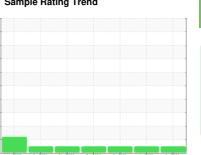


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



FREIGHTLINER 403462

Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

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.

	ARL)		Jan2020	Apr2020 Nov2020	Feb 2021 Oct2021 Jan 2023	Oct2023	
Sample Date Client Info 184910 161163 128962	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 184910 161163 128962 Oil Age mls Client Info O 32201 17000 Oil Changed Client Info Changed Changed NORMAL NEG NEG	Sample Number		Client Info		PCA0098944	PCA0082230	PCA0058648
Machine Age mls Client Info 0 32201 17000	Sample Date		Client Info		09 Oct 2023	09 Jan 2023	30 Oct 2021
Oil Age mls Client Info 0 32201 17000 Oil Changed NORMAL 1.0 4.1 0 1.0 1.0 1.0 1.0 1.0 0 0 0 0 0 0 1.1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	•	mls	Client Info		184910	161163	128962
Oil Changed Sample Status		mls	Client Info		0		
Sample Status	•				-		
Fuel	_				_		Ü
Silycol WC Method NEG NEG NEG	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 1 2 1 Nickel ppm ASTM D5185m >2 <1 <1 0 Titanium ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >30 10 18 14 Lead ppm ASTM D5185m >30 0 0 <1 Copper ppm ASTM D5185m >30 2 4 3 Tin ppm ASTM D5185m >15 <1 2 1 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 2 5 1 3 Barium ppm ASTM D5185m 2 5 1 3 <th>WEAR METALS</th> <th>3</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	WEAR METALS	3	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>200	40	64	40
Titanium ppm ASTM D5185m >2 0 0 <1	Chromium	ppm	ASTM D5185m	>20	1	2	1
Silver	Nickel	ppm	ASTM D5185m	>2		<1	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	0	<1
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >30 2 4 3 Tin ppm ASTM D5185m >15 <1 2 1 Antimony ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 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 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 1 <1 1 1 Magnesium ppm ASTM D5185m 0 0 1 <1 1 1 1 1 1 1 1 16 1 1 1 1 1 1 1 1 1 </th <th>Aluminum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>30</th> <th>10</th> <th>18</th> <th>14</th>	Aluminum	ppm	ASTM D5185m	>30	10	18	14
Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>30	0	0	<1
Antimony ppm ASTM D5185m 0 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 1 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 65 65 66 Manganese ppm ASTM D5185m 0 0 1 <1	Copper	ppm	ASTM D5185m	>30	2	4	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 1 3 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 65 65 66 Magnesium ppm ASTM D5185m 0 0 1 <1	Tin	ppm	ASTM D5185m	>15	<1	2	1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 5 1 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 65 66 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 845 1009 1005 Calcium ppm ASTM D5185m 950 845 1009 1005 Calcium ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current	Antimony	ppm	ASTM D5185m				0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 5 1 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 65 66 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 845 1009 1005 Calcium ppm ASTM D5185m 1050 1039 1271 1176 Phosphorus ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m >20	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 65 65 66 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 845 1009 1005 Calcium ppm ASTM D5185m 1050 1039 1271 1176 Phosphorus ppm ASTM D5185m 1050 1039 1271 1176 Phosphorus ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D518	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 65 65 66 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 845 1009 1005 Calcium ppm ASTM D5185m 1050 1039 1271 1176 Phosphorus ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m >20 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base cur	Boron	ppm	ASTM D5185m	2	5	1	3
Manganese ppm ASTM D5185m 0 0 1 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 950 845 1009 1005 Calcium ppm ASTM D5185m 1050 1039 1271 1176 Phosphorus ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 1180 1125 1279 1247 Sulfur ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION *astm D	Molybdenum	ppm	ASTM D5185m	50	65	65	66
Calcium ppm ASTM D5185m 1050 1039 1271 1176 Phosphorus ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 1180 1125 1279 1247 Sulfur ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m >0 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION imit/base	Manganese	ppm	ASTM D5185m	0	0	1	<1
Phosphorus ppm ASTM D5185m 995 916 1028 1000 Zinc ppm ASTM D5185m 1180 1125 1279 1247 Sulfur ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m >30 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/.mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION *ASTM D7414 >25 21.5 27.6 20.8	Magnesium	ppm	ASTM D5185m	950	845	1009	1005
Zinc ppm ASTM D5185m 1180 1125 1279 1247 Sulfur ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m 0 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1050	1039	1271	1176
Sulfur ppm ASTM D5185m 2600 2814 3137 2768 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m 0 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8	Phosphorus	ppm	ASTM D5185m	995	916	1028	1000
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m 0 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8		ppm	ASTM D5185m	1180	1125	1279	1247
Silicon ppm ASTM D5185m >30 4 6 4 Sodium ppm ASTM D5185m 0 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8			ASTM D5185m	2600	2814		
Sodium ppm ASTM D5185m 0 5 3 Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 5 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8				>30			
INFRA-RED	Sodium	ppm	ASTM D5185m		0	5	3
Soot % % *ASTM D7844 >3 1 1.5 1 Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8	Potassium	ppm	ASTM D5185m	>20	5	0	7
Nitration Abs/cm *ASTM D7624 >20 13.0 16.3 12.9 Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 24.2 29.7 24.7 FLUID DEGRADATION method limit/base current history1 history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8	Soot %	%	*ASTM D7844	>3	1	1.5	1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.5 27.6 20.8	Nitration	Abs/cm	*ASTM D7624	>20	13.0	16.3	12.9
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	24.2	29.7	24.7
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 5.7 5.4	Oxidation	Abs/.1mm	*ASTM D7414	>25	21.5	27.6	20.8
	Base Number (BN)	mg KOH/g	ASTM D2896		5.7	5.4	



OIL ANALYSIS REPORT







Certificate L2367

Laboratory Sample No. Lab Number

Unique Number

: 05981034 : 10698329

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : PCA0098944 Diagnosed

: 17 Oct 2023 : 17 Oct 2023 Diagnostician : Wes Davis

Test Package : MOB 1 (Additional Tests: TBN)

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. **MILLER TRUCK LEASING #112**

1504 MAINLINE DR CINNAMINSON, NJ US 08077

Contact: MIKE BOYER mboyer@millertransgroup.com

> T: (856)662-4264 F: (856)663-4898

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)