

## **OIL ANALYSIS REPORT**



#### Machine Id **130185** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 10W30 (--- GAL)**

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

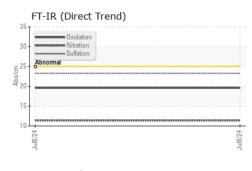
#### Fluid Condition

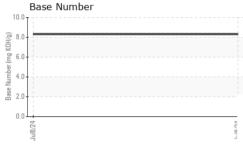
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

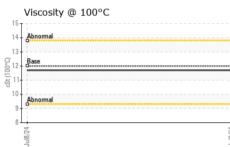
AAL)						
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0128947		
Sample Date		Client Info		08 Jul 2024		
Machine Age	mls	Client Info		46571		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	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	57		
Chromium	ppm	ASTM D5185m	>20	1		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	2		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	41		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	current 2	history1	history2
	ppm ppm					
Boron		ASTM D5185m	2	2		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	2 0		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	2 0 66		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	2 0 66 <1		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	2 0 66 <1 1053		
Boron Barium Molybdenum	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	2 0 66 <1 1053 1227		
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	2 0 66 <1 1053 1227 1084	   	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	2 0 66 <1 1053 1227 1084 1335		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	2 0 50 0 950 1050 995 1180 2600	2 0 66 <1 1053 1227 1084 1335 3259		
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	2 0 50 950 1050 995 1180 2600	2 0 66 <1 1053 1227 1084 1335 3259 current	     history1	     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>	2 0 50 950 1050 995 1180 2600 limit/base >25	2 0 66 <1 1053 1227 1084 1335 3259 current 7	    history1	     history2 
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	2 0 50 950 1050 995 1180 2600 limit/base >25	2 0 66 <1 1053 1227 1084 1335 3259 current 7 4	     history1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	2 0 66 <1 1053 1227 1084 1335 3259 current 7 4 0	    history1  	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ypm ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 -20 <b>limit/base</b>	2 0 66 <1 1053 1227 1084 1335 3259 current 7 4 0 0	     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 ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	2 0 66 <1 1053 1227 1084 1335 3259 current 7 4 0 current 1.2	     history1   history1  history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	2 0 66 <1 1053 1227 1084 1335 3259 current 7 4 0 current 1.2 11.4	     history1   history1   history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	2 0 0 50 0 950 1050 995 1180 2600 2600 255 220 220 220 20 20 330 20 330	2 0 66 <1 1053 1227 1084 1335 3259 current 7 4 0 current 1.2 11.4 23.3	     history1  history1  history1	      history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TTS</b> ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	2 0 0 50 0 950 1050 995 1180 2600 2600 255 220 220 220 20 20 330 20 330	2 0 66 <1 1053 1227 1084 1335 3259 current 7 4 0 current 1.2 11.4 23.3 current	     history1  history1  history1  history1	history2 history2 history2 history2 history2



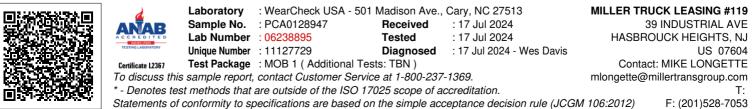
# **OIL ANALYSIS REPORT**







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	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	11.7		
GRAPHS						
Iron (ppm)			100	Lead (ppm)		
Severe			80	Severe		
50 - Abnormal			E 40	Abaranal		
50			20			
0						
Jul8/24-			Jul8/24 -	Jul8/24		
			Γ			-
Aluminum (ppm)			50	Chromium (p	pm)	
40 - Severe			40	Severe		
30 -						
20 - Abnormal			<sup>30</sup> 20	Abnormal		
10-			10			
			<b></b> (			
Jul8/24			Jul8/24	Jul8/24		0
Copper (ppm)				Silicon (ppm)		
00			80	Severe		
Severe Publiconnal			60			
00			틆 40			
				Abnormal		
00			20			
0						
Jul8/24			Jul8/24	Jul8/24		9 2 2
Viscosity @ 100°C				Base Number	-	
16						
14 Abnormal			HO 8.0			
12 - Base			Ē 6.0			
10 - Abnormal			(b)HO3 8.0 (b)HO3 (b)HO3 (b) (b)HO3 (b)HO3 (b) (b)HO3 (b)HO3 (b)HO3 (b) (b)HO3 (b)HO3 (b)HO3 (b)HO3 (b)HO3 (b) (b)HO3 (b)HO3 (b)			
8			2.0 			
Jul8/24			Jul8/24	Jul8/24		5 5 7
Inf			1n	Jul		-



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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