

## **OIL ANALYSIS REPORT**

Sample Rating Trend

### NORMAL

## (AY416B) Supermarket - Tractor Machine Id FREIGHTLINER 107A1836

Component Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Fluid

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

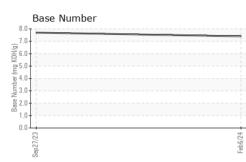
#### Fluid Condition

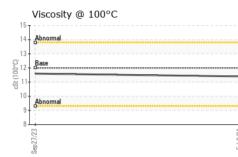
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

			Sep2023	Feb2024		
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0116501	PCA0104798	
Sample Date		Client Info		06 Feb 2024	27 Sep 2023	
Machine Age	mls	Client Info		87298	63604	
Oil Age	mls	Client Info		31749	20917	
Oil Changed		Client Info		Changed	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>80	19	5	
Chromium	ppm	ASTM D5185m	>5	2	<1	
Nickel	ppm	ASTM D5185m	>2	0	<1	
Titanium	ppm	ASTM D5185m		<1	0	
Silver	ppm	ASTM D5185m	>3	0	<1	
Aluminum	ppm	ASTM D5185m	>30	19	12	
Lead	ppm	ASTM D5185m	>30	0	1	
Copper	ppm	ASTM D5185m	>150	12	12	
Tin	ppm	ASTM D5185m	>5	0	<1	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	history2
	ppm ppm		limit/base	-	-	
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 4	history1 17	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 4 0	history1 17 0	history2 
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 4 0 48	history1 17 0 15	history2  
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current           4           0           48           <1	history1 17 0 15 <1	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 4 0 48 <1 695	history1 17 0 15 <1 158	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	Current 4 0 48 <1 695 1409	history1 17 0 15 <1 158 2113	history2    
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	Current 4 0 48 <1 695 1409 947	history1 17 0 15 <1 158 2113 923	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	current           4           0           48           <1           695           1409           947           1126	history1 17 0 15 <1 15 2113 923 1105	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current 4 0 48 <1 695 1409 947 1126 2754	history1 17 0 15 <11 158 2113 923 1105 3527	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	Current 4 0 48 <1 695 1409 947 1126 2754 Current	history1 17 0 15 <11 158 2113 923 1105 3527 history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	current           4           0           48           <1           695           1409           947           1126           2754           current           4	history1           17           0           15           <1           158           2113           923           1105           3527           history1           4	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b>	current           4           0           48           <1           695           1409           947           1126           2754           current           4           3	history1           17           0           15           <1           158           2113           923           1105           3527           history1           4           <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >20	current           4           0           48           <1           695           1409           947           1126           2754           current           4           3           39	history1         17         0         15         <1         158         2113         923         1105         3527         history1         4         <1         29	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >20 >20	current           4           0           48           <1           695           1409           947           1126           2754           current           4           3           39           current	history1         17         0         15         <1         158         2113         923         1105         3527         history1         4         <1         29         history1	history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >20 20 limit/base >20	current           4           0           48           <1           695           1409           947           1126           2754           current           4           3           39           current           0.7	history1         17         0         15         <1         158         2113         923         1105         3527         history1         4         <1         29         history1         0.2	history2 history2 history2 history2 history2
ADDITIVES 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 t ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >20 <i>imit/base</i> >20	current           4           0           48           <1           695           1409           947           1126           2754           current           4           3           39           current           0.7           8.2	history1         17         0         15         <1         158         2113         923         1105         3527         history1         4         <1         29         history1         0.2         6.3	history2 history2 history2 history2 history2
ADDITIVES 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 t ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >30	current           4           0           48           <1           695           1409           947           1126           2754           current           4           3           39           current           0.7           8.2           19.9	history1         17         0         15         <1         158         2113         923         1105         3527         history1         4         <1         29         history1         0.2         6.3         16.4	history2   history2            history2



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	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	
Feb6/24	Appearance	scalar	*Visual	NORML	NORML	NORML	
3	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	11.4	11.6	
	GRAPHS						
	Ferrous Alloys						
C-PE DV	20 iron ]						
	15 - nickel						
	Eg 10						
	5						
	0						
	5ep 27/23			Feb 6/24			
	Sett			Ξ.			
	Non-ferrous Meta	ls					
	12 copper						
	10- necessary lead						
	8-						
	E 6-						
	4						
	2-						
			Statting Constitution Constitution	4			
	Sep 27/23			Feb6/24			
		<u>_</u>		—			
	Viscosity @ 100°	L			Base Number	-	
	14 - Abnormal			8.0			
	13				1		
				Hy 5.0	).		
	ට 12 සි 11-			(0),40, 5.0 bm Jaquung 88 88 82.0 2.0			
	č5 11-			-qu M 3.0	)+		
	10 - Abnormal			e 2.0	)		
	9-			1.0	1		
	8						
	Sep27/23			Feb6/24	Sep 27/23		Feb6/24
	Sel			LE.	S.		LE.
,	: WearCheck USA - 50	)1 Madiso	on Ave., Cary	, NC 27513	Transerv	ice - Shop 1072 - Sup	ermarket-Elizabeth
, o.	: PCA0116501	Rece		5 Feb 2024			<b>Division Street</b>
ber	: 06099585	Teste		7 Feb 2024	(		Elizabeth, NJ
	: 10897815	Diag	nosed : 27	' Feb 2024 - W	les Davis	Ocasta at 1	US 07207
•	: FLEET	ico ot 1 (	000 007 1060	n			Iormand Brizak

\* - 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)

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