

## **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL



## (AT650T) Supermarket - Tractor **MACK 107A1853** Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

DIAGNOSIS	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Recommendation	Sample Number		Client Info		PCA0111535	PCA0096012	
Resample at the next service interval to monitor.	Sample Date		Client Info		14 Nov 2023	19 Jun 2023	
Wear	Machine Age	mls	Client Info		210635	203778	
All component wear rates are normal.	Oil Age	mls	Client Info		0	7081	
Contamination	Oil Changed		Client Info		Changed	Changed	
There is no indication of any contamination in the	Sample Status				NORMAL	NORMAL	
oil.	CONTAMINAT		method	limit/base	current	history1	history2
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.	Fuel		WC Method		<1.0	<1.0	
	Water		WC Method	>0.2	NEG	NEG	
	Glycol		WC Method		NEG	NEG	
	WEAR METAL	.S	method	limit/base	current	history1	history2
	Iron	ppm	ASTM D5185m	>120	18	23	
	Chromium	ppm	ASTM D5185m	>20	0	<1	
	Nickel	ppm	ASTM D5185m	>5	<1	<1	
	Titanium	ppm	ASTM D5185m	>2	<1	0	
	Silver	ppm	ASTM D5185m	>2	0	<1	
	Aluminum	ppm	ASTM D5185m	>20	2	3	
	Lead	ppm	ASTM D5185m	>40	<1	<1	
	Copper	ppm	ASTM D5185m	>330	12	6	
	Tin	ppm	ASTM D5185m		<1	1	
	Vanadium	ppm	ASTM D5185m		0	0	
	Cadmium	ppm	ASTM D5185m		0	0	
	ADDITIVES		method				history2
		maa					history2
	Boron	ppm mag	ASTM D5185m	2	21	11	· · · · · ·
	Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	21 0	11 0	
	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	21 0 53	11 0 58	
	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	21 0 53 <1	11 0 58 <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	21 0 53 <1 752	11 0 58 <1 949	
	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	21 0 53 <1 752 1184	11 0 58 <1 949 1153	  
	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	21 0 53 <1 752 1184 990	11 0 58 <1 949 1153 1047	
	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 995	21 0 53 <1 752 1184	11 0 58 <1 949 1153	
	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	2 0 50 950 1050 995 1180	21 0 53 <1 752 1184 990 1149 2982	11 0 58 <1 949 1153 1047 1282	
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	21 0 53 <1 752 1184 990 11149 2982 current	11 0 58 <1 949 1153 1047 1282 3797 history1	
	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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	21 0 53 <1 752 1184 990 1149 2982 current 4	11 0 58 <1 949 1153 1047 1282 3797 history1 5	     history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 <b>limit/base</b> >25	21 0 53 <1 752 1184 990 11149 2982 current	11 0 58 <1 949 1153 1047 1282 3797 history1	    history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	21 0 53 <1 752 1184 990 1149 2982 current 4 <1 3	11 0 58 <1 949 1153 1047 1282 3797 history1 5 4 2	    history2  
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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	21 0 53 <1 752 1184 990 1149 2982 current 4 <1 3 current	11 0 58 <1 949 1153 1047 1282 3797 history1 5 4 2 2 history1	    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 <b>TS</b>	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >20	21 0 53 <1 752 1184 990 1149 2982 current 4 <1 3 current 0.2	11 0 58 <1 949 1153 1047 1282 3797 history1 5 4 2 2 history1 0.2	     history2  history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	21 0 53 <1 752 1184 990 1149 2982 current 4 <1 3 current	11 0 58 <1 949 1153 1047 1282 3797 history1 5 4 2 2 history1	     history2   history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 20 <b>imit/base</b> >4 >20 >30	21 0 53 <1 752 1184 990 1149 2982 <u>current</u> 4 <1 3 <u>current</u> 0.2 6.8 19.3	11 0 58 <1 949 1153 1047 1282 3797 history1 5 4 2 history1 0.2 6.8 19.4	     history2  history2  history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 255 220 220 220 20 20 20 20 20 20 20 20 20	21 0 53 <1 752 1184 990 1149 2982 current 4 <1 3 current 0.2 6.8 19.3 current	11 0 58 <1 949 1153 1047 1282 3797 history1 5 4 2 history1 0.2 6.8 19.4 history1	    history2  history2  history2  history2
	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 TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D5185m	2 0 0 50 0 950 1050 995 1180 2600 2600 255 220 220 220 20 20 20 20 20 20 20 20 20	21 0 53 <1 752 1184 990 1149 2982 <u>current</u> 4 <1 3 <u>current</u> 0.2 6.8 19.3	11 0 58 <1 949 1153 1047 1282 3797 history1 5 4 2 history1 0.2 6.8 19.4	    history2  history2  history2



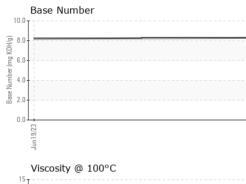
14 Abnormal

13 cSt (100°C) 11 Base

10 Abnormal

> 8. Jun19/23

## **OIL ANALYSIS REPORT**



	VISUAL		method	limit/base	current	history1	history2
	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	
Nov14/23	Appearance	scalar	*Visual	NORML	NORML	NORML	
lvoN	Odor	scalar	*Visual	NORML	NORML	NORML	
)°C	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	11.8	11.2	
	GRAPHS						
	Ferrous Alloys						
	25 iron						
	20						
	20 T nickel						
	15- E						
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	0						
	Jun 19/23			Nov14/23			
	Jun			Novi			
	Non-ferrous Meta	s					
	12 copper		and the second se	account of			
	10 - Internet lead		Constant Constant Constant				
	8-						
	Mg 6						
	d						
	4						
	2-						
	0						
	un 19/23			Vov14/23			
	nuh			Nov			
	Viscosity @ 100°C				Base Number		
	<sup>15</sup>			9.0-	1		
	14 - Abnormal			8.0-			
	13			B / U			
	0 12 - Base			<u> </u>			
	5 12 Base 5 11			E			
	10-			University of the second secon			
				(67.0 HO) (6.0 Line (1.0 HO) (0.0 Line (1.0 HO) (0.0 HO)			
	10 - Abnormal			2.0- 82 2.0- 1.0-			
	10 Abnormal 9			1.0-	19/23		14/23
	10 - Abnormal			1.0	Jun19/23		Nov14/23
lahoratoru	10 Abnormal 9 8 5 5 5 5 5 5 5 6 10 10 10 10 10 10 10 10 10 10	501 Madie	son Ave. Ca	0.0		- Shop 1072 - Sum	
Laboratory Sample No.	10 Abnormal 3 20 20 20 20 20 20 20 20 20 20	501 Madis Received		0.0		e - Shop 1072 - Supe 505	
Sample No. Lab Number	: WearCheck USA - 5 : PCA0111535 : 06011799	Received Diagnose	d : 20   ed : 20	ry, NC 27513 Nov 2023 Nov 2023			ermarket-Elizabeth Division Street Elizabeth, NJ
Sample No. Lab Number Unique Number	: WearCheck USA - 5 : PCA0111535 : 06011799 : 10750943	Received	d : 20   ed : 20	ry, NC 27513 Nov 2023		505	ermarket-Elizabeth Division Street Elizabeth, NJ US 07207
Certificate L2367 Sample No. Lab Number Unique Number Test Package	: WearCheck USA - 5 : PCA0111535 : 06011799 : 10750943 : FLEET	Receiveo Diagnoso Diagnost	d : 20   ed : 20   iician : We	ry, NC 27513 Nov 2023 Nov 2023 s Davis		505 Contact: N	ermarket-Elizabeth Division Street Elizabeth, NJ US 07207 prmand Brizak
Sample No. Lab Number Unique Number	: WearCheck USA - 5 : PCA0111535 : 06011799 : 10750943 : FLEET contact Customer Serv	Received Diagnose Diagnost ice at 1-8	d : 20   ed : 20   ician : We	ry, NC 27513 Nov 2023 Nov 2023 s Davis		505 Contact: N	ermarket-Elizabeth Division Street Elizabeth, NJ US 07207

Submitted By: Normand Brizak Page 2 of 2