

## **OIL ANALYSIS REPORT**

Sample Rating Trend

### NORMAL

#### Area (37348Z) Walgreens Machine Id [Walgreens] 136A62515 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 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 suitable for further service.

				Jun2023		
SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PCA0096016		
Sample Date		Client Info		16 Jun 2023		
Machine Age	mls	Client Info		170910		
Oil Age	mls	Client Info		50000		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>110	34		
Chromium	ppm	ASTM D5185m	>4	<1		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>2	0		
Aluminum	ppm	ASTM D5185m	>25	10		
Lead	ppm	ASTM D5185m	>45	1		
Copper	ppm	ASTM D5185m	>85	3		
Tin	ppm	ASTM D5185m	>4	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history 1	history 2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 16	history 1	history 2
	ppm ppm					
Boron Barium		ASTM D5185m	2	16		
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	2 0	16 0		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	16 0 32		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	16 0 32 <1		
Boron	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	16 0 32 <1 417		
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	16 0 32 <1 417 1718	  	  
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	16 0 32 <1 417 1718 910	   	   
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	16 0 32 <1 417 1718 910 1137	    	
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	16 0 32 <1 417 1718 910 1137 3305		
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	16 0 32 <1 417 1718 910 1137 3305 current		     history 2
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 <b>method</b>	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >30	16 0 32 <1 417 1718 910 1137 3305 current 7	     history 1	     history 2
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>limit/base</b> >30	16 0 32 <1 417 1718 910 1137 3305 current 7 2	     history 1	      history 2 
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> >30	16 0 32 <1 417 1718 910 1137 3305 current 7 2 2	     history 1  	     history 2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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> >30 20 <b>imit/base</b>	16 0 32 <1 417 1718 910 1137 3305 current 7 2 2 21 current	     history 1   history 1	     history 2   history 2
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 <b>limit/base</b> >30 >20 <b>limit/base</b>	16 0 32 <1 417 1718 910 1137 3305 <b>current</b> 7 2 2 21 21 <b>current</b> 0.7	     history 1   history 1 	     history 2  history 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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >30 >20 <b>imit/base</b> >3 >20	16 0 32 <1 417 1718 910 1137 3305 <i>current</i> 7 2 21 21 <i>current</i> 0.7 10.9	     history 1  history 1  history 1	      history 2   history 2  
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 50 950 1050 995 1180 2600 <b>imit/base</b> >30 <b>imit/base</b> >3 20 3	16 0 32 <1 417 1718 910 1137 3305 <b>current</b> 7 2 21 21 <b>current</b> 0.7 10.9 26.3	      history 1  history 1  history 1	      history 2  history 2  history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	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 imit/base >30 220 imit/base >3 >20 >30 >30	16 0 32 <1 417 1718 910 1137 3305 <i>current</i> 7 2 2 21 <i>current</i> 0.7 10.9 26.3 <i>current</i>	     history 1  history 1  history 1   history 1	     history 2  history 2  history 2 

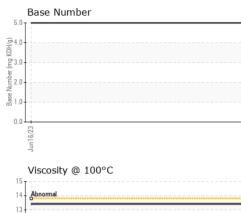


cSt (100°C) 11 Base

10 Abnormal

8. Jun16/23

# **OIL ANALYSIS REPORT**



	VISUAL		method			history 1	history 2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
6		scalar	*Visual	NORML	NORML		
50311	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual	20.L	NEG		
	FLUID PROP			limit/booo		biotory 1	biotory 0
			method	limit/base	current	history 1	history 2
	Visc @ 100°C GRAPHS	cSt	ASTM D445	12.00	13.4		
	Ferrous Alloys						
	<sup>35</sup>						
	30 - chromium						
	25 - nickel						
	20- ق 15-						
	<sup>8</sup> 15-						
	10-						
	5						
	0 1						
	Jun 16/23			Jun16			
	Non-ferrous Met	als		Jun16/23			
	Non-ferrous Met	als		Jun16			
	Non-ferrous Meta	als		Jun16			
	Non-ferrous Met	als		Jun 16			
	Non-ferrous Met	als		91muL			
	Non-ferrous Met	als		Jun16			
	Non-ferrous Met	als		Jun16			
	Non-ferrous Met	als		ann 16			
	Non-ferrous Met						
	Non-ferrous Met						
	Non-ferrous Met						
	Non-ferrous Met						
	Non-ferrous Met			Jun 16/23	Base Number		
	Non-ferrous Meta sea sea tin tin tin tin tin tin tin tin						
	Non-ferrous Meta Copper lead tin tin tin tin tin tin tin tin						
	Non-ferrous Met						
	Non-ferrous Met						
	Non-ferrous Met						
	Non-ferrous Meta Copper lead tin tin tin tin tin tin tin tin			Junt 6/23 Junt 6/23 (8/10) am Junt 6/23 Junt 6	 		
	Non-ferrous Met			Jun 16/23	 		
	Non-ferrous Meta Cooper In the second seco			5.0 (6/HOX Bull January 10/10/10/10/10/10/10/10/10/10/10/10/10/1			
	Non-ferrous Meta Cooper In the second seco			5.0 (6/HOX Bull January 10/10/10/10/10/10/10/10/10/10/10/10/10/1			
	Non-ferrous Meta Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead Copper lead			EZJ91un (6)HOX 8u) aquinv Beg Beg 1.0	) 		
	Non-ferrous Meta Cooper lead viscosity @ 1000 Viscosity @ 1000 Viscosity @ 1000 Viscosity @ 1000 Viscosity @ 1000	°C		1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (7) HOX HOX BASE 1.0 (7) HOX HOX BASE 1.0 (7) HOX HOX HOX HOX HOX HOX	Jun 16/23		
Laboratory	Non-ferrous Met	°C	son Ave., Ca	EZigi um EZigi um EZigi um Ezigi um Ezigi um Ty, NC 27513	Jun 16/23	ce - Shop 1370 - Ba 2872	erkeley-Perrysbu
Sample No.	Non-ferrous Met	°C • 501 Madis Received	son Ave., Ca	1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (6) HOX Base 1.0 (7) HOX HOX BASE 1.0 (7) HOX HOX BASE 1.0 (7) HOX HOX HOX HOX HOX HOX	Jun 16/23	2872	erkeley-Perrysbu 7 Oregon Roa
	Non-ferrous Met	°C • 501 Madis Received Diagnose	son Ave., Ca 1 : 30 . ed : 04 .	EZigi uni EZigi uni Ezigi uni Ezigi uni Ezigi uni Ezigi uni ery, NC 27513 Jun 2023	Jun 16/23	2872	erkeley-Perrysbu 7 Oregon Roz Perrysburg, O US 4355
ABB Sample No. Lab Number Unique Numbe ate 12367 Test Package	Non-ferrous Met	°C • 501 Madia Received Diagnost	son Ave., Ca d : 30 v ed : 04 v ician : Dor	5.0 (http://www.astrationality.com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/ com/	Jun 16/23	2872 Cont	erkeley-Perrysbu 7 Oregon Roa Perrysburg, O US 4355 tact: Curtis Ha
Sample No. Lab Number Unique Numbe	Non-ferrous Met.	501 Madia Received Diagnost Diagnost	son Ave., Ca d : 30 . ed : 04 . iician : Dor	5.0 (hyp) Bull 2023 h Baldridge 2.0 (hyp) Bull 2023 h Baldridge 2.0	Jun 16/23	2872 Cont chart@t	erkeley-Perrysbu 7 Oregon Roa Perrysburg, C US 4355

Submitted By: Curtis Hart Page 2 of 2