

## **OIL ANALYSIS REPORT**

DEGRADATION

### Machine Id D2-3691

Component Diesel Engine

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

#### DIAGNOSIS

#### Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

#### Wear

Fluid

All component wear rates are normal.

#### Contamination

There is an abnormal amount of solids and carbon present in the oil.

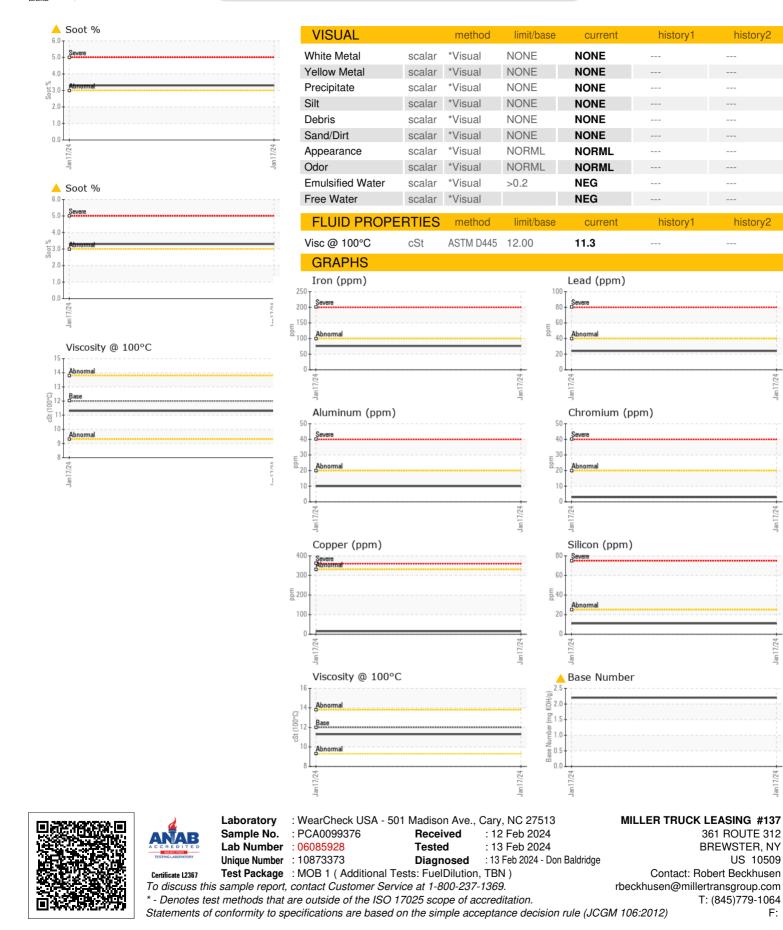
#### Fluid Condition

The BN level is low. The condition of the oil is acceptable for the time in service.

				Jan2024		
SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0099376		
Sample Date		Client Info		17 Jan 2024		
Machine Age	mls	Client Info		149124		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				ABNORMAL		
CONTAMINATI	ON	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS	6	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	76		
Chromium	ppm	ASTM D5185m	>20	3		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	10		
Lead	ppm	ASTM D5185m	>40	24		
Copper	ppm		>330	15		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m	210	0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	11		
Barium	ppm	ASTM D5185m	0	0		
Molybdenum	ppm	ASTM D5185m	50	78		
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Manganese				2		
-	ppm	ASTM D5185m	0	2		
Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	0 950	763		
Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050	763 1263		
Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995	763 1263 773		
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180	763 1263 773 926		  
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600	763 1263 773 926 2160		   
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base	763 1263 773 926 2160 current		  
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm <b>FS</b>	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 950 1050 995 1180 2600	763 1263 773 926 2160 current 11		
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25	763 1263 773 926 2160 current 11 9	   history1 	    history2 
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25 >20	763 1263 773 926 2160 current 11 9 18	   history1 	   history2  
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25	763 1263 773 926 2160 current 11 9	   history1 	    history2 
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED	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 ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25 >20	763 1263 773 926 2160 current 11 9 18 <1.0 current	   history1 	   history2  
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D51854	0 950 1050 995 1180 2600 limit/base >25 >20 >5	763 1263 773 926 2160 current 11 9 18 <1.0 current 23.3	   history1  	   history2  
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot %	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 ASTM D5185m ASTM D5185m	0 950 1050 995 1180 2600 limit/base >25 >20 >5	763 1263 773 926 2160 current 11 9 18 <1.0 current 28 3.3 16.7	  history1    history1	    history2    history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D51854	0 950 1050 995 1180 2600 limit/base >25 >20 >5 limit/base >3	763 1263 773 926 2160 current 11 9 18 <1.0 current 23.3	   history1    history1 	   history2    history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	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 ASTM D5185m ASTM D3524 *ASTM D7844 *ASTM D7624	0 950 1050 995 1180 2600 limit/base >25 >20 >5 limit/base >3 >20	763 1263 773 926 2160 current 11 9 18 <1.0 current 28 3.3 16.7	   history1    history1  history1	    history2    history2
Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	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 ASTM D5185m ASTM D3524 *ASTM D7844 *ASTM D7624	0 950 1050 995 1180 2600 <b>limit/base</b> >25 <b>limit/base</b> >3 >20 >3 >20	763 1263 773 926 2160 current 11 9 18 <1.0 current ▲ 3.3 16.7 32.3	  history1    history1  history1	<ul> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> <li></li> <li></li></ul>



# **OIL ANALYSIS REPORT**



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history2

history2