

## **OIL ANALYSIS REPORT**

Machine Id 7824 Component

#### Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- LT

### DIAGNOSIS

#### A Recommendation

The oil change at the time of sampling has been noted. 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

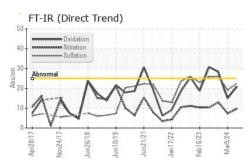
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

R)		pr2017 Nov2	017 Jun2018 Jun2019	) Jun2021 Jan2022 Feb2023	Mar2024	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0119009	GFL0102621	GFL0101741
Sample Date		Client Info		31 May 2024	09 Mar 2024	26 Dec 2023
/lachine Age	hrs	Client Info		24144	23698	0
Dil Age	hrs	Client Info		0	0	0
Dil Changed		Client Info		Changed	Changed	N/A
Sample Status				ABNORMAL	MARGINAL	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Vater		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
ron	ppm	ASTM D5185(m)	>110	15	11	37
Chromium	ppm	ASTM D5185(m)	>4	1	<1	3
lickel	ppm	ASTM D5185(m)	>2	0	0	<1
ītanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	<1	1	2
ead	ppm	ASTM D5185(m)	>45	0	0	<1
Copper	ppm	ASTM D5185(m)	>85	<1	<1	2
īn	ppm	ASTM D5185(m)	>4	0	0	<1
Antimony	ppm	ASTM D5185(m)		0	0	0
/anadium	ppm	ASTM D5185(m)		0	0	0
Beryllium				•		â
	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m) ASTM D5185(m)		0	0	0
,			limit/base	0		
Cadmium		ASTM D5185(m)	limit/base	0	0	0
Cadmium ADDITIVES	ppm	ASTM D5185(m)	2	0 current	0 history1	0 history2
ADDITIVES Boron	ppm ppm	ASTM D5185(m) method ASTM D5185(m)	2	0 current 2	0 history1 2	0 history2 2
Cadmium ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	2 0 50	0 current 2 0	0 history1 2 0	0 history2 2 0
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50	0 current 2 0 55	0 history1 2 0 59	0 history2 2 0 47
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0	0 current 2 0 55 <1	0 history1 2 0 59 0	0 history2 2 0 47 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950	0 current 2 0 55 <1 877	0 history1 2 0 59 0 948	0 history2 2 0 47 0 743
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050	0 current 2 0 55 <1 877 974	0 history1 2 0 59 0 948 1063	0 history2 2 0 47 0 743 822
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995	0 current 2 0 55 <1 877 974 939	0 history1 2 0 59 0 948 1063 959	0 history2 2 0 47 0 743 822 785
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995 1180	0 current 2 0 55 <1 877 974 939 1084	0 history1 2 0 59 0 948 1063 959 1156	0 history2 2 0 47 0 743 822 785 917
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995 1180	0 current 2 0 55 <1 877 974 939 1084 2238	0 history1 2 0 59 0 948 1063 959 1156 2437	0 history2 2 0 47 0 743 822 785 917 2024
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600	0 current 2 0 55 <1 877 974 939 1084 2238 <1	0 history1 2 0 59 0 948 1063 959 1156 2437 <1	0 history2 2 0 47 0 743 822 785 917 2024 <1
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Calcium Phosphorus Cinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600	0 current 2 0 55 <1 877 974 939 1084 2238 <1 current	0 history1 2 0 59 0 948 1063 959 1156 2437 <1 kistory1	0 history2 2 0 47 0 743 822 785 917 2024 <1 history2
ADDITIVES ADDITIVES 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) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600	0 current 2 0 55 <1 877 974 939 1084 2238 <1 current 4	0 history1 2 0 59 0 948 1063 959 1156 2437 <1 <1 history1 6	0 history2 2 0 47 0 743 822 785 917 2024 <1 2024 <1 history2 6
ADDITIVES ADDITIVES 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) method ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 limit/base >30	0 current 2 0 55 <1 877 974 939 1084 2238 <1 current 4 6	0 history1 2 0 59 0 948 1063 959 1156 2437 <1 2437 <1 history1 6 4	0 history2 2 0 47 0 743 822 785 917 2024 <1 2024 <1 kistory2 6 7
ADDITIVES ADDITIVES Boron Barium Aolybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 iimit/base >30	0 current 2 0 55 <1 877 974 939 1084 2238 <1 current 4 6 <1	0 history1 2 0 59 0 948 1063 959 1156 2437 <1 2437 <1 history1 6 4 <1	0 history2 2 0 47 0 743 822 785 917 2024 <1 2024 <1 2024 <1 history2 6 7 1
Cadmium ADDITIVES Boron Barium Aolybdenum Aanganese Aagnesium Calcium Phosphorus Cinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	2 0 50 950 1050 995 1180 2600 imit/base >30 >20 >5	0 current 2 0 55 <1 877 974 939 1084 2238 <1 current 4 6 <1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×	0 history1 2 0 59 0 948 1063 959 1156 2437 <1 6 4 <1 6 4 <1 ▲ 2.1	0 history2 2 0 47 0 743 822 785 917 2024 <1 2024 <1 kistory2 6 7 1 1 1 1 1 1 1 1 1
ADDITIVES ADDITIVES Boron Barium Aolybdenum Aanganese Aagnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Euel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	2 0 50 0 950 1050 995 1180 2600 2600 20 >30 >20 >20 >5 5	0 current 2 0 55 <1 877 974 939 1084 2238 <1 current 4 6 <1	0 history1 2 0 59 0 948 1063 959 1156 2437 <1 6 4 <1 6 4 <1 ▲ 2.1 history1	0 history2 2 0 47 0 743 822 785 917 2024 <1 2024 <1 ital 6 7 1 1 1 4.8 14.8

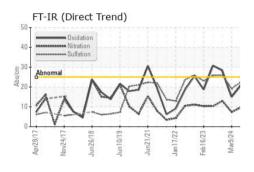
FUEL



# **OIL ANALYSIS REPORT**



Viscosity @ 100°C



FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	20.8	15.0	28.3
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	VLITE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	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		method	limit/base	current	history1	history2

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Visc @ 100°C

GRAPHS

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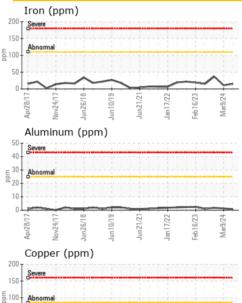
Apr.28/1

unr28/17

TN4CV

26/1

Viscosity @ 100°C



Jan 17/22

Jan 17/22

Feb 16/23

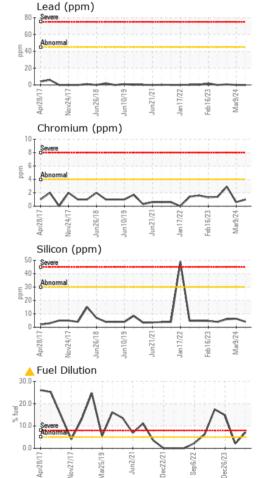
Feb16/23

Mar9/24

Mar9/24

cSt

ASTM D7279(m) 12.00



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Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 554 - Edmonton SW CALA : 05 Jun 2024 Sample No. : GFL0119009 Received 8409 -15th Street NW Lab Number : 02639776 Tested : 07 Jun 2024 Edmonton, AB ISO 17025:2017 Accredited Laboratory CA T6P 0B8 Unique Number : 5788938 Diagnosed : 07 Jun 2024 - Wes Davis Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, Visual) Contact: Tim Greig tgreig@gflenv.com 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. T: (780)231-0521 Validity of results and interpretation are based on the sample and information as supplied. E:

Report Id: GFL554 [WCAMIS] 02639776 (Generated: 06/07/2024 08:20:16) Rev: 1

Submitted By: Brian Gagne Page 2 of 2