

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Area BARTO Machine Id 7067 [BARTO] Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- 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.

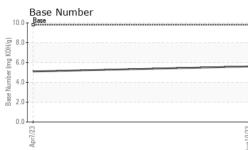
## Fluid Condition

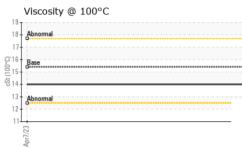
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	<b>MATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		SBP0005078	SBP0004195	
Sample Date		Client Info		10 Aug 2023	07 Apr 2023	
Machine Age	mls	Client Info		278539	240032	
Oil Age	mls	Client Info		38507	35742	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	19	22	
Chromium	ppm	ASTM D5185m	>5	2	2	
Nickel	ppm	ASTM D5185m	>2	<1	0	
Titanium	ppm	ASTM D5185m		10	0	
Silver	ppm	ASTM D5185m	>3	<1	0	
Aluminum	ppm	ASTM D5185m	>30	13	11	
Lead	ppm	ASTM D5185m	>30	0	0	
Copper	ppm	ASTM D5185m	>150	16	17	
Tin	ppm	ASTM D5185m	>5	1	<1	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 5	history1 7	history2
	ppm ppm					
Boron		ASTM D5185m	0	5	7	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	5 0	7 2	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 56	7 2 59	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 56 <1	7 2 59 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 0 56 <1 934	7 2 59 <1 813	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	5 0 56 <1 934 1245	7 2 59 <1 813 1350	   
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	0 0 60 0 1010 1070 1150	5 0 56 <1 934 1245 985	7 2 59 <1 813 1350 895	
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	0 0 60 0 1010 1070 1150 1270	5 0 56 <1 934 1245 985 1328	7 2 59 <1 813 1350 895 1209	
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	5 0 56 <1 934 1245 985 1328 3213	7 2 59 <1 813 1350 895 1209 2694	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	0 0 60 1010 1070 1150 1270 2060	5 0 56 <1 934 1245 985 1328 3213 current	7 2 59 <1 813 1350 895 1209 2694 history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >20	5 0 56 <1 934 1245 985 1328 3213 current 6	7 2 59 <1 813 1350 895 1209 2694 history1 6	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >20	5 0 56 <1 934 1245 985 1328 3213 current 6 3	7 2 59 <1 813 1350 895 1209 2694 history1 6 4	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b>	5 0 56 <1 934 1245 985 1328 3213 current 6 3 17	7 2 59 <1 813 1350 895 1209 2694 history1 6 4 19	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b>	5 0 56 <1 934 1245 985 1328 3213 current 6 3 17 current	7 2 59 <1 813 1350 895 1209 2694 history1 6 4 19 history1	      history2    history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 220 20 20 20 20	5 0 56 <1 934 1245 985 1328 3213 <i>current</i> 6 3 17 <i>current</i> 0.6	7 2 59 <1 813 1350 895 1209 2694 history1 6 4 19 history1 0.6	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >20 <i>limit/base</i> >3 >20	5 0 56 <1 934 1245 985 1328 3213 <i>current</i> 6 3 17 <i>current</i> 0.6 10.0	7 2 59 <1 813 1350 895 1209 2694 history1 6 4 19 history1 0.6 10.0	      history2   history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >3	5 0 56 <1 934 1245 985 1328 3213 <u>current</u> 6 3 17 <u>current</u> 0.6 10.0 22.2	7 2 59 <1 813 1350 895 1209 2694 history1 6 4 19 history1 0.6 10.0 20.9	     history2  history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 2060 2060 200 200 200 200 20 3 20 3 20	5 0 56 <1 934 1245 985 1328 3213 <i>current</i> 6 3 17 <i>current</i> 0.6 10.0 22.2 <i>current</i>	7 2 59 <1 813 1350 895 1209 2694 history1 6 4 19 history1 0.6 10.0 20.9 history1	     history2  history2  history2  history2



# **OIL ANALYSIS REPORT**





						histor
VISUAL		method	iiiiii/base	Current		
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 Wa		*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PRC	PERTIES	method	limit/base	current	history1	histor
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.0	
GRAPHS						
Ferrous Allo	ys					
25 iron	1					
20 - nickel	Im					
seessesses DICKE						
15						
15						
udd.						
10-						
5-						
5						
		*****				
0						
			10/23			
Apr7/23			ug10/23			
Apr7/23			Aug10/23			
Non-ferrous	: Metals		Aug10/23			
Apr7/23	: Metals		Aug10/23			
Non-ferrous	: Metals		Aug10/23			
Non-ferrous	Metals		Aug10/23			
Non-ferrous	Metals		Aug10/23			
Non-ferrous	6 Metals		Aug10/23			
Non-ferrous	s Metals		Aug 10/23			
Non-ferrous	Metals		Aug 10/23			
Non-ferrous	Metals		Aug 10/23			
Non-ferrous	Metals		Aug 10/23			
Non-ferrous	Metals		Aug 10/23			
Non-ferrous	Metals		Aug10/23			
Non-ferrous	Metals					
Non-ferrous	Metals					
Non-ferrous			Aug10/23	Base Numbe	۶r	
Non-ferrous			Aug10/23	Base Numbe	21	
Non-ferrous			Aug10/23	Base Numbe	21	
Non-ferrous			94n010023	Base Numbe	9 <b>r</b>	
Non-ferrous			94n010023	Base Numbe	2r	
Non-ferrous			94n010023	Base Numbe	27	
Non-ferrous			94n010023	Base Numbe	21.	
Non-ferrous			94n010023	Base Numbe	21.	
Non-ferrous			ase humber (mg KOH(d) 9.0 3.0 10.023 9.0 3.0 10.023 9.0 4.0	Base Numbe	21.	
Non-ferrous			0.01 per (mg KOH(0)	Base Numbe	51.	
Non-ferrous			10.0 (0,1/mpe build (0,1/mpe (0,1/mpe (0,1/mpe (0,1/mpe (0,1/mpe (0,1/mpe)) (0,1/mpe)	Base Numbe	21	
Non-ferrous			10.0 9889 Winnber (July 200 9889 Winnber (July 200 9898 Winnber (Jul	Base	er 	
Non-ferrous			10.0 (0,1/mpe Lang	Base Numbe	er	



Test Package : FLEET Certificate L2367 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)

Diagnosed

Diagnostician

: 16 Aug 2023

: Wes Davis

Plattsmouth, NE

US 68048

Lab Number

Unique Number : 10605334

: 05925387

Contact: Service Manager