

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 621335

#### 621335 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.

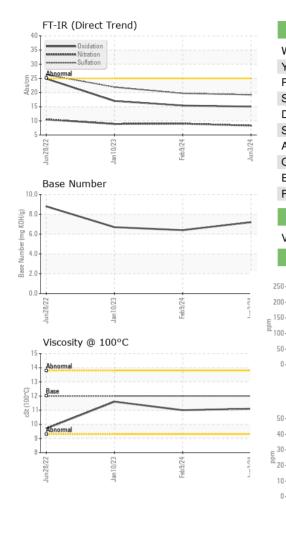
#### Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0125234	PCA0114575	PCA0085210
Sample Date		Client Info		03 Jun 2024	09 Feb 2024	10 Jan 2023
Machine Age	mls	Client Info		56189	46233	0
Oil Age	mls	Client Info		56189	46233	29167
Oil Changed		Client Info		Changed	Changed	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	12	13	18
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		20	2	6
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	4	2	8
Lead	ppm	ASTM D5185m	>40	<1	0	6
Copper	ppm	ASTM D5185m	>330	44	80	151
Tin	ppm	ASTM D5185m	>15	<1	<1	3
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 18	history1 5	history2 85
	ppm ppm					
Boron		ASTM D5185m	2	18	5	85
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	18 0	5 0	85 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	18 0 46	5 0 48	85 0 70
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	18 0 46 <1	5 0 48 <1	85 0 70 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	18 0 46 <1 841	5 0 48 <1 764	85 0 70 1 730
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	18 0 46 <1 841 1305	5 0 48 <1 764 964	85 0 70 1 730 1498
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	18 0 46 <1 841 1305 1096	5 0 48 <1 764 964 777	85 0 70 1 730 1498 868
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	18 0 46 <1 841 1305 1096 1320	5 0 48 <1 764 964 777 1006	85 0 70 1 730 1498 868 1116
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 50 950 1050 995 1180 2600	18 0 46 <1 841 1305 1096 1320 3675	5 0 48 <1 764 964 777 1006 2230	85 0 70 1 730 1498 868 1116 2781
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	18 0 46 <1 841 1305 1096 1320 3675 current	5 0 48 <1 764 964 777 1006 2230 history1	85 0 70 1 730 1498 868 1116 2781 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 0 950 1050 995 1180 2600 <b>limit/base</b>	18 0 46 <1 841 1305 1096 1320 3675 current 4	5 0 48 <1 764 964 777 1006 2230 history1 4	85 0 70 1 730 1498 868 1116 2781 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 0 950 1050 995 1180 2600 <b>limit/base</b>	18 0 46 <1 841 1305 1096 1320 3675 current 4 5	5 0 48 <1 764 964 777 1006 2230 history1 4 0	85 0 70 1 730 1498 868 1116 2781 <b>history2</b> 10 <1
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 <b>limit/base</b> >25	18 0 46 <1 841 1305 1096 1320 3675 current 4 5 5	5 0 48 <1 764 964 777 1006 2230 history1 4 0 2	85 0 70 1 730 1498 868 1116 2781 history2 10 <1 20
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>limit/base</b> >25 -20 <b>limit/base</b>	18 0 46 <1 841 1305 1096 1320 3675 current 4 5 5 5	5 0 48 <1 764 964 777 1006 2230 history1 4 0 2 2 history1	85 0 70 1 730 1498 868 1116 2781 <b>history2</b> 10 <1 20 <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 ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	18 0 46 <1 841 1305 1096 1320 3675 <i>current</i> 4 5 5 5 <i>current</i> 0.2	5 0 48 <1 764 964 777 1006 2230 history1 4 0 2 history1 0.2	85 0 70 1 730 1498 868 1116 2781 history2 10 <1 20 history2 0.2
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 <b>TS</b> ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	18 0 46 <1 841 1305 1096 1320 3675 <i>current</i> 4 5 5 <i>current</i> 0.2 8.3	5 0 48 <1 764 964 777 1006 2230 history1 4 0 2 history1 0.2 9.0	85 0 70 1 730 1498 868 1116 2781 history2 10 <1 20 history2 0.2 8.9
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 <b>TS</b> ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >30	18 0 46 <1 841 1305 1096 1320 3675 <b>current</b> 4 5 5 5 <b>current</b> 0.2 8.3 19.2	5 0 48 <1 764 964 777 1006 2230 history1 4 0 2 <u>history1</u> 0.2 9.0 19.7	85 0 70 1 1 730 1498 868 1116 2781 <b>history2</b> 10 <1 20 <b>history2</b> 0.2 8.9 21.9
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 D7844 *ASTM D7624	2 0 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 >20 >30 >30 <b>imit/base</b>	18 0 46 <1 841 1305 1096 1320 3675 <i>current</i> 4 5 5 <i>current</i> 0.2 8.3 19.2 <i>current</i>	5 0 48 <1 764 964 777 1006 2230 history1 4 0 2 history1 0.2 9.0 19.7 history1	85 0 70 1 730 1498 868 1116 2781 history2 10 <1 20 history2 0.2 8.9 21.9 history2



# **OIL ANALYSIS REPORT**



VISUAL		method			history1	history2		
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG		
Free Water	scalar	*Visual		NEG	NEG	NEG		
FLUID PROPER		method	limit/base		history1	history2		
Visc @ 100°C	cSt	ASTM D445	12.00	11.1	11.0	11.6		
GRAPHS								
Iron (ppm)			10	Lead (ppm)				
200 - Severe				80 Severe				
e <sup>150</sup>			F	60 -				
100 - Abnormal			шdd	40 - Abnormal				
50-				20				
		*			<u></u>			
Jun 28/22 Jan 10/23		Feb9/24	Jun3/24 .	Jun 28/22	lan 10/23. Eek 9/24 .	7/0 05		
鸟 - 鸟 Aluminum (ppm)		<u></u>	7	寻 Chromium (	7	1-7/n m		
<sup>50</sup> T :				50 <sub>T</sub> :	ppm)			
40 - Severe				40 - Severe				
E 30-				30-				
a 20 - Abnormal			mqq	20 - Abnormal				
10				10				
0		4	4		3	-		
Jun 28/22 Jan 10/23		Feb9/24	Jun3/24	Jun28/22	Jan10/23	1 20 0/ 7 1		
ت ت Copper (ppm)			,	⊰ Silicon (ppm	7			
400 Severe				<sup>80</sup>	,			
300				60 -				
E 200			udd	40				
100	and the second se			Abnormat				
V23		1/24 -	1/24	0 1 1 2 2 1 0	1/23 -	1.70		
Jun 28,22 Jan 10,23		Feb 9/24	Jun3/24	Jun28/22	Jan 10/23			
Viscosity @ 100°C			10	Base Numbe	Base Number			
14 Abnormal			(B/)	8.0				
			Bu).	6.0				
Base			Jaquin 4	ŧ.0 <b>-</b>				
10 Abnormal			ase Z	2.0 -				
33 53			0	0.0	23			
Jun 28/22 Jan 10/23		Feb9/24	Jun3/24	Jun28/22	Jan 10/23 Esh 9/24	1 20 0/ 7 1		
Ju Ja		_	7	Ju	Ϋ́, L	-		
: WearCheck USA - 501 : PCA0125234 : 06222053 : 11100250	Madiso Recei Teste Diagn	ved : 27 d : 27	, NC 27513 7 Jun 2024 7 Jun 2024 9 Jun 2024 - N			LEASING #1 ENNETT ROA ADELPHIA, F US 191		

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.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate 12367

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