

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id **121356** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 10W30 (--- QTS)** 

### 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.

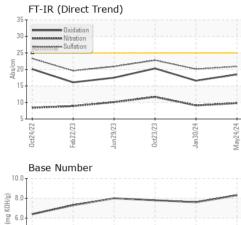
#### Fluid Condition

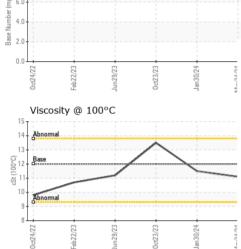
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info		PCA0127018	PCA0117053	PCA0110434			
Sample Date		Client Info		24 May 2024	30 Jan 2024	23 Oct 2023			
Machine Age	mls	Client Info		24981	20860	17330			
Oil Age	mls	Client Info		0	0	0			
Oil Changed		Client Info		Changed	N/A	Changed			
Sample Status				NORMAL	NORMAL	NORMAL			
CONTAMINAT	ION	method	limit/base	current	history1	history2			
Fuel		WC Method	>5	<1.0	<1.0	<1.0			
Water		WC Method	>0.2	NEG	NEG	NEG			
Glycol		WC Method		NEG	NEG	NEG			
WEAR METALS method limit/base current history1 history2									
Iron	ppm	ASTM D5185m	>100	40	28	33			
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1			
Nickel	ppm	ASTM D5185m	>4	<1	0	<1			
Titanium	ppm	ASTM D5185m		0	0	<1			
Silver	ppm	ASTM D5185m	>3	0	0	<1			
Aluminum	ppm	ASTM D5185m	>20	3	2	3			
Lead	ppm	ASTM D5185m	>40	1	2	1			
Copper	ppm	ASTM D5185m	>330	13	70	310			
Tin	ppm	ASTM D5185m	>15	1	1	2			
Vanadium	ppm	ASTM D5185m		0	<1	<1			
Cadmium	ppm	ASTM D5185m		0	0	<1			
ADDITIVES		method	limit/base	current	history1	history2			
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 3	history1 4	history2 19			
	ppm ppm	ASTM D5185m							
Boron		ASTM D5185m	2	3	4	19			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	3 0	4	19 <1			
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	3 0 63	4 0 62	19 <1 63			
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	3 0 63 <1	4 0 62 <1	19 <1 63 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	3 0 63 <1 960	4 0 62 <1 935	19 <1 63 1 726			
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	3 0 63 <1 960 1136	4 0 62 <1 935 1305	19 <1 63 1 726 1721 1238 1469			
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	3 0 63 <1 960 1136 1081	4 0 62 <1 935 1305 1153	19 <1 63 1 726 1721 1238			
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 0 950 1050 995 1180	3 0 63 <1 960 1136 1081 1280	4 0 62 <1 935 1305 1153 1316	19 <1 63 1 726 1721 1238 1469			
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	3 0 63 <1 960 1136 1081 1280 3289	4 0 62 <1 935 1305 1153 1316 3162	19 <1 63 1 726 1721 1238 1469 3412			
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	3 0 63 <1 960 1136 1081 1280 3289 current	4 0 62 <1 935 1305 1153 1316 3162 history1	19 <1 63 1 726 1721 1238 1469 3412 history2			
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25	3 0 63 <1 960 1136 1081 1280 3289 current 6	4 0 62 <1 935 1305 1153 1316 3162 history1 5	19 <1 63 1 726 1721 1238 1469 3412 history2 10			
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 50 950 1050 995 1180 2600 <b>imit/base</b> >25	3 0 63 <1 960 1136 1081 1280 3289 current 6 0	4 0 62 <1 935 1305 1153 1316 3162 history1 5 1	19 <1 63 1 726 1721 1238 1469 3412 history2 10 0			
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 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20	3 0 63 <1 960 1136 1081 1280 3289 current 6 0 2	4 0 62 <1 935 1305 1153 1316 3162 history1 5 1 0	19 <1 63 1 726 1721 1238 1469 3412 history2 10 0 2			
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 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >3	3 0 63 <1 960 1136 1081 1280 3289 current 6 0 2 2	4 0 62 <1 935 1305 1153 1316 3162 history1 5 1 0 history1	19 <1 63 1 726 1721 1238 1469 3412 <b>history2</b> 10 0 2 <b>history2</b>			
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 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >3	3 0 63 <1 960 1136 1081 1280 3289 current 6 0 2 2 current 0.5	4 0 62 <1 935 1305 1153 1316 3162 history1 5 1 0 history1 0.4	19 <1 63 1 726 1721 1238 1469 3412 <b>history2</b> 10 0 2 <b>history2</b> 0.6			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3 >20	3 0 63 <1 960 1136 1081 1280 3289 current 6 0 2 current 0.5 9.8	4 0 62 <1 935 1305 1153 1316 3162 history1 5 1 0 history1 0.4 9.1	19 <1 63 1 726 1721 1238 1469 3412 history2 10 0 2 history2 0.6 11.7			
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 0 950 1050 995 1180 2600 <b>imit/base</b> >25 20 <b>imit/base</b> >3 >20 >30	3 0 63 <1 960 1136 1081 1280 3289 <u>current</u> 6 0 2 2 <u>current</u> 0.5 9.8 20.9	4 0 62 <1 935 1305 1153 1316 3162 history1 5 1 0 history1 0.4 9.1 20.1	19 <1 63 1 726 1721 1238 1469 3412 <b>history2</b> 10 0 2 <b>history2</b> 0.6 11.7 22.8			



# **OIL ANALYSIS REPORT**





	VISUAL	method				history2
	White Metal	scalar *Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar *Visual	NONE	NONE	NONE	NONE
The survey of the second state of the second s	Precipitate	scalar *Visual	NONE	NONE	NONE	NONE
	Silt	scalar *Visual	NONE	NONE	NONE	NONE
	Debris	scalar *Visual	NONE	NONE	NONE	NONE
The Revenue of Constructions of Constructions of Construction	Sand/Dirt	scalar *Visual	NONE	NONE	NONE	NONE
/24 -	Appearance	scalar *Visual	NORML	NORML	NORML	NORML
Jan30/24 May24/24	Odor	scalar *Visual	NORML	NORML	NORML	NORML
-	Emulsified Water	scalar *Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar *Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES method	limit/base	current	history1	history2
	Visc @ 100°C	cSt ASTM D44		11.1	11.5	13.5
	GRAPHS					
	Iron (ppm)			Lead (ppm)		
	250 200 Severe		100	Severe	· · · · · · · · · · · · · · · · · · ·	1
Jan30/24	200		60			
Ja Ma-	E 150 100 - Abnormal		E 40	Abnormal		
	50		20			
	0		20			
1		0ct23/23 - Jan30/24 -			un29/23 - 0ct23/23 -	Jan30/24 - May24/24 -
	0ct24/22 Feb22/23 Jun29/23	0ct23/23 Jan30/24	May24/24	0ct24/22 Feb22/23	Jun29/23 0ct23/23	Jan 30/24 May 24/24
	Aluminum (ppm)			Chromium (p	opm)	
	50 40 Severe		50	Severe	1 1	
			40	, T G		
- 724 <b>-</b>	20 - Abnormal		<sup>30</sup>	Abnormal		
Jan30/24	10		10			
	0					
	0ct24/22 Feb22/23	0ct23/23 Jan30/24	May24/24	0ct24/22 Feb22/23	Jun29/23 0ct23/23	Jan30/24 May24/24
	ප වී ම Copper (ppm)	J <sub>ai</sub>	Ma	Silicon (ppm)	-	Jai
	400 Severe		80			
	300		60			
	<u>ل</u> و 200		E 40			
	100	$\backslash$	20	Abnorma		
	/33 /33 /33 /33 /32 /0	/23 +			/23+	/24 +
	0ct24/22 Feb22/23	0ct23/23 Jan30/24	May24/24	0ct24/22 Feb22/23	Jun29/23 0ct23/23	Jan 30/24 - May24/24 -
	Viscosity @ 100°C			Base Numbe		
	16		(DHO) (DHO)	]		
	Para Abnormal	$\sim$	9 o.u	[		
	(3-0012 - Base		L0.0			
	10 Abhormal					
	8		<sup>20</sup> 0.0			
	0ct24/22 - Feb22/23 - Jun29/23 -	0ct23/23 - Jan30/24 -		0ct24/22 Feb22/23	Jun29/23 - Oct23/23 -	Jan30/24 - May24/24 -
	Oct2 Feb2 Jun2	Oct2 Jan3	May24/24	Oct2 Feb2	Jun2 Oct2	Jan 30/24 May 24/24
Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - 501 : PCA0127018 : 06195028 : 11057151	Received : : Tested : :	ry, NC 27513 30 May 2024 31 May 2024 31 May 2024 - W			LEASING #119 DUSTRIAL AVE ( HEIGHTS, NJ US 07604



To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Test Package : MOB 1 (Additional Tests: TBN)

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (201)528-7053

Certificate 12367

Contact/Location: MIKE LONGETTE - MILRUT

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