

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

## 2223M

#### 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.

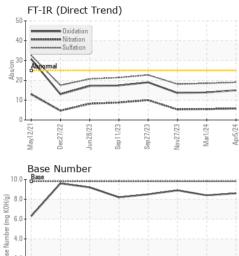
#### Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0097492	GFL0029666	GFL0092965
Sample Date		Client Info		05 Apr 2024	01 Mar 2024	27 Nov 2023
Machine Age	hrs	Client Info		28378	28378	28378
Oil Age	hrs	Client Info		28378	28378	28378
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>100	10	8	6
Chromium	ppm	ASTM D5185m	>20	0	0	0
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	2	<1	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	2	<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 Boron	ppm	method ASTM D5185m	limit/base 0	current 9	history1 8	history2 5
	ppm ppm					
Boron		ASTM D5185m	0	9	8	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	9 0	8 0	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	9 0 57	8 0 60	5 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	9 0 57 <1	8 0 60 0	5 0 58 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	9 0 57 <1 903	8 0 60 0 925	5 0 58 0 974
Boron Barium Molybdenum Manganese Magnesium Calcium	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	9 0 57 <1 903 1047	8 0 60 0 925 1075	5 0 58 0 974 1086
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	9 0 57 <1 903 1047 1045	8 0 60 0 925 1075 994	5 0 58 0 974 1086 1058
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	9 0 57 <1 903 1047 1045 1203	8 0 60 0 925 1075 994 1150	5 0 58 0 974 1086 1058 1260
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	9 0 57 <1 903 1047 1045 1203 3558	8 0 60 925 1075 994 1150 3064	5 0 58 0 974 1086 1058 1260 3169
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	9 0 57 <1 903 1047 1045 1203 3558 current	8 0 60 0 925 1075 994 1150 3064 history1	5 0 58 0 974 1086 1058 1260 3169 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 <b>method</b> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	9 0 57 <1 903 1047 1045 1203 3558 current 3	8 0 60 925 1075 994 1150 3064 history1 3	5 0 58 0 974 1086 1058 1260 3169 history2 3
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 <b>method</b> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	9 0 57 <1 903 1047 1045 1203 3558 current 3 4	8 0 60 925 1075 994 1150 3064 history1 3 4	5 0 58 0 974 1086 1058 1260 3169 history2 3 3 3
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 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	9 0 57 <1 903 1047 1045 1203 3558 current 3 4 4 <1	8 0 60 925 1075 994 1150 3064 history1 3 4 0	5 0 58 0 974 1086 1058 1260 3169 history2 3 3 3 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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 <u>limit/base</u> >3	9 0 57 <1 903 1047 1045 1203 3558 current 3 4 <1 current	8 0 60 925 1075 994 1150 3064 history1 3 4 0 bistory1	5 0 58 0 974 1086 1058 1260 3169 <b>history2</b> 3 3 0 <b>history2</b>
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 <u>limit/base</u> >3	9 0 57 <1 903 1047 1045 1203 3558 current 3 4 <1	8 0 60 925 1075 994 1150 3064 history1 3 4 0 history1 0.4	5 0 58 0 974 1086 1058 1260 3169 history2 3 3 0 history2 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	9 0 57 <1 903 1047 1045 1203 3558 <i>current</i> 3 4 <1 <i>current</i> 0.3 5.8	8 0 60 925 1075 994 1150 3064 history1 3 4 0 history1 0.4 5.5	5 0 58 0 974 1086 1058 1260 3169 history2 3 3 3 0 history2 0.3 5.3
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 20 225 20 20 320 33 20 20 20	9 0 57 <1 903 1047 1045 1203 3558 <u>current</u> 3 4 <1 <u>current</u> 0.3 5.8 19.0	8 0 60 925 1075 994 1150 3064 history1 3 4 0 history1 0.4 5.5 18.5	5 0 58 0 974 1086 1058 1260 3169 <b>history2</b> 3 3 0 <b>history2</b> 0.3 5.3 18.1

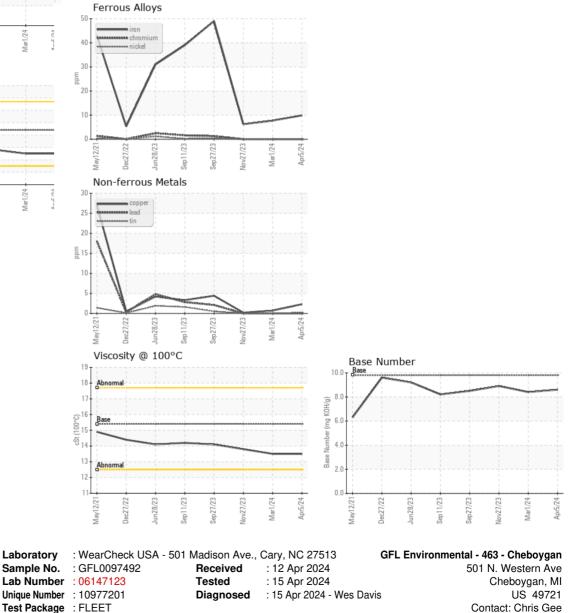


# **OIL ANALYSIS REPORT**



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May12/21	Dec27/22	Jun28/23	Sep11/23	Sep27/23	Nov27/23	Mar1/24	1 N	

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 PROPEI	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.5	13.8
GRAPHS						





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)

Report Id: GFL463 [WUSCAR] 06147123 (Generated: 04/15/2024 08:01:43) Rev: 1

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