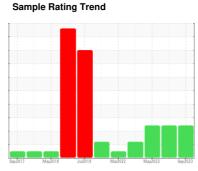


# **OIL ANALYSIS REPORT**



Machine Id **8137** Component **Diesel Engine** 

PETRO CANADA DURON SHP 10W30 (--- GAL)





## **DIAGNOSIS**

#### Recommendation

We advise that you check the fuel injection system. 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 high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

## Fluid Condition

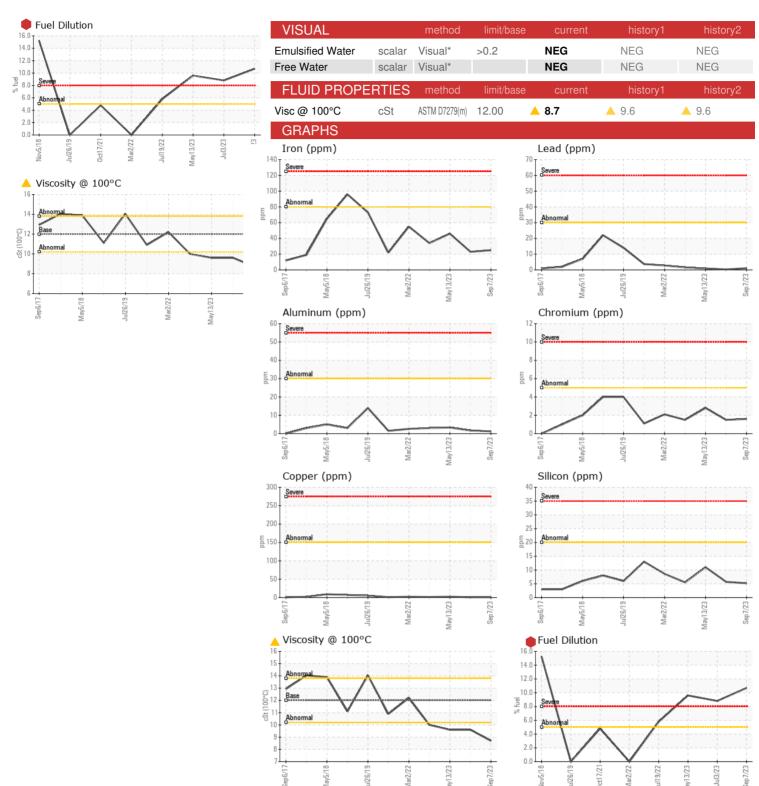
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

		Sep 2017	May2018 Jul2019	Mar2022 May2023	Sep2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090583	GFL0085922	GFL0077985
Sample Date		Client Info		07 Sep 2023	03 Jul 2023	13 May 2023
Machine Age	kms	Client Info		0	258577	17448
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	N/A
Sample Status				SEVERE	SEVERE	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>80	25	23	46
Chromium	ppm	ASTM D5185(m)	>5	2	2	3
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>30	1	2	3
Lead	ppm	ASTM D5185(m)	>30	1	<1	<1
Copper	ppm	ASTM D5185(m)	>150	1	1	2
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current	history1	history2
	ppm					
Boron Barium		ASTM D5185(m)	2	3	2	<1
Boron	ppm	ASTM D5185(m) ASTM D5185(m)	2	3 0	2	<1
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50	3 0 47	2 0 52	<1 0 52
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0	3 0 47 <1	2 0 52 <1	<1 0 52 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950	3 0 47 <1 758	2 0 52 <1 870	<1 0 52 <1 848
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050	3 0 47 <1 758 809	2 0 52 <1 870 909	<1 0 52 <1 848 956
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995	3 0 47 <1 758 809 808	2 0 52 <1 870 909 959	<1 0 52 <1 848 956 932
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995 1180	3 0 47 <1 758 809 808 928	2 0 52 <1 870 909 959 1068	<1 0 52 <1 848 956 932 1033
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995 1180	3 0 47 <1 758 809 808 928 1970	2 0 52 <1 870 909 959 1068 2302	<1 0 52 <1 848 956 932 1033 2190
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600	3 0 47 <1 758 809 808 928 1970	2 0 52 <1 870 909 959 1068 2302 <1	<1 0 52 <1 848 956 932 1033 2190 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600	3 0 47 <1 758 809 808 928 1970 <1	2 0 52 <1 870 909 959 1068 2302 <1 history1	<1 0 52 <1 848 956 932 1033 2190 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)  method ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600	3 0 47 <1 758 809 808 928 1970 <1 current	2 0 52 <1 870 909 959 1068 2302 <1 history1	<1 0 52 <1 848 956 932 1033 2190 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium  CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600	3 0 47 <1 758 809 808 928 1970 <1 current	2 0 52 <1 870 909 959 1068 2302 <1 history1 6	<1 0 52 <1 848 956 932 1033 2190 <1 history2 11 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium  CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600 limit/base >20	3 0 47 <1 758 809 808 928 1970 <1 current 5 4	2 0 52 <1 870 909 959 1068 2302 <1 history1 6 6	<1 0 52 <1 848 956 932 1033 2190 <1 history2 11 8 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600 limit/base >20 >5	3 0 47 <1 758 809 808 928 1970 <1 current 5 4 <1	2 0 52 <1 870 909 959 1068 2302 <1 history1 6 6 6 <1	<1 0 52 <1 848 956 932 1033 2190 <1 history2 11 8 2  9.6 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593*  method  ASTM D7844*	2 0 50 0 950 1050 995 1180 2600 limit/base >20 >5 limit/base	3 0 47 <1 758 809 808 928 1970 <1 current  5 4 <1 10.7 current	2 0 52 <1 870 909 959 1068 2302 <1 history1 6 6 6 <1  0.4	<1 0 52 <1 848 956 932 1033 2190 <1 history2 11 8 2  9.6 history2 0.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)  MASTM D5185(m)  MASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7844* ASTM D7624*	2 0 50 0 950 1050 995 1180 2600 limit/base >20 >5 limit/base >3 >20	3 0 47 <1 758 809 808 928 1970 <1  current  5 4 <1 10.7  current  0.6 10.3	2 0 52 <1 870 909 959 1068 2302 <1 history1 6 6 <1  8.8 history1 0.4 8.2	<1 0 52 <1 848 956 932 1033 2190 <1 history2 11 8 2  9.6 history2 0.7 10.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium  CONTAMINAN Silicon Sodium Potassium Fuel  INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593*  method  ASTM D7593*  ASTM D7844* ASTM D7624* ASTM D7624*	2 0 50 0 950 1050 995 1180 2600 limit/base >20 >5 limit/base >3 >20 >3	3 0 47 <1 758 809 808 928 1970 <1 current  5 4 <1 10.7 current  0.6 10.3 26.2	2 0 52 <1 870 909 959 1068 2302 <1 history1 6 6 6 <1 0.4 8.2 22.1	<1 0 52 <1 848 956 932 1033 2190 <1 history2 11 8 2  10 9.6 history2 0.7 10.1 23.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593*  method  ASTM D7593*  ASTM D7844* ASTM D7624* ASTM D7624*	2 0 50 0 950 1050 995 1180 2600 limit/base >20 >5 limit/base >3 >20	3 0 47 <1 758 809 808 928 1970 <1  current  5 4 <1 10.7  current  0.6 10.3	2 0 52 <1 870 909 959 1068 2302 <1 history1 6 6 <1  8.8 history1 0.4 8.2	<1 0 52 <1 848 956 932 1033 2190 <1 history2 11 8 2  9.6 history2 0.7 10.1

Submitted By: Brian Gagne



# **OIL ANALYSIS REPORT**





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number

: GFL0090583

: 02581116 : 5642181

Received : 08 Sep 2023 Diagnosed : 11 Sep 2023

Diagnostician : Kevin Marson Test Package : MOB 1 ( Additional Tests: PercentFuel )

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 554 - Edmonton SW 8409 -15th Street NW Edmonton, AB

CA T6P 0B8 Contact: Antonio De Rosa aderosa@gflenv.com T: (780)509-2640

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