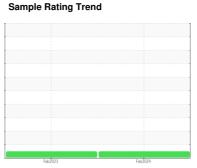


OIL ANALYSIS REPORT



NORMAL



Machine Id **228296**

Component **Diesel Engine**

PETRO CANADA DURON SHP 10W30 (--- 0

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

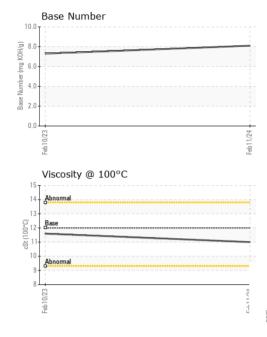
Fluid Condition

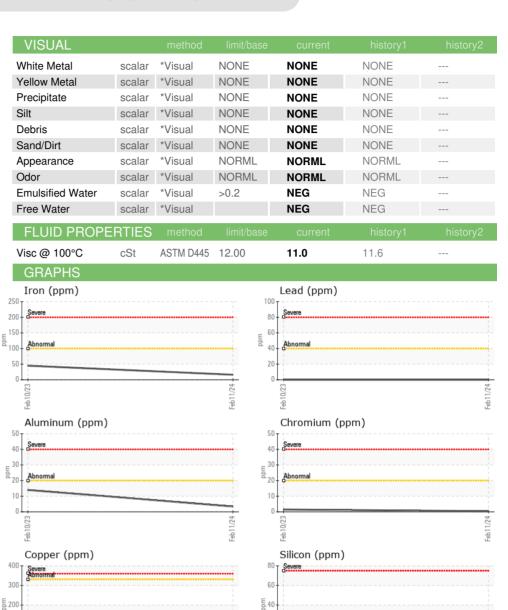
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date Client Info 11 Feb 2024 10 Feb 2023	OTS)			Feb 2023	Feb2024		
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age mis Client Info 129510 57916	Sample Number		Client Info		PCA0110663	PCA0083842	
Oil Age mls Client Info 18471 57916	Sample Date		Client Info		11 Feb 2024	10 Feb 2023	
Cilient Info Not Changed Changed Changed Changed NORMAL NORMAL CONTAMINATION Method So	Machine Age	mls	Client Info		129510	57916	
CONTAMINATION	Oil Age	mls	Client Info		18471	57916	
Fuel	Oil Changed		Client Info		Not Changd	Changed	
Fuel	Sample Status				NORMAL	NORMAL	
Water WC Method So.2 NEG N	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 16 45 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	
Irron	Glycol		WC Method		NEG	NEG	
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	16	45	
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	2	
Silver	Nickel	ppm	ASTM D5185m	>4	<1	<1	
Aluminum ppm ASTM D5185m >20 3 14 Lead ppm ASTM D5185m >40 0 0 Copper ppm ASTM D5185m >330 2 18 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 0 <1	Titanium	ppm	ASTM D5185m		2	13	
Lead	Silver	ppm	ASTM D5185m	>3	0	0	
Copper ppm ASTM D5185m >330 2 18 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 <1	Aluminum	ppm	ASTM D5185m	>20	3	14	
Tin	Lead	ppm	ASTM D5185m	>40	0	0	
Vanadium ppm ASTM D5185m 0 <1 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 2 10 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 50 62 20 Manganese ppm ASTM D5185m 50 62 20 Magnesium ppm ASTM D5185m 950 1079 316 Calcium ppm ASTM D5185m 950 1079 316 Phosphorus ppm ASTM D5185m 905 1159 451 Zinc ppm ASTM D5185m 1180 1395 585 Sulfur ppm ASTM D5185m 2600 3486 1290 </td <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <th>2</th> <td>18</td> <td></td>	Copper	ppm	ASTM D5185m	>330	2	18	
Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 2 10 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 50 62 20 Manganese ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	0	2	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 2 10 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 50 62 20 Manganese ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		0	<1	
Boron	Cadmium	ppm	ASTM D5185m		0	0	
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 50 62 20 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 62 20 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	2	2	10	
Manganese ppm ASTM D5185m 0 <1 3 Magnesium ppm ASTM D5185m 950 1079 316 Calcium ppm ASTM D5185m 1050 1253 905 Phosphorus ppm ASTM D5185m 995 1159 451 Zinc ppm ASTM D5185m 1180 1395 585 Sulfur ppm ASTM D5185m 2600 3486 1290 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m 20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20	Barium	ppm	ASTM D5185m	0	0	0	
Magnesium ppm ASTM D5185m 950 1079 316 Calcium ppm ASTM D5185m 1050 1253 905 Phosphorus ppm ASTM D5185m 995 1159 451 Zinc ppm ASTM D5185m 1180 1395 585 Sulfur ppm ASTM D5185m 2600 3486 1290 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30	Molybdenum	ppm	ASTM D5185m	50	62	20	
Calcium ppm ASTM D5185m 1050 1253 905 Phosphorus ppm ASTM D5185m 995 1159 451 Zinc ppm ASTM D5185m 1180 1395 585 Sulfur ppm ASTM D5185m 2600 3486 1290 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION *ASTM D7414 >25 16	Manganese	ppm	ASTM D5185m	0	<1	3	
Phosphorus ppm ASTM D5185m 995 1159 451 Zinc ppm ASTM D5185m 1180 1395 585 Sulfur ppm ASTM D5185m 2600 3486 1290 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base </td <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>950</td> <th>1079</th> <td>316</td> <td></td>	Magnesium	ppm	ASTM D5185m	950	1079	316	
Zinc ppm ASTM D5185m 1180 1395 585 Sulfur ppm ASTM D5185m 2600 3486 1290 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1050	1253	905	
Sulfur ppm ASTM D5185m 2600 3486 1290 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	Phosphorus	ppm	ASTM D5185m	995	1159		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	Zinc	ppm	ASTM D5185m	1180	1395	585	
Silicon ppm ASTM D5185m >25 4 8 Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	Sulfur	ppm	ASTM D5185m	2600	3486	1290	
Sodium ppm ASTM D5185m 2 4 Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 26 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	Silicon	ppm	ASTM D5185m	>25	4	8	
INFRA-RED	Sodium	ppm	ASTM D5185m		2	4	
Soot % % *ASTM D7844 >3 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	Potassium	ppm	ASTM D5185m	>20	2	26	
Nitration Abs/cm *ASTM D7624 >20 9.0 13.4 Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.0 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	Soot %	%	*ASTM D7844	>3	0.3	0.7	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 26.9	Nitration	Abs/cm	*ASTM D7624	>20	9.0	13.4	
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	26.5	
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.1 7.3	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	26.9	
	Base Number (BN)	mg KOH/g	ASTM D2896		8.1	7.3	



OIL ANALYSIS REPORT









Certificate L2367

Laboratory Sample No. Lab Number

Unique Number: 10910462

100

100

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0110663 : 06106965

Viscosity @ 100°C

Received **Tested** Diagnosed Test Package : MOB 1 (Additional Tests: TBN)

: 05 Mar 2024

: 05 Mar 2024 - Wes Davis

Feb11/24

: 04 Mar 2024

Base Number

10.0 (mg KOH/g)

4.0 Base No 0.0

> **66 KELLER AVENUE** LANCASTER, PA US 17601

Contact: RON ROBERTS rroberts@millertransgroup.com T: (717)945-6205

MILLER TRUCK LEASING #123

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) F: (717)945-5818