

### **OIL ANALYSIS REPORT**







Machine Id **1924259** Component

# Diesel Engine

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

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.

		method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0111368		
Sample Date		Client Info		21 Dec 2023		
Machine Age	mls	Client Info		87514		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
			12			
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	maa	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	3		
Lead	ppm	ASTM D5185m	>40	0		
Copper	mag	ASTM D5185m	>330	1		
Tin	ppm	ASTM D5185m	>15	0		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
		mathad	limit/booo	ourropt	biotorud	biotory 0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	current 18	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 2 0	current 18 0	history1 	history2 
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50	current 18 0 58	history1  	history2  
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0	current 18 0 58 0	history1   	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950	current 18 0 58 0 816	history1	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050	current           18           0           58           0           816           1133	history1	history2     
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050 995	current 18 0 58 0 816 1133 904	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180	current           18           0           58           0           816           1133           904           1155	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 50 0 950 1050 995 1180 2600	current           18           0           58           0           816           1133           904           1155           2986	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180 2600	current 18 0 58 0 816 1133 904 1155 2986 current	history1 history1	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 2 0 5 0 0 95 0 105 0 995 118 0 260 0 limit/base >25	current           18           0           58           0           816           1133           904           1155           2986           current           3	history1 history1	history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method           ASTM D5185m	limit/base 2 0 5 0 0 95 0 105 0 995 118 0 260 0 limit/base >25	current           18           0           58           0           816           1133           904           1155           2986           current           3           1	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180 2600 2600 kimit/base >25	current           18           0           58           0           816           1133           904           1155           2986           current           3           1           2	history1                                 history1   <	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm	method           ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	current         18         0         58         0         816         1133         904         1155         2986         current         3         1         2         current	history1                           history1	history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	method           ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	current         18         0         58         0         816         1133         904         1155         2986         current         3         1         2         current         0.4	history1                              history1                     history1   history1	history2 history2 history2 history2 history2
ADDITIVES 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	method           ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180 2600 limit/base >25 limit/base >3 >20	current         18         0         58         0         816         1133         904         1155         2986         current         3         1         2         current         0.4         9.0	history1                        history1  history1	history2 history2 history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm spm ppm spm	method           ASTM D5185m           ASTM D7624           *ASTM D7624	limit/base 2 0 50 0 950 1050 995 1180 2600 limit/base >20 limit/base >3 >20 >30	current         18         0         58         0         816         1133         904         1155         2986         current         3         1         2         current         0.4         9.0         18.9	history1                              history1            history1            history1            history1	history2
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	limit/base       2       0       50       0       950       1050       995       1180       2600       limit/base       >20       limit/base       >20       3       >20       s30       limit/base	current           18           0           58           0           816           1133           904           1155           2986           current           3           1           2           current           0.4           9.0           18.9           current	history1   history1               history1  history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415 method *ASTM D7414 *ASTM D7414	limit/base   2   0   50   0   950   1050   995   1180   2600   limit/base   >20   >30   limit/base   >20   >30   limit/base   >25	current         18         0         58         0         816         1133         904         1155         2986         current         3         1         2         current         0.4         9.0         18.9         current         15.6	history1   history1                  history1            history1            history1                        history1 <tr td=""> </tr>	history2



## **OIL ANALYSIS REPORT**







Certificate L2367