 Mar1/22

history1

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

history

NEG

NEG

12.6

history2

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

history2

NEG

NEG

▲ 11.2

Certificate L2367

Dec4/23 Dec27/23