

# **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL

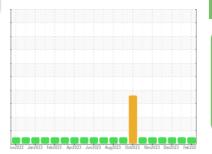


Area (61AC798) Machine Id 428039-402371

Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

SAMPLE INFORMATION method





## 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.

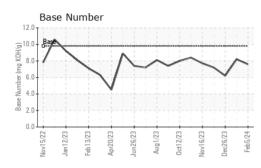
### Fluid Condition

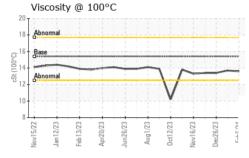
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMIFLE INFOR		methou	IIIIII/Dase	current	TIISTOLA	-
Sample Number		Client Info		GFL0100446	GFL0103473	GFL0103502
Sample Date		Client Info		05 Feb 2024	17 Jan 2024	26 Dec 2023
Machine Age	hrs	Client Info		14798	14666	14525
Oil Age	hrs	Client Info		273	141	1033
Oil Changed		Client Info		N/A	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL
-			11 1. 11			
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>120	3	3	7
Chromium	ppm	ASTM D5185m		<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm		>2	<1	0	<1
Aluminum	ppm	ASTM D5185m		1	<1	2
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm		>330	<1	<1	<1
Tin	ppm		>15	0	<1	<1
Vanadium	ppm	ASTM D5185m	210	0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
	ppin					-
ADDITIVES						
		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	4	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	4	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 57	4 0 62	4 0 64
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 57 0	4 0 62 <1	4 0 64 <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	2 0 57 0 790	4 0 62 <1 924	4 0 64 <1 954
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	2 0 57 0 790 918	4 0 62 <1 924 1064	4 0 64 <1 954 1006
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 ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 57 0 790 918 879	4 0 62 <1 924 1064 1011	4 0 64 <1 954 1006 1050
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	2 0 57 0 790 918 879 1036	4 0 62 <1 924 1064 1011 1224	4 0 64 <1 954 1006 1050 1291
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 ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 57 0 790 918 879	4 0 62 <1 924 1064 1011	4 0 64 <1 954 1006 1050
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	2 0 57 0 790 918 879 1036	4 0 62 <1 924 1064 1011 1224	4 0 64 <1 954 1006 1050 1291
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	2 0 57 0 790 918 879 1036 2628	4 0 62 <1 924 1064 1011 1224 2883	4 0 64 <1 954 1006 1050 1291 2912
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 57 0 790 918 879 1036 2628 current	4 0 62 <1 924 1064 1011 1224 2883 history1	4 0 64 <1 954 1006 1050 1291 2912 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 57 0 790 918 879 1036 2628 <u>current</u> 2	4 0 62 <1 924 1064 1011 1224 2883 history1 3	4 0 64 <1 954 1006 1050 1291 2912 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	2 0 57 0 790 918 879 1036 2628 <u>current</u> 2 2 <1	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	2 0 57 0 790 918 879 1036 2628 <u>current</u> 2 <1 3 <u>current</u>	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2 2 2 history1	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4 4 4 4 4 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	2 0 57 0 790 918 879 1036 2628 <i>current</i> 2 2 <1 3 <i>current</i> 0.2	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2 2 2 history1 0.1	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4 4 4 4 4 5 0.3
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 <b>TS</b>	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	2 0 57 0 790 918 879 1036 2628 <i>current</i> 2 2 <1 3 <i>current</i> 0.2 6.9	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2 2 2 history1 0.1 6.1	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4 4 4 4 5 0.3 8.7
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 25 20 220 20 20 20 20 20 20 20 20 20 20 20	2 0 57 0 790 918 879 1036 2628 <i>current</i> 2 2 <1 3 <i>current</i> 0.2 6.9 18.4	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2 2 2 <u>history1</u> 0.1 6.1 17.8	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4 4 4 4 5 6.3 8.7 19.7
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 ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	2 0 57 0 790 918 879 1036 2628 <i>current</i> 2 2 <1 3 <i>current</i> 0.2 6.9 18.4 <i>current</i>	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2 2 2 history1 0.1 6.1 17.8 history1	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4 4 4 4 0.3 8.7 19.7 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 25 20 220 20 20 20 20 20 20 20 20 20 20 20	2 0 57 0 790 918 879 1036 2628 <i>current</i> 2 2 <1 3 <i>current</i> 0.2 6.9 18.4	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2 2 history1 0.1 6.1 17.8 history1 14.0	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4 4 4 4 0.3 8.7 19.7 history2 16.2
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	2 0 57 0 790 918 879 1036 2628 <i>current</i> 2 2 <1 3 <i>current</i> 0.2 6.9 18.4 <i>current</i>	4 0 62 <1 924 1064 1011 1224 2883 history1 3 2 2 2 history1 0.1 6.1 17.8 history1	4 0 64 <1 954 1006 1050 1291 2912 history2 4 4 4 4 4 5 0.3 8.7 19.7 history2

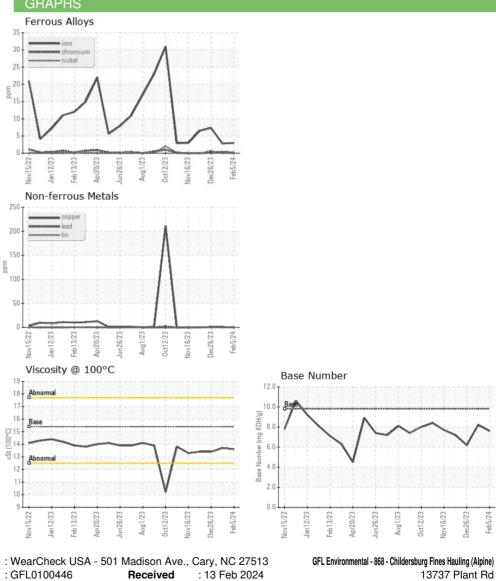


# **OIL ANALYSIS REPORT**





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	13.6	13.7	13.4
GRAPHS						



: 13 Feb 2024

: 13 Feb 2024 - Wes Davis



Test Package : FLEET Contact: JONATHAN WILLIAMS Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jonathan.williams@gflenv.com \* - 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)

Tested

Diagnosed

Laboratory

Sample No.

Lab Number : 06086889

Unique Number : 10874334

Feb5/24

Dec26/23

Childersburg, AL

US 35044

Т:

F: