

# **OIL ANALYSIS REPORT**

Sample Rating Trend



# Machine Id 1922296

#### Component Diesel Engine Fluid

PETRO CANADA DURON SHP 10W30 (--- 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.

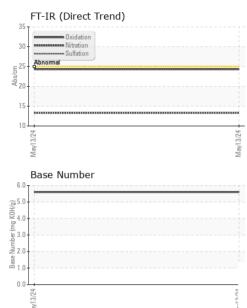
### Fluid Condition

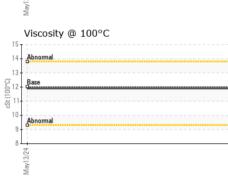
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0119230		
Sample Date		Client Info		13 May 2024		
Machine Age	mls	Client Info		0		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	52		
Chromium	ppm	ASTM D5185m	>20	1		
Nickel	ppm	ASTM D5185m	>4	<1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	7		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	16		
Tin	ppm	ASTM D5185m	>15	2		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 30	history1	history2
	ppm ppm					
Boron		ASTM D5185m	2	30		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	30 4		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	30 4 53 7 811		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	30 4 53 7 811 1198		
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	2 0 50 0 950 1050 995	30 4 53 7 811 1198 650		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	30 4 53 7 811 1198 650 906	    	
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	2 0 50 0 950 1050 995	30 4 53 7 811 1198 650	   	
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	2 0 50 0 950 1050 995 1180	30 4 53 7 811 1198 650 906	    	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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>	2 0 50 0 950 1050 995 1180 2600	30 4 53 7 811 1198 650 906 2493 current 18		
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 ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	30 4 53 7 811 1198 650 906 2493 current 18 6	     history1	     history2
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	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 >20	30 4 53 7 811 1198 650 906 2493 current 18	     history1  	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20	30 4 53 7 811 1198 650 906 2493 current 18 6 11 11 current	     history1	     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	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3	30 4 53 7 811 1198 650 906 2493 <b>current</b> 18 6 11 18 6 11 0.6	     history1  history1  history1	     history2   history2
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	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i>	30 4 53 7 811 1198 650 906 2493 <i>current</i> 18 6 11 18 6 11 <i>current</i> 0.6 13.3	     history1   history1  	     history2   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	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3	30 4 53 7 811 1198 650 906 2493 <b>current</b> 18 6 11 18 6 11 0.6	     history1  history1  history1	     history2   history2
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	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i>	30 4 53 7 811 1198 650 906 2493 <i>current</i> 18 6 11 18 6 11 <i>current</i> 0.6 13.3	     history1   history1  	     history2   history2
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	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 20 <b>imit/base</b> >3 >20 >30	30 4 53 7 811 1198 650 906 2493 <u>current</u> 18 6 11 <u>current</u> 0.6 13.3 24.3	     history1  history1  history1	    history2  history2  history2



# **OIL ANALYSIS REPORT**





VISUAL		method				history2		
White Metal	scalar	*Visual	NONE	NONE				
Yellow Metal	scalar	*Visual	NONE	NONE				
Precipitate	scalar	*Visual	NONE	NONE				
Silt	scalar	*Visual	NONE	NONE				
Debris	scalar	*Visual	NONE	NONE				
Sand/Dirt	scalar	*Visual	NONE	NONE				
Appearance	scalar	*Visual	NORML	NORML				
Odor	scalar	*Visual	NORML	NORML				
Emulsified Water	scalar	*Visual	>0.2	NEG				
Free Water	scalar	*Visual		NEG				
FLUID PROPE	RTIES	method	limit/base	current	history1	history2		
Visc @ 100°C	cSt	ASTM D445	12.00	11.9				
GRAPHS								
Iron (ppm)				Lead (ppm)				
<sup>250</sup> T			100	T.				
200 - Severe			80	Severe				
a 150 - Abnormal			60 Ed 40	Abnormal				
			40	Ē	******			
50-			20					
54 24			24			24		
May13/24			May13/24	May13/24		May13/24		
≥ Aluminum (ppm)			2	≥ Chromium (p	nm)	2		
<sup>50</sup> T			50					
40 - Severe			40	Severe				
20 - Abnormal			ية <sup>30</sup> 20					
abnormal			<sup>2</sup> 20	Abnormal		-		
10-			10	-				
0			24			24		
May13/24			May13/24	May13/24		May13/24		
≥ Copper (ppm)			2	≥ Silicon (ppm)		2		
400 T Severe			80					
300			60					
틆 200 -			튼.40					
				Abnormal				
100-			20	1				
0			24 d			24 +		
May13/24			May13/24	May13/24		May13/24		
≥ Viscosity @ 100°C								
16			6.0 £5.0	[		1		
14 Abnormal			9 9 4.0					
(3-00) 12- 53			<u>ل</u> ے 3.0					
<sup>2</sup> 3 10 Abnormal			(D)HOX HOX bm) to 3.0 source 2.0 seg					
8			× 1.0					
			May13/24 -			May13/24		
May13/24			Mayl	May13/24		May1		
: WearCheck USA - 501 : PCA0119230 : 06188502 : 11045254	l Madiso Recei Teste Diagn	ved : 22 d : 24	r, NC 27513 2 May 2024 4 May 2024 May 2024 - Se			LEASING #129 LINDEN AVE E RSEY CITY, NJ US 07305		

- Unique Number : 11045254 Diagno Test Package : MOB 1 (Additional Tests: TBN)
- 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)

Certificate 12367

Laboratory Sample No. Lab Number

> Contact/Location: BILL CUCCIA - MILJER Page 2 of 2

Contact: BILL CUCCIA

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