

## **OIL ANALYSIS REPORT**



Machine Id

# 6R2619

## Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- GAL)

### DIAGNOSIS

#### A Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

#### 🔺 Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

#### Contamination

Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. No other contaminants were detected in the oil.

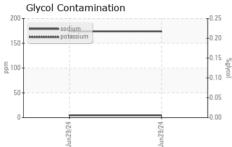
#### Fluid Condition

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.

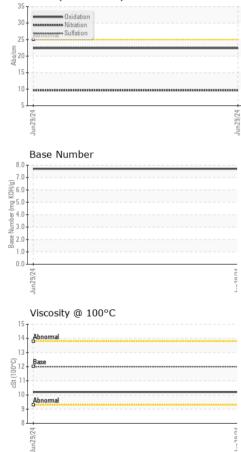
SAMPLE INFORI		method	limit/base	ourroat	biotonut	history 0
			-infit/base	current	history1	history2
Sample Number		Client Info		PCA0128872		
Sample Date		Client Info		29 Jun 2024		
Machine Age	mls	Client Info		24557		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		Not Changd		
Sample Status				ABNORMAL		
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	73		
Chromium	ppm	ASTM D5185m	>20	4		
Nickel	ppm	ASTM D5185m	>4	2		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	71		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	<u> </u>		
Tin	ppm	ASTM D5185m	>15	11		
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		history1	history2
	ppm ppm			current		
Boron		ASTM D5185m	2	current 33		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	current 33 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 33 0 52		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 33 0 52 5		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 33 0 52 5 520		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current           33           0           52           5           520           1715	  	  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current           33           0           52           5           520           1715           882	  	
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 50 950 1050 995 1180	current           33           0           52           5           520           1715           882           936	   	    
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	2 0 50 0 950 1050 995 1180 2600	current           33           0           52           5           520           1715           882           936           2318		
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	2 0 50 950 1050 995 1180 2600	current         33         0         52         5         520         1715         882         936         2318         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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	current         33         0         52         5         520         1715         882         936         2318         current         8	     history1	      history2
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	current         33         0         52         5         520         1715         882         936         2318         current         8         4	      history1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	current         33         0         52         5         520         1715         882         936         2318         current         8         4         174         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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 >20 Imit/base >3	current         33         0         52         5         520         1715         882         936         2318         current         8         4         174         current         0.5	     history1   history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	current         33         0         52         5         520         1715         882         936         2318         current         8         4         174         current	     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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>i</b> mit/base >25 20 <b>i</b> mit/base >3 >20 >3	current         33         0         52         5         520         1715         882         936         2318         current         8         4         174         current         0.5         9.6         22.7	      history1  history1  history1	      history2  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 D7844 *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3 >20 >30	current         33         0         52         5         520         1715         882         936         2318         current         8         4         174         current         0.5         9.6         22.7         current	      history1   history1  history1   history1	      history2   history2  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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>i</b> mit/base >25 20 <b>i</b> mit/base >3 >20 >3	current         33         0         52         5         520         1715         882         936         2318         current         8         4         174         current         0.5         9.6         22.7	      history1  history1  history1	     history2  history2  history2











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/hite Metal ellow Metal recipitate ilt ebris and/Dirt ppearance dor mulsified Water ree Water	scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NONE NORE		NONE NONE NONE NONE NONE NONE		
recipitate ilt ebris and/Dirt ppearance dor mulsified Water	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE		NONE NONE NONE NONE		
ilt ebris and/Dirt ppearance dor mulsified Water	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NONE NONE		NONE NONE NONE		
ebris and/Dirt ppearance dor mulsified Water	scalar scalar scalar scalar	*Visual *Visual *Visual	NONE NONE		NONE NONE		
and/Dirt ppearance dor mulsified Water	scalar scalar scalar	*Visual *Visual	NONE		NONE		
ppearance dor mulsified Water	scalar scalar	*Visual					
dor mulsified Water	scalar		NORML		NODMI		
mulsified Water		*Visual			-		
			NORML		NORML		
ree Water	scalar	*Visual	>0.2		NEG		
	scalar	*Visual			NEG		
FLUID PROPE	RTIES	method	limit/base		current	history1	history2
isc @ 100°C	cSt	ASTM D445	12.00		10.2		
GRAPHS							
Iron (ppm)					Lead (ppm)		
Severe					Severe		
				° T			
Abnormal			Ľ		Abnormal		
0				101	0		
9/24 -				~	9/24		
Jun2			Jun2	5	Zunc		
Aluminum (ppm)				(	Chromium (pj	pm)	
					Severe		
1				40 - 1			
Severe			E E	30 -	Abnormal		
Abnormal							
				0			
9/24 +			9/24	10	9/24		
Jun2			Jun2	6	Zun		
Copper (ppm)				5	Silicon (ppm)		
Severe Abnormal			3	<sup>80</sup> T	Severe		
				60 -	1		
			E.	40 -			
				20	Abnormal		
			4				
1/24 +			3/24	U L	3/24		
Jun29			Jun 29	061	Junza		
Viscosity @ 100°C			-				
			(B	<sup>3.0</sup> T			
Abnormal			F KOH	6.0			
Base			бш) ла 4	1.0			
			quint 2				
Abnormai D			Base				
9/24 +				0.0	9/24 -		
un2!			Jun26	061	2un7		
	GRAPHS Iron (ppm) Severe Abnormal Aluminum (ppm) Gevere Abnormal Viscosity @ 100°C Abnormal	GRAPHS Iron (ppm) Severe Abnormal Aluminum (ppm) Severe Abnormal Viscosity @ 100°C Abnormal Base	GRAPHS Iron (ppm) Severe Abnormal Aluminum (ppm) Severe Abnormal Viscosity @ 100°C Abnormal Base	GRAPHS         Iron (ppm)         Servere         Abnormal         Abnormal         Base         Abnormal         Viscosity @ 100°C         Abnormal         Base         Abnormal	GRAPHS Iron (ppm) Severe Abnormal Abnor	CRAPHS tron (ppm) tron (ppm)	GRAPHS         Iron (ppm)         Seven         Anormal         Base Number         Other State         Anormal         Base Number

Contact/Location: MIKE LONGETTE - MILRUT