

## **OIL ANALYSIS REPORT**

Sample Rating Trend





#### 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 INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0078384	GFL0078392	GFL0078372
Sample Date		Client Info		11 Sep 2023	12 Jun 2023	28 Apr 2023
Machine Age	hrs	Client Info		7301	6677	6379
Oil Age	hrs	Client Info		624	298	722
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	14	14	7
Chromium	ppm	ASTM D5185m	>20	2	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	4	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	ASTM D5185m	limit/base 0	current 4	history1 <1	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	4	<1	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	<1 0	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 67	<1 0 60	2 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 67 <1	<1 0 60 <1	2 0 60 <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	4 0 67 <1 965	<1 0 60 <1 976	2 0 60 <1 889
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	4 0 67 <1 965 1122	<1 0 60 <1 976 1082	2 0 60 <1 889 1050
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	4 0 67 <1 965 1122 1030	<1 0 60 <1 976 1082 997	2 0 60 <1 889 1050 994
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	4 0 67 <1 965 1122 1030 1261	<1 0 60 <1 976 1082 997 1237	2 0 60 <1 889 1050 994 1230
Boron Barium 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	0 0 60 0 1010 1070 1150 1270 2060	4 0 67 <1 965 1122 1030 1261 3339	<1 0 60 <1 976 1082 997 1237 3483	2 0 60 <1 889 1050 994 1230 2935
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	4 0 67 <1 965 1122 1030 1261 3339 current	<1 0 60 <1 976 1082 997 1237 3483 history1	2 0 60 <1 889 1050 994 1230 2935 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	4 0 67 <1 965 1122 1030 1261 3339 current 8	<1 0 60 <1 976 1082 997 1237 3483 history1 3	2 0 60 <1 889 1050 994 1230 2935 history2 2
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	4 0 67 <1 965 1122 1030 1261 3339 current 8 5	<1 0 60 <1 976 1082 997 1237 3483 history1 3 5	2 0 60 <1 889 1050 994 1230 2935 history2 2 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	4 0 67 <1 965 1122 1030 1261 3339 current 8 5 5	<1 0 60 <1 976 1082 997 1237 3483 history1 3 5 4	2 0 60 <1 889 1050 994 1230 2935 history2 2 2 2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	4 0 67 <1 965 1122 1030 1261 3339 current 8 5 5 5	<1 0 60 <1 976 1082 997 1237 3483 history1 3 5 4 4 history1	2 0 60 <1 889 1050 994 1230 2935 history2 2 2 2 5 5 history2
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 >3	4 0 67 <1 965 1122 1030 1261 3339 current 8 5 5 5 5 current 0	<1 0 60 <1 976 1082 997 1237 3483 history1 3 5 4 history1 0.5	2 0 60 <1 889 1050 994 1230 2935 history2 2 2 2 5 history2 0.2
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	4 0 67 <1 965 1122 1030 1261 3339 current 8 5 5 5 current 0 8.8	<1 0 60 <1 976 1082 997 1237 3483 history1 3 5 4 5 4 history1 0.5 8.9	2 0 60 <1 889 1050 994 1230 2935 history2 2 2 2 2 2 5 history2 0.2 6.2
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 D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <b>imit/base</b> >3 20 20	4 0 67 <1 965 1122 1030 1261 3339 current 8 5 5 5 5 current 0 8.8 22.3	<1 0 60 <1 976 1082 997 1237 3483 history1 3 5 4 4 history1 0.5 8.9 20.4	2 0 60 <1 889 1050 994 1230 2935 history2 2 2 2 5 <u>history2</u> 0.2 6.2 16.9
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 D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	4 0 67 <1 965 1122 1030 1261 3339 current 8 5 5 5 current 0 8.8 22.3 current	<1 0 60 <1 976 1082 997 1237 3483 history1 3 5 4 5 4 history1 0.5 8.9 20.4 history1	2 0 60 <1 889 1050 994 1230 2935 history2 2 2 2 2 5 history2 0.2 6.2 16.9 history2

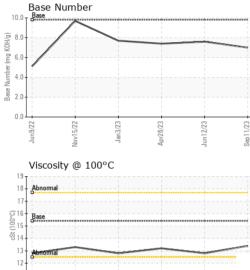


Jun9/22

Nov15/22

# **OIL ANALYSIS REPORT**

VISUAL



Jan3/23

Apr28/23

Laboratory Sample No. Lab Number Unique Number	: 05955749	501 Madi Received Diagnos Diagnos	d :198 ed :218	ry, NC 2751 Sep 2023 Sep 2023 s Davis	I3 GFL EI		94 - Ada Hauling oadway, Suite D Ada, OK US 74820
	Non-ferrous Meta Non-ferrous Meta CCGun Viscosity @ 100°C		Juni 223 Juni 223	Sep 11/23 K Sep 11/23 K Sep 11/23 K Sep 11/23 K Sep 11/23	Base Numbe	Jan 3/23	Juni 2/23
Jun1223	GRAPHS Ferrous Alloys						
	FLUID PROPE Visc @ 100°C	cSt	ASTM D445	limit/base 15.4	current 13.4	history1 12.8	history2 13.2
	Free Water	scalar	*Visual method	limit/baca	NEG	NEG	NEG
Ju	Odor Emulsified Water	scalar scalar	*Visual *Visual	NORML >0.2	NORML NEG	NORML NEG	NORML NEG
Jun 12/23 Sep 11/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE



Test Package : FLEET Certificate L2367 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)

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