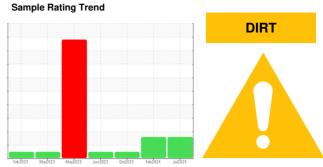


OIL ANALYSIS REPORT

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

Diesel Engine

PETRO CANADA DURON SHP 10W30 (40 QTS)



DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal. 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.

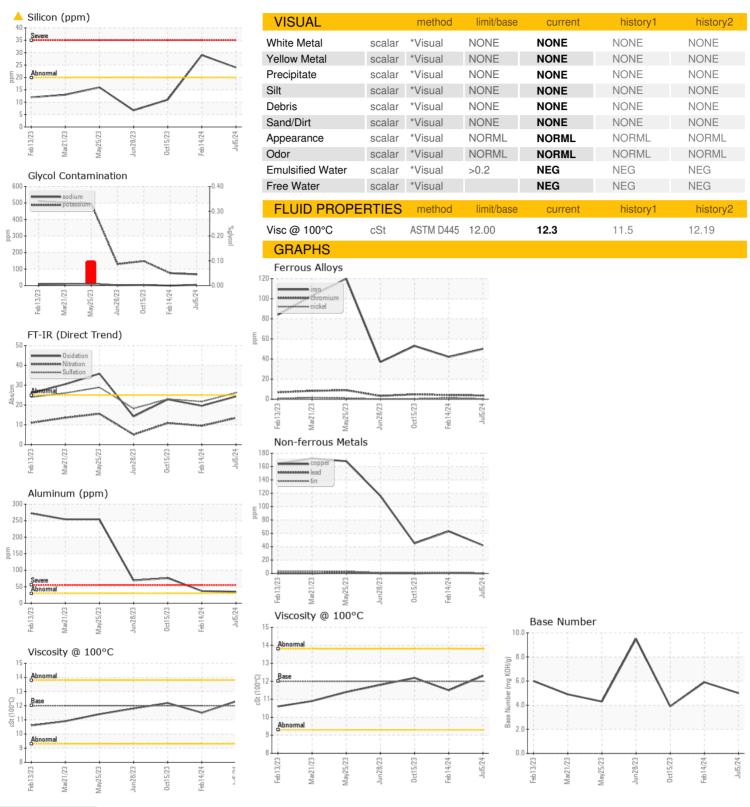
Fluid Condition

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.

Oil Age Oil Changed Oil Changed Sample Status Client Info Changed Changed N/A N/A N/A Sample Status Client Info Changed ABNORMAL N/A N/A N/A CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0) (S)		Feb 2023	Mar2023 May2023	Jun 2023 Oct2023 Feb 2024	Jul2024	
Sample Date Client Info 05 Jul 2024 14 Feb 2024 15 Oct 2023	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 05 Jul 2024 14 Feb 2024 15 Oct 2023 Machine Age mls Client Info 259974 216580 162130 Oil Age mls Client Info 60000 0 0 Oil Changed Client Info Changed N/A N/A Sample Status Image: Control of the Info Changed N/A N/A N/A CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >5 4 4 5 Nickel ppm ASTM 05185m >3 <1 1 <1	Sample Number		Client Info		PCA0128167	PCA0094350	PCA0094335
Machine Age mls Client Info 259974 216580 162130 Oil Age mls Client Info 60000 0 0 Oil Changed Client Info Changed N/A N/A Sample Status Image: Client Info Changed N/A N/A CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0			Client Info		05 Jul 2024	14 Feb 2024	15 Oct 2023
Colient Info	Machine Age	mls			259974	216580	162130
Oil Changed Sample Status Client Info Changed ABNORMAL ABNORMAL ABNORMAL NORMAL N/A NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method WC Method Solve WC Method NEG NEG NEG NEG NEG Oxed NEG	Oil Age	mls	Client Info		60000	0	0
ABNORMAL ABNORMAL	-		Client Info		Changed	N/A	N/A
Fuel	Sample Status				ABNORMAL	ABNORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 50 42 53 Chromium ppm ASTM D5185m >5 4 4 5 Nickel ppm ASTM D5185m >2 <1 1 <1 0 Silver ppm ASTM D5185m >2 <1 1 <1 0 Aluminum ppm ASTM D5185m >30 35 37 76 Lead ppm ASTM D5185m >30 0 <1 0 Copper ppm ASTM D5185m >30 0 <1 1 Tin ppm ASTM D5185m >5 <1 1 1 Vanadium ppm ASTM D5185m 0 <1 0 <1 0 Cadmium ppm	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 50 42 53 Chromium ppm ASTM D5185m >5 4 4 5 Nickel ppm ASTM D5185m >2 <1	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 42 53 Chromium ppm ASTM D5185m >5 4 4 5 Nickel ppm ASTM D5185m >2 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >5 4 4 5 Nickel ppm ASTM D5185m >2 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	50	42	53
Description	Chromium	ppm	ASTM D5185m	>5	4	4	5
Silver	Nickel	ppm	ASTM D5185m	>2	<1	1	<1
Aluminum ppm ASTM D5185m >30 35 37 76 Lead ppm ASTM D5185m >30 0 <1	Titanium	ppm	ASTM D5185m		0	<1	0
Lead ppm ASTM D5185m >30 0 <1 0 Copper ppm ASTM D5185m >150 42 63 45 Tin ppm ASTM D5185m >5 <1 1 1 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 1 2 2 Barium ppm ASTM D5185m 0 1 2 2 Manganese ppm ASTM D5185m 0 1 1 2 2	Silver	ppm	ASTM D5185m	>3	<1	<1	0
Copper ppm ASTM D5185m >150 42 63 45 Tin ppm ASTM D5185m >5 <1	Aluminum	ppm	ASTM D5185m	>30	35	37	76
Tin	Lead	ppm	ASTM D5185m	>30	0	<1	0
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 3 4 5 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 63 91 58 Manganese ppm ASTM D5185m 0 1 2 2 Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 2600 2601 3657 1187 Sulfur ppm ASTM D5185m 2600 2601 3657<	Copper	ppm	ASTM D5185m	>150	42	63	45
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 3 4 5 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 63 91 58 Mangaese ppm ASTM D5185m 0 1 2 2 Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4	Tin	ppm	ASTM D5185m	>5	<1	1	1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 3 4 5 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 63 91 58 Manganese ppm ASTM D5185m 0 1 2 2 Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 950 1318 1639 1263 Phosphorus ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <td>Vanadium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td><1</td> <td>0</td>	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron ppm ASTM D5185m 2 3 4 5 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 63 91 58 Manganese ppm ASTM D5185m 0 1 2 2 Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 1180 1297 1732 1187 Sulfur ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 ▲ 24 ▲ 29 11 Sodium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % 'ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm 'ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Coxidation Abs/.1mm 'ASTM D7414 >25 24.3 19.6 22.8	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 63 91 58 Manganese ppm ASTM D5185m 0 1 2 2 Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 244 29 11 Sodium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 63 91 58 Manganese ppm ASTM D5185m 0 1 2 2 Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 1091 1386 794 Zinc ppm ASTM D5185m 1180 1297 1732 1187 Sulfur ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 24 29 11 Sodium ppm ASTM D5185m >20 4 4 0 4 Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base	Boron	ppm	ASTM D5185m	2	3	4	5
Manganese ppm ASTM D5185m 0 1 2 2 Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 24 29 11 Sodium ppm ASTM D5185m >20 4 29 11 Sodium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 950 891 1315 881 Calcium ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 1180 1297 1732 1187 Sulfur ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 24 29 11 Sodium ppm ASTM D5185m >20 4 0 4 Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7415 >30	Molybdenum	ppm	ASTM D5185m	50	63	91	58
Calcium ppm ASTM D5185m 1050 1318 1639 1263 Phosphorus ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 1180 1297 1732 1187 Sulfur ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 24 29 11 Sodium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/.1mm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>1</th> <td>2</td> <td>2</td>	Manganese	ppm	ASTM D5185m	0	1	2	2
Phosphorus ppm ASTM D5185m 995 1091 1386 794 Zinc ppm ASTM D5185m 1180 1297 1732 1187 Sulfur ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 24 29 11 Sodium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>950</td> <th>891</th> <td>1315</td> <td>881</td>	Magnesium	ppm	ASTM D5185m	950	891	1315	881
Zinc ppm ASTM D5185m 1180 1297 1732 1187 Sulfur ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 24 29 11 Sodium ppm ASTM D5185m 4 0 4 Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1050	1318	1639	1263
Sulfur ppm ASTM D5185m 2600 2601 3657 1966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 24 29 11 Sodium ppm ASTM D5185m 4 0 4 Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Phosphorus	ppm	ASTM D5185m	995	1091	1386	794
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 ▲ 24 ▲ 29 11 Sodium ppm ASTM D5185m 4 0 4 Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Zinc	ppm	ASTM D5185m	1180	1297	1732	1187
Silicon ppm ASTM D5185m >20 ▲ 24 ▲ 29 11 Sodium ppm ASTM D5185m 4 0 4 Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Sulfur	ppm	ASTM D5185m	2600	2601	3657	1966
Sodium ppm ASTM D5185m 4 0 4 Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 68 75 148 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Silicon	ppm	ASTM D5185m	>20	<u> </u>	<u>^</u> 29	11
INFRA-RED	Sodium	ppm	ASTM D5185m		4	0	4
Soot % % *ASTM D7844 >3 1.3 0.6 0.9 Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Potassium	ppm	ASTM D5185m	>20	68	75	148
Nitration Abs/cm *ASTM D7624 >20 13.5 9.5 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Soot %	%	*ASTM D7844	>3	1.3	0.6	0.9
Sulfation Abs/.1mm *ASTM D7415 >30 26.2 21.7 23.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Nitration	Abs/cm	*ASTM D7624	>20	13.5	9.5	10.9
Oxidation Abs/.1mm *ASTM D7414 >25 24.3 19.6 22.8	Sulfation	Abs/.1mm	*ASTM D7415	>30			23.0
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	24.3	19.6	22.8
	Base Number (BN)	mg KOH/g			5.0	5.9	



OIL ANALYSIS REPORT







Certificate 12367

Laboratory

Sample No.

: PCA0128167 Lab Number : 06235357 Unique Number : 11124191 Test Package : FLEET

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 15 Jul 2024

Tested : 15 Jul 2024

Diagnosed : 15 Jul 2024 - Don Baldridge

US 29697 Contact: Sonny Boucher sboucher@transervice.com T: (864)226-2304

101 Alliance Parkway

Willamston, SC

F: (864)226-2329

Transervice - Shop 1373 - Berkeley-Anderson/Pendergrass

* - 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)