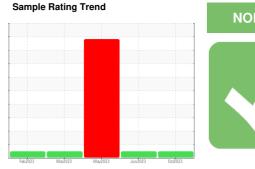


OIL ANALYSIS REPORT

(51484Z) Walgreens - Tractor [Walgreens - Tractor] 136A63399

Diesel Engine

PETRO CANADA DURON SHP 10W30 (40 QTS)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the

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 INFORMATION method limit/base current history1 history2			Feb2023	Mar2U23	May2023 Jun2023	Oct2023	
Sample Date Client Info 15 Oct 2023 28 Jun 2023 25 May 2023 Machine Age mls Client Info 162130 125453 107283 Oil Age mls Client Info 0 0 83486 Oil Changed Client Info N/A Not Changd N/A Sample Status method Imilibase current Inistory1 history2 Fuel WC Method 55 <1.0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 162130 125453 107283 Oil Age mls Client Info 0 0 83486 Oil Changed Client Info N/A Not Changd N/A Sample Status NoRMAL NORMAL SEVERE CONTAMINATION method Imitibbase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Glycol WC Method NEG 0.0 <1.0 Uron ppm ASTM D5185m >80 53 37 120 Iron ppm ASTM D5185m >5 5 3 9 Nickel ppm ASTM D5185m >2 <1 <1 1 River ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >30 <	Sample Number		Client Info		PCA0094335	PCA0094366	PCA0094372
Oil Age mls Client Info N/A Not Changd N/A Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method S <1.0 <1.0 <1.0 Glycol WC Method NEG 0.0 0.10 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 53 37 ▲ 120 Chromium ppm ASTM D5185m >5 5 3 9 Nickel ppm ASTM D5185m >5 5 3 9 Silver ppm ASTM D5185m >30 0 0 0 Lead ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >5 1 1 3 Vana	Sample Date		Client Info		15 Oct 2023	28 Jun 2023	25 May 2023
Oil Changed Satus Client Info Sample Status N/A NORMAL NORMAL N/A SEVERE CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Glycol WC Method >5 <1.0 <1.0 <1.0 WEAR METALS method limit/base current history1 history2 Iron ASTM D5185m >80 53 37 120 Chromium ppm ASTM D5185m >5 5 3 9 Nickel ppm ASTM D5185m >2 <1 <1 1 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 76 69 254 Lead ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >30 0 <1 <1 Vanadiu	Machine Age	mls	Client Info		162130	125453	107283
Sample Status	Oil Age	mls	Client Info		0	0	83486
CONTAMINATION	Oil Changed		Client Info		N/A	Not Changd	N/A
Fuel WC Method >5 <1.0	Sample Status				NORMAL	NORMAL	SEVERE
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 53 37 ▲ 120 Chromium ppm ASTM D5185m >5 5 3 9 Nickel ppm ASTM D5185m >2 <1 <1 1 Titanium ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 0 <1 <1 Lead ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >5 1 1 3 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 2 5 4	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron	Glycol		WC Method		NEG	0.0	0.10
Chromium ppm ASTM D5185m >5 5 3 9 Nickel ppm ASTM D5185m >2 <1 <1 1 Tittanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 0 Aluminum ppm ASTM D5185m >30 0 <1 <1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 3 Vanadium ppm ASTM D5185m >5 1 1 3 3 0	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	53	37	<u>120</u>
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 76 69 △ 254 Lead ppm ASTM D5185m >30 0 <1	Chromium	ppm	ASTM D5185m	>5	5	3	9
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 76 69 ▲ 254 Lead ppm ASTM D5185m >30 0 <1	Nickel	ppm	ASTM D5185m	>2	<1	<1	1
Aluminum ppm ASTM D5185m >30 76 69 ▲ 254 Lead ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >150 45 116 168 Tin ppm ASTM D5185m 5 1 1 3 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 <	Titanium		ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >30 0 <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >150 45 116 168 Tin ppm ASTM D5185m >5 1 1 3 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m 2 5 4 17 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 2 1 5 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m >2600 1966 2828 2245	Aluminum		ASTM D5185m	>30	76	69	<u>^</u> 254
Tin ppm ASTM D5185m >5 1 1 3 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 5 4 17 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 58 58 49 Manganese ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 2600 1966 2828	Lead	ppm	ASTM D5185m	>30	0	<1	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 5 4 17 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 58 58 49 Manganese ppm ASTM D5185m 0 2 1 5 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 hi	Copper	ppm	ASTM D5185m	>150	45	116	168
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 5 4 17 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 58 58 49 Manganese ppm ASTM D5185m 0 2 1 5 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 950 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11	Tin	ppm	ASTM D5185m	>5	1	1	3
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 5 4 17 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 58 58 49 Manganese ppm ASTM D5185m 50 58 58 49 Magnesium ppm ASTM D5185m 50 58 58 49 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 2600 1186 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 2 5 4 17 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 58 58 49 Manganese ppm ASTM D5185m 0 2 1 5 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 1180 1187 1186 997 Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m<	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 58 58 49 Manganese ppm ASTM D5185m 0 2 1 5 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 1180 1187 1186 997 Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D51	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 58 58 49 Manganese ppm ASTM D5185m 0 2 1 5 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m >20 148 130 497 INFRA-RED method limit/base current history1 history2 Soot %	Boron	ppm	ASTM D5185m	2	5	4	17
Manganese ppm ASTM D5185m 0 2 1 5 Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 1180 1187 1186 997 Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m >20 148 130 497 INFRA-RED method limit/base current history1 history2 Soot % % *AST	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 950 881 855 658 Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 1180 1187 1186 997 Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m >20 148 130 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm	Molybdenum	ppm	ASTM D5185m	50	58	58	49
Calcium ppm ASTM D5185m 1050 1263 1213 1916 Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 1180 1187 1186 997 Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/.1mm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION <th>Manganese</th> <th>ppm</th> <th>ASTM D5185m</th> <th>0</th> <th>2</th> <th>1</th> <th>5</th>	Manganese	ppm	ASTM D5185m	0	2	1	5
Phosphorus ppm ASTM D5185m 995 794 956 782 Zinc ppm ASTM D5185m 1180 1187 1186 997 Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1m	Magnesium	ppm	ASTM D5185m	950	881	855	658
Zinc ppm ASTM D5185m 1180 1187 1186 997 Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8	Calcium	ppm	ASTM D5185m	1050	1263	1213	1916
Sulfur ppm ASTM D5185m 2600 1966 2828 2245 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m >20 148 130 ▲ 497 Potassium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8	Phosphorus	ppm	ASTM D5185m	995	794	956	782
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m 4 2 11 Potassium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8		ppm		1180	1187	1186	997
Silicon ppm ASTM D5185m >20 11 7 16 Sodium ppm ASTM D5185m 4 2 11 Potassium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8			ASTM D5185m	2600	1966	2828	2245
Sodium ppm ASTM D5185m 4 2 11 Potassium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8		TS				history1	•
Potassium ppm ASTM D5185m >20 148 130 ▲ 497 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8				>20			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8		ppm					
Soot % % *ASTM D7844 >3 0.9 0.3 1.3 Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8		ppm	ASTM D5185m		148	130	<u>497</u>
Nitration Abs/cm *ASTM D7624 >20 10.9 5.1 15.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8	INFRA-RED		method	limit/base	current		· · · · · · · · · · · · · · · · · · ·
Sulfation Abs/.1mm *ASTM D7415 >30 23.0 18.2 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8	Soot %						
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.8 14.2 35.8		Abs/cm	*ASTM D7624	>20	10.9		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	23.0	18.2	28.9
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 3.9 9.5 4.3							
	Oxidation	Abs/.1mm	*ASTM D7414	>25	22.8	14.2	35.8



OIL ANALYSIS REPORT







Laboratory Sample No.

Lab Number **Unique Number**

: 10696595 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 16 Oct 2023 : PCA0094335 Received : 05979300

Diagnosed : 19 Oct 2023 Diagnostician : Wes Davis

Transervice - Shop 1363 - Berkeley-Orlando 2455 Premier Row

US 32809 Contact: James Bennett jbennett@transervice.com

T: (407)856-8590 F: (407)856-2269

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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) Orlando, FL