

OIL ANALYSIS REPORT

(89719X) Walgreens - Tractor [Walgreens - Tractor] 136A67158 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

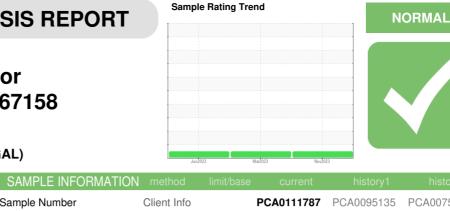
All component wear rates are normal.

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 Number		Client Info		PCA0111787	PCA0095135	PCA0075493
Sample Date		Client Info		09 Nov 2023	15 Mar 2023	01 Jun 2022
Machine Age	mls	Client Info		426361	397371	352593
Oil Age	mls	Client Info		28990	44778	20905
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
				-	-	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	12	18	11
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	6	<1	5
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>25	9	27	15
Lead	ppm	ASTM D5185m	>45	<1	<1	<1
Copper	ppm	ASTM D5185m	>85	5	2	9
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
	nnm	ASTM D5185m	2	4	6	9
Boron	ppm	ASTM D5185m	2	4	6	9
Boron Barium	ppm	ASTM D5185m	0	0	0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 50	0 59	0 59	0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0	0 59 <1	0 59 <1	0 61 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950	0 59 <1 881	0 59 <1 816	0 61 <1 831
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050	0 59 <1 881 1059	0 59 <1 816 1219	0 61 <1 831 1049
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 50 0 950 1050 995	0 59 <1 881 1059 945	0 59 <1 816 1219 1000	0 61 <1 831 1049 898
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 50 0 950 1050 995 1180	0 59 <1 881 1059 945 1160	0 59 <1 816 1219 1000 1209	0 61 <1 831 1049 898 1138
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 50 0 950 1050 995 1180 2600	0 59 <1 881 1059 945 1160 3038	0 59 <1 816 1219 1000 1209 3034	0 61 <1 831 1049 898 1138 2895
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	0 50 0 950 1050 995 1180 2600	0 59 <1 881 1059 945 1160 3038 current	0 59 <1 816 1219 1000 1209 3034 history1	0 61 <1 831 1049 898 1138 2895 history2
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 method ASTM D5185m	0 50 0 950 1050 995 1180 2600	0 59 <1 881 1059 945 1160 3038 current 6	0 59 <1 816 1219 1000 1209 3034 history1 7	0 61 <1 831 1049 898 1138 2895 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 Limit/base >30	0 59 <1 881 1059 945 1160 3038 <u>current</u> 6 0	0 59 <1 816 1219 1000 1209 3034 history1 7 <1	0 61 <1 831 1049 898 1138 2895 history2 5 1
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 method ASTM D5185m	0 50 0 950 1050 995 1180 2600 Limit/base >30	0 59 <1 881 1059 945 1160 3038 current 6	0 59 <1 816 1219 1000 1209 3034 history1 7	0 61 <1 831 1049 898 1138 2895 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 Limit/base >30	0 59 <1 881 1059 945 1160 3038 <u>current</u> 6 0	0 59 <1 816 1219 1000 1209 3034 history1 7 <1	0 61 <1 831 1049 898 1138 2895 history2 5 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >30	0 59 <1 881 1059 945 1160 3038 <u>current</u> 6 0 29	0 59 <1 816 1219 1000 1209 3034 <u>history1</u> 7 <1 69	0 61 <1 831 1049 898 1138 2895 history2 5 1 31
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >30 >20	0 59 <1 881 1059 945 1160 3038 <u>current</u> 6 0 29 <u>current</u>	0 59 <1 816 1219 1000 1209 3034 history1 7 <1 69 history1	0 61 <1 831 1049 898 1138 2895 history2 5 1 31 31 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 ytts	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >30 }	0 59 <1 881 1059 945 1160 3038 <u>current</u> 6 0 29 <u>current</u> 0.4	0 59 <1 816 1219 1000 1209 3034 history1 7 <1 69 history1 0.5	0 61 <1 831 1049 898 1138 2895 history2 5 1 31 31 history2 0.3
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 ypm ypm	ASTM D5185m ASTM D7844 *ASTM D7824	0 50 950 1050 995 1180 2600 limit/base >30 >20 limit/base >33 >20	0 59 <1 881 1059 945 1160 3038 <u>current</u> 6 0 29 <u>current</u> 0.4 10.3	0 59 <1 816 1219 1000 1209 3034 history1 7 <1 69 history1 0.5 10.2	0 61 <1 831 1049 898 1138 2895 history2 5 1 31 history2 0.3 8.7
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 ypm ypm	ASTM D5185m ASTM D7844 *ASTM D7824	0 50 950 1050 995 1180 2600 limit/base >30 limit/base >3 20 limit/base >3	0 59 <1 881 1059 945 1160 3038 <u>current</u> 6 0 29 <u>current</u> 0.4 10.3 21.7	0 59 <1 816 1219 1000 1209 3034 history1 7 <1 69 history1 0.5 10.2 22.0	0 61 <1 831 1049 898 1138 2895 history2 5 1 31 history2 0.3 8.7 18.6

6.1

Base Number (BN) mg KOH/g ASTM D2896

8.9

6.2

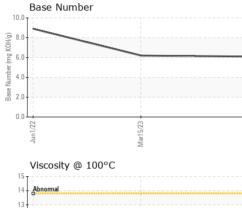


cSt (100°C) 11 Base

10 Abnorma 9 8. Jun1/22

OIL ANALYSIS REPORT

VISUAL



				method			history1	history
		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
		Silt		*Visual	NONE	NONE	NONE	NONE
5/23		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
		Sand/Dirt	scalar		NONE	NONE	NONE	NONE
	/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Marl 5/23	Nov9/23	Odor	scalar		NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual	20.2	NEG	NEG	NEG
1						NEG		
		FLUID PROPI		method	limit/base	current	history1	history
		Visc @ 100°C	cSt	ASTM D445	12.00	11.2	11.1	11.1
		GRAPHS						
		Ferrous Alloys	\sim					
/23		16 - iron chromium	\sim					
Mar15/23		14 - nickel						
_		12						
		E ¹⁰						
		6						
		4		AND DESCRIPTION OF THE OWNER OF T	and a state of the			
		2	-	AND THE REAL PROPERTY DATE				
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		Jun1/22	Mar15/23		Nov9/23			
		,	_		2			
		Non-ferrous Meta	als					
		copper						
		8 - management lead						
		4						
		4	\searrow					
		4 2	\searrow					
		4 2 0						
		4 2 0	r15/23		v9/23			
		4 0 1 2 7 7 7 7 1 1 7 7 7 1 1 1 7 7 1 1 1 7 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1	Mart5/23		Nov9/23			
		Viscosity @ 100°				Base Number		
		Viscosity @ 100°			9.0	\sim		
		Viscosity @ 100°			9.0			
		Viscosity @ 100°			9.0			
		Viscosity @ 100°			9.0 8.0 (0.7.0 V) 6.0 8 5.0			
		Viscosity @ 100°			9.0 8.0 (0.7.0 V) 6.0 8 5.0			
		Viscosity @ 100°			9.0 8.0 (0.7.0 V) 6.0 8 5.0			
		Viscosity @ 100°			9.0 8.0 (0)HOX 6.0 L0)HOX 10, 5.0 9, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10			
		Viscosity @ 100°			9.0 8.0 (97.0 6.0 bu) 5.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9			
		Viscosity @ 100°	C		9.0 8.0 (0)HOX 6.0 9.1 HOX 60.0 9.1 9.1 HOX 60.0 9.1 9.1 9.1 9.1 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0		5/23	
		Viscosity @ 100°			9.0 8.0 (97.0 6.0 bu) 5.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9		Mart 5/23	
		Viscosity @ 100°	C Marls/23		9.0 8.0 (0)HOX 00 10)J 5.0 94UNN 9888 2.0 1.0 0.0 22(600N	Jun1/22		
	Laboratory	Viscosity @ 100° Viscosity @ 100° ¹⁵ ⁴ ⁴ ⁴ ² ⁴ ⁴ ⁴ ⁴ ⁴ ⁴ ⁴ ⁴	C EZISIJEW 501 Madia		9.0 8.0 (9)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)	Jun1/22	- Shop 1373 - Berkeley-	
	Sample No.	Viscosity @ 100°	C ESSIVE 501 Madia Received	d :15 l	9.0 8.0 (97.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	Jun1/22	- Shop 1373 - Berkeley 101 Al	liance Parkv
	Sample No. Lab Number	Viscosity @ 100° ¹⁵ ⁴ ⁴ ² ⁴ ² ⁴ ⁴ ⁴ ⁴ ⁴ ⁴ ⁴ ⁴	C Eggstaw 501 Madia Received Diagnos	d :15 ed :16	9.0 8.0 (77.0 1000 00 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	Jun1/22	- Shop 1373 - Berkeley 101 Al	liance Parkv Willamston,
ificate L2367	Sample No.	Viscosity @ 100° Viscosity @ 100° Abnomal Abnomal Abnomal Second	C ESSIVE 501 Madia Received	d :15 ed :16	9.0 8.0 (97.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	Jun1/22	- Shop 1373 - Berkeley 101 Al	Anderson/Penderg liance Parkv Willamston, US 296 Sonny Bouc

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