

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id BTR1 Component

Fluid

Diesel Engine PETRO CANADA DURON SHP 15W40 (9 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.

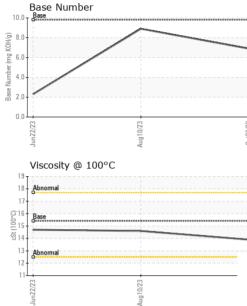
Fluid Condition

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	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0105993	PCA0102954	PCA0098099
Sample Date		Client Info		23 Oct 2023	10 Aug 2023	22 Jun 2023
Machine Age	hrs	Client Info		4909	4530	4151
Oil Age	hrs	Client Info		379	379	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	31	3	100
Chromium	ppm	ASTM D5185m	>20	<1	<1	3
Nickel	ppm	ASTM D5185m	>5	3	2	1 4
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	<1	5
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	8	<1	28
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m	-	0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
		ام م ماليم معا	limit/booo	ourroat	la la tanını d	history 0
ADDITIVES		method				history2
Boron	ppm	ASTM D5185m	0	2	<1	14
	ppm ppm					
Boron Barium	ppm	ASTM D5185m	0	2	<1	14
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 0 60	2 4 71	<1 0 66	14 0
Boron Barium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	2 4	<1 0	14 0 114
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 4 71 <1	<1 0 66 <1	14 0 114 2
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 4 71 <1 910	<1 0 66 <1 1065	14 0 114 2 598
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 4 71 <1 910 1129	<1 0 66 <1 1065 1179	14 0 114 2 598 1329
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 4 71 <1 910 1129 994	<1 0 66 <1 1065 1179 1125	14 0 114 2 598 1329 799
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	2 4 71 <1 910 1129 994 1202	<1 0 66 <1 1065 1179 1125 1329	14 0 114 2 598 1329 799 1033
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	0 0 60 0 1010 1070 1150 1270 2060	2 4 71 <1 910 1129 994 1202 2800	<1 0 66 <1 1065 1179 1125 1329 3990	14 0 114 2 598 1329 799 1033 2573
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 4 71 <1 910 1129 994 1202 2800 current	<1 0 66 <1 1065 1179 1125 1329 3990 history1	14 0 114 2 598 1329 799 1033 2573 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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 4 71 <1 910 1129 994 1202 2800 current 7	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3	14 0 114 2 598 1329 799 1033 2573 history2 12
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 method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >25	2 4 71 <1 910 1129 994 1202 2800 current 7 10	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3 6	14 0 114 2 598 1329 799 1033 2573 history2 12 8
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	2 4 71 <1 910 1129 994 1202 2800 current 7 10 8	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3 6 1	14 0 114 2 598 1329 799 1033 2573 history2 12 8 11
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	2 4 71 910 1129 994 1202 2800 current 7 10 8	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3 6 1 1 history1	14 0 114 2 598 1329 799 1033 2573 history2 12 8 11 11 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 ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	2 4 71 <1 910 1129 994 1202 2800 current 7 10 8 <i>current</i> 1	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3 6 1 1 history1 0.2	14 0 114 2 598 1329 799 1033 2573 history2 12 8 11 1 history2 1.6
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	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 4 71 <1 910 1129 994 1202 2800 current 7 10 8 current 1 9.4	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3 6 1 history1 0.2 5.4	14 0 114 2 598 1329 799 1033 2573 history2 12 8 11 1 history2 1.6 16.4
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	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 imit/base >20 20 20	2 4 71 <1 910 1129 994 1202 2800 current 7 10 8 current 1 9.4 21.6	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3 6 1 1 0.2 5.4 17.5	14 0 114 2 598 1329 799 1033 2573 history2 12 8 11 12 8 11 11 history2 1.6 1.6 16.4 31.9
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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 imit/base >20 20 20	2 4 71 <1 910 1129 994 1202 2800 current 7 10 8 <i>current</i> 1 9.4 21.6	<1 0 66 <1 1065 1179 1125 1329 3990 history1 3 6 1 1 0.2 5.4 17.5	14 0 114 2 598 1329 799 1033 2573 history 12 8 11 history 1.6 1.6 16.4 31.9



OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	14.6	14.7
GRAPHS						
Ferrous Alloys						
ΟΤΥ						
iron						
0 -						
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Jun 22/23	Aug10/23		0ct23/23			
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Viscosity @ 100°C				Base Number		
			10.0	Base		

10.0 Base

8.0

6.0 Number (

4 (Base

0.0

0ct23/23 .

: 31 Oct 2023

: 01 Nov 2023

(mg KOH/g)



Unique Number : 10723333 Diagnostician : Wes Davis Test Package : FLEET Contact: JAMIE HAYWORTH Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jhayworth@lrsrecycles.com * - 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)

Aug10/23 -

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

Diagnosed

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(100-00) (100-15

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Laboratory Sample No.

Lab Number

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: PCA0105993

: 05994973

Submitted By: ALSO ORIVANAR ORIHAR ORITOP - JAMIE HAYWORTH

Aug10/23 -

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