

OIL ANALYSIS REPORT



Machine Id **724570** 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

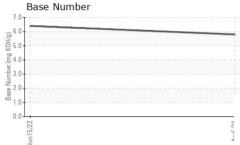
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

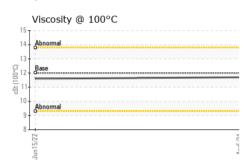
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0121429	PCA0073239	
Sample Date		Client Info		05 Apr 2024	15 Jun 2022	
Machine Age	mls	Client Info		310894	158777	
Oil Age	mls	Client Info		310894	63000	
Oil Changed		Client Info		Not Changd	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>100	82	86	
Chromium	ppm		>20	2	3	
Nickel	ppm ppm	ASTM D5185m	>20	0	<1	
Titanium	ppm	ASTM D5185m	~	17	2	
Silver	ppm	ASTM D5185m	>3	0	<1	
Aluminum	ppm		>20	9	18	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m		17	54	
Tin	ppm	ASTM D5185m	>15	1	3	
Vanadium	ppm	ASTM D5185m	210	0	0	
Cadmium	ppm	ASTM D5185m		0	0	
Cadmidin	ppm	AOTIM DOTOSIII		0	0	
		mathad	limit/bass	ourropt	biotomut	biotory 0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	15	7	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	15 0	7 5	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	15 0 61	7 5 59	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	15 0 61 1	7 5 59 1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	15 0 61 1 943	7 5 59 1 716	
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	15 0 61 1 943 1388	7 5 59 1 716 1499	
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	15 0 61 1 943 1388 1149	7 5 59 1 716 1499 933	
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 50 950 1050 995 1180	15 0 61 1 943 1388 1149 1357	7 5 59 1 716 1499 933 1202	
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	15 0 61 1 943 1388 1149	7 5 59 1 716 1499 933 1202 2831	
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	15 0 61 1 943 1388 1149 1357	7 5 59 1 716 1499 933 1202	
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	15 0 61 1 943 1388 1149 1357 3283	7 5 59 1 716 1499 933 1202 2831 history1 6	
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	15 0 61 1 943 1388 1149 1357 3283 current	7 5 59 1 716 1499 933 1202 2831 history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 method	2 0 50 950 1050 995 1180 2600	15 0 61 1 943 1388 1149 1357 3283 current 8	7 5 59 1 716 1499 933 1202 2831 history1 6	 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 limit/base	15 0 61 1 943 1388 1149 1357 3283 current 8 5	7 5 59 1 716 1499 933 1202 2831 history1 6 2	 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 limit/base >25	15 0 61 1 943 1388 1149 1357 3283 current 8 5 8	7 5 59 1 716 1499 933 1202 2831 history1 6 2 36	 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	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 >20	15 0 61 1 943 1388 1149 1357 3283 current 8 5 8 5 8	7 5 59 1 716 1499 933 1202 2831 history1 6 2 36 36 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 TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	15 0 61 1 943 1388 1149 1357 3283 current 8 5 8 5 8 5 8 5 8 2 1.5	7 5 59 1 716 1499 933 1202 2831 history1 6 2 36 2 36 history1 1.5	 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> >3 >20	15 0 61 1 943 1388 1149 1357 3283 <i>current</i> 8 5 8 <i>current</i> 1.5 12.2	7 5 59 1 716 1499 933 1202 2831 history1 6 2 36 2 36 history1 1.5 13.6	 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 imit/base >25 imit/base >3 >20	15 0 61 1 943 1388 1149 1357 3283 current 8 5 8 5 8 current 1.5 12.2 26.0	7 5 59 1 716 1499 933 1202 2831 history1 6 2 36 2 36 history1 1.5 13.6 26.6	 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 D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 20 >20 >30 >30 imit/base	15 0 61 1 943 1388 1149 1357 3283 <i>current</i> 8 5 8 <i>current</i> 1.5 12.2 26.0	7 5 59 1 716 1499 933 1202 2831 history1 6 2 36 history1 1.5 13.6 26.6 history1	 history2 history2 history2 history2



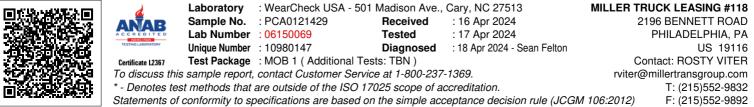
OIL ANALYSIS REPORT







		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.7	11.6	
GRAPHS						
Iron (ppm)			100	Lead (ppm)		
Severe			80	Severe		
).			60			
Abnormal			40	Abnormal		
)-			20			
) L			0			
Jun 15/22			Apr5/24	Jun 15/22		
⊰ Aluminum (ppm)			4	⊰ Chromium (p	nm)	
Severe			50	Severe	pin)	
] + @			40			
Abnormal			³⁰ ع	Abnormal		
)-			10			
			0	15/22		
Jun 15/22			Apr5/24	Jun 15		
Copper (ppm)				Silicon (ppm)		
Severe			80	Severe		
			60			
,			틆 40			
				Abnormal		
)			20			
			0	12		
Jun 15/22			Apr5/24	Jun 15/22		
⊰ Viscosity @ 100°C				⊰ Base Number		
инана, <u>с</u>			8.0 B			
Abnormal			(0)HOX 6.0 Build a 4.0 W a 4.0 W a 2.0			
Base			<u>لة</u> 10 4.0			
2			Man 2.0	1		
Abnormal			Bas			
			Apr5/24	Jun15/22		



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