

OIL ANALYSIS REPORT

(89656X) Walgreens - Tractor [Walgreens - Tractor] 136A69077 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

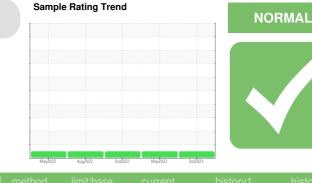
All component wear rates are normal.

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 acceptable for the time in service.



SAMPLE INFORMATION method limit/base current history1	history2
Sample Number Client Info PCA0106151 PCA0097082	PCA0082432
Sample Date Client Info 26 Oct 2023 25 May 2023 3	31 Oct 2022
Machine Age mls Client Info 715789 655278	591822
Oil Age mls Client Info 60511 63456 2	29871
Oil Changed Client Info Changed Changed (Changed
Sample Status NORMAL NORMAL	NORMAL
CONTAMINATION method limit/base current history1	history2
Fuel WC Method >5 <1.0	<1.0
Glycol WC Method NEG NEG	NEG
WEAR METALS method limit/base current history1	history2
Iron ppm ASTM D5185m >80 42 40	38
Chromium ppm ASTM D5185m >5 2 2	2
Nickel ppm ASTM D5185m >2 <1	0
Titanium ppm ASTM D5185m 0 0	0
Silver ppm ASTM D5185m >3 <1	1
Aluminum ppm ASTM D5185m >30 19 17	17
Lead ppm ASTM D5185m >30 0 1	<1
Copper ppm ASTM D5185m >150 5 6	8
Tin ppm ASTM D5185m >5 <1	1
Vanadium ppm ASTM D5185m 0 0	0
Cadmium ppm ASTM D5185m 0 0	0
ADDITIVES method limit/base current history1	history2
	TIIStoryz
Boron ppm ASTM D5185m 2 6 6	8
Boron ppm ASTM D5185m 2 6 6	8
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1	8 0 58 <1
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1	8 0 58 <1 795
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1	8 0 58 <1 795 1468
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1	8 0 58 <1 795 1468 1029
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Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 950 955 847 Calcium ppm ASTM D5185m 1050 1193 1348 Phosphorus ppm ASTM D5185m 995 1114 1042 Zinc ppm ASTM D5185m 1180 1363 1318 Sulfur ppm ASTM D5185m 2600 2822 3201	8 0 58 <1 795 1468 1029
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 60 Manganese ppm ASTM D5185m 0 <1	8 0 58 <1 795 1468 1029 1283 3315 history2
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 950 955 847 Calcium ppm ASTM D5185m 1050 1193 1348 Phosphorus ppm ASTM D5185m 995 1114 1042 Zinc ppm ASTM D5185m 2600 2822 3201 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >20 10 8	8 0 58 <1 795 1468 1029 1283 3315 history2 8
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 950 955 847 Calcium ppm ASTM D5185m 950 1193 1348 Phosphorus ppm ASTM D5185m 995 1114 1042 Zinc ppm ASTM D5185m 2600 2822 3201 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >20 10 8 Sodium ppm ASTM D5185m 2 3 3	8 0 58 <1 795 1468 1029 1283 3315 history2 8 2
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 950 955 847 Calcium ppm ASTM D5185m 950 1193 1348 Phosphorus ppm ASTM D5185m 995 1114 1042 Zinc ppm ASTM D5185m 2600 2822 3201 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >20 10 8	8 0 58 <1 795 1468 1029 1283 3315 history2 8
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Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 950 955 847 Calcium ppm ASTM D5185m 950 955 847 Calcium ppm ASTM D5185m 950 1193 1348 Phosphorus ppm ASTM D5185m 995 1114 1042 Zinc ppm ASTM D5185m 2600 2822 3201 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >20 10 8 Sodium ppm ASTM D5185m >20 5 5 Potassium ppm ASTM D5185m >20 5 5	8 0 58 <1 795 1468 1029 1283 3315 history2 8 2 6 history2
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 950 955 8477 Calcium ppm ASTM D5185m 950 955 847 Calcium ppm ASTM D5185m 950 1193 1348 Phosphorus ppm ASTM D5185m 995 1114 1042 Zinc ppm ASTM D5185m 2600 2822 3201 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >20 10 8 Sodium ppm ASTM D5185m >20 5 5 INFRA-RED method limit/base current history1	8 0 58 <1 795 1468 1029 1283 3315 history2 8 2 6 history2 1.4
Boron ppm ASTM D5185m 2 6 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 60 Manganese ppm ASTM D5185m 0 <1 1 1 Magnesium ppm ASTM D5185m 950 955 8477 Calcium ppm ASTM D5185m 950 1193 1348 1 Phosphorus ppm ASTM D5185m 1050 1193 1348 1 Zinc ppm ASTM D5185m 1050 2822 3201 1 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >20 10 8 Sodium ppm ASTM D5185m >20 5 5 INFRA-RED method limit/base current history1 Soot % % *ASTM D7844	8 0 58 <1 795 1468 1029 1283 3315 history2 8 2 6 history2 1.4 1.4 13.2

Base Number (BN) mg KOH/g ASTM D2896

4.9

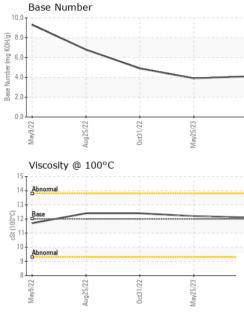
3.9

4.1



OIL ANALYSIS REPORT

VISUAL



		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
0d31/22		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
	5/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
	May25/23 0ct26/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	-	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual	20.L	NEG	NEG	NEG
					Parelt de la la la			
		FLUID PROPE Visc @ 100°C	cSt	method ASTM D445	limit/base	current 12.1	history1 12.2	history2 12.4
		GRAPHS	COL	A3110 D443	12.00	12.1	12.2	12.4
		Ferrous Alloys						
-		45 T		1				
0ct31/22	May25/23	40 - iron 35 - iron chromium	-					
Oct	May	35 nickel						
		E ²⁵ ₂₀						
		15						
		10						
		5						
		5 52	22	23	53			
		May9/22 Aug25/22	0ct31/22	May25/23	0ct26/23			
		4	_	×	J			
		Non-ferrous Meta	115					
		copper						
		8 - tin	\wedge					
		6						
		udd						
		2						
			And So I Party of Canada and Sa	gan 2 State of the	Address of the second			
			31/22	255/23	26/23			
			0ct31/22 +	May25/23	0ct26/23			
		ZZ/SZBINY ZZ/SZBINY Viscosity @ 100°		May25/23		Base Number		
		May9/22		May25/23	000000000000000000000000000000000000000			
		Viscosity @ 100°		May25/23	10.			
		Viscosity @ 100°		May25523	10.			
		Viscosity @ 100°		May25523	10.			
		Viscosity @ 100°		May25/23	10.			
		Viscosity @ 100°		Maj/25/23	10. (6)HOX 60. Mu) Jaquini 4.			
		Viscosity @ 100°		Wait223	10.			
		Viscosity @ 100°	C		10. (6)HOX B0. Jaquuru 888 2. 0			
		Viscosity @ 100°	C		10. (6)HOX B0. Jaquuru 888 2. 0		31/22	25/23
		Viscosity @ 100°		May25/23	10. (0) (0) HOX 60. Jun 10. See grant 4. See 2.		0d31/22	May25/23
	Laboratory:	Viscosity @ 100°	C	May25/23 -	10. (B) AN BOL (B) HON BOL (B)	Mang25/22 Aug25/22		
	Laboratory Samala No	Viscosity @ 100°	C	CISCING MARKET	10. (0)HOX 60. 94UNN 988 2. CU9700 ry, NC 2751	Mang25/22 Aug25/22	Shop 1373 - Berkeley	-Anderson/Pendergr
	Sample No.	Viscosity @ 100°	C ZZ/Epp0 501 Madia Received	son Ave., Ca	10. (0)HOX 60. 94UNN 888 2. (0)HOX 60. 94UNN 888 2. (0) ry, NC 2751 Nov 2023	Mang25/22 Aug25/22	Shop 1373 - Berkeley 101 A	-Anderson/Pendergr Iliance Parkwa
	Sample No. Lab Number	Viscosity @ 100°	C ZZZ SO1 Madia Received Diagnos	son Ave., Ca d : 06 l ed : 08 l	10. (b) HOX Bull 10. 10. 10. 10. 10. 10. 10. 10.	Mang25/22 Aug25/22	Shop 1373 - Berkeley 101 A	-Anderson/Pendergr Iliance Parkw Willamston, S
icate L2367	Sample No.	Viscosity @ 100°	C ZZ/Epp0 501 Madia Received	son Ave., Ca d : 06 l ed : 08 l	10. (0)HOX 60. 94UNN 888 2. (0)HOX 60. 94UNN 888 2. (0) ry, NC 2751 Nov 2023	Mang25/22 Aug25/22	Shop 1373 - Berkeley 101 A	

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