

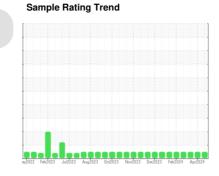
OIL ANALYSIS REPORT



MONTGOMERY Machine 1d MACK 420042

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- LTR)







DIAGNOSIS

Recommendation

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

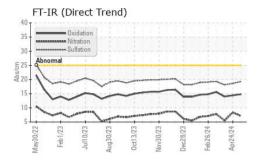
Fluid Condition

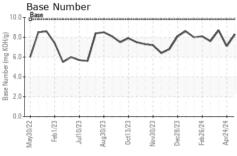
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

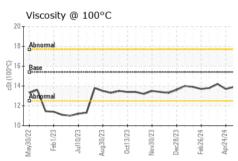
Sample Date Client Info 10 May 2024 24 Apr 2024 04 Apr 2024 Machine Age hrs Client Info 9727 9593 9446 001 Age hrs Client Info 1000 866 719 Not Changd Not Changd Not Changd NoRMAL NO	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 9727 9593 9446 Oil Age hrs Client Info 1000 866 719 Oil Changed Client Info Not Changd NoRMAL 1.0 <1.0	Sample Number		Client Info		GFL0088017	GFL0118439	GFL0083558
Oil Age hrs Client Info 1000 866 719 Oil Changed Sample Status Client Info Not Changd Not Changd Not Changd Not Changd Not Changd NoRMAL Not Changd NoRMAL NoRMAL <th< td=""><td>Sample Date</td><td></td><td>Client Info</td><td></td><th>10 May 2024</th><td>24 Apr 2024</td><td>04 Apr 2024</td></th<>	Sample Date		Client Info		10 May 2024	24 Apr 2024	04 Apr 2024
Oil Changed Client Info Not Changd Nort Changd NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		9727	9593	9446
Oil Changed Client Info Not Changd Nort Changd NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		1000	866	719
CONTAMINATION	•						
Fuel			001160		_	Ŭ	
Water Glycol WC Method >0.2 NEG	·	TION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2		NFG	NFG
Pron	Glycol			, , , ,			
Pron	WEAR METAL	LS	method	limit/base	current	historv1	historv2
Chromium ppm ASTM D5185m >20 -1 -1 0 Nickel ppm ASTM D5185m >5 -1 -1 0 Titanium ppm ASTM D5185m >2 -1 -1 0 Silver ppm ASTM D5185m >2 -1 -1 0 Aluminum ppm ASTM D5185m >20 2 3 0 Lead ppm ASTM D5185m >40 -1 2 0 Copper ppm ASTM D5185m >330 3 1 0 Tin ppm ASTM D5185m >15 1 1 -1 -1 0 Cadmium ppm ASTM D5185m <-1							
Nickel							
Titanium							
Silver							
Aluminum							
Lead							
Copper ppm ASTM D5185m >330 3 1 0 Tin ppm ASTM D5185m >15 1 1 <1	Aluminum	ppm	ASTM D5185m	>20	2		0
Tin	Lead	ppm	ASTM D5185m	>40	<1	2	0
Vanadium ppm ASTM D5185m <1 <1 0 Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 64 57 Manganese ppm ASTM D5185m 0 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 898 973 924 Calcium ppm ASTM D5185m 1070 1031 1105 1026 Phosphorus ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current <th< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>>330</td><th>3</th><td>1</td><td>0</td></th<>	Copper	ppm	ASTM D5185m	>330	3	1	0
Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 <1	Tin	ppm	ASTM D5185m	>15	1	1	<1
Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 898 973 924 Calcium ppm ASTM D5185m 1070 1031 1105 1026 Phosphorus ppm ASTM D5185m 1150 1035 1144 996 Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base curr	Vanadium	ppm	ASTM D5185m		<1	<1	0
Boron	Cadmium	ppm	ASTM D5185m		<1	<1	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 64 57 Manganese ppm ASTM D5185m 0 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 58 64 57 Manganese ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 898 973 924 Calcium ppm ASTM D5185m 1070 1031 1105 1026 Phosphorus ppm ASTM D5185m 1150 1035 1144 996 Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % *6 **ASTM D7844 >4	Boron	ppm	ASTM D5185m	0	2	1	3
Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 1010 898 973 924 Calcium ppm ASTM D5185m 1070 1031 1105 1026 Phosphorus ppm ASTM D5185m 1150 1035 1144 996 Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m >20 2 4 0 Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 898 973 924 Calcium ppm ASTM D5185m 1070 1031 1105 1026 Phosphorus ppm ASTM D5185m 1150 1035 1144 996 Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m >20 2 4 0 Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm "ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	58	64	57
Calcium ppm ASTM D5185m 1070 1031 1105 1026 Phosphorus ppm ASTM D5185m 1150 1035 1144 996 Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m >20 2 4 0 Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.7 0.2 Nitration Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION *ASTM D7414 >	Manganese	ppm	ASTM D5185m	0	0	0	<1
Calcium ppm ASTM D5185m 1070 1031 1105 1026 Phosphorus ppm ASTM D5185m 1150 1035 1144 996 Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m >20 2 4 0 Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.7 0.2 Nitration Abs/cm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION	Magnesium	ppm	ASTM D5185m	1010	898	973	924
Phosphorus ppm ASTM D5185m 1150 1035 1144 996 Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m 3 2 <1	Calcium	ppm	ASTM D5185m	1070	1031	1105	1026
Zinc ppm ASTM D5185m 1270 1241 1280 1166 Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m 3 2 <1	Phosphorus				1035	1144	996
Sulfur ppm ASTM D5185m 2060 3133 3162 3215 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m 3 2 <1							
Silicon ppm ASTM D5185m >25 4 6 3 Sodium ppm ASTM D5185m 3 2 <1 Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.7 0.2 Nitration Abs/cm *ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0	Sulfur						
Sodium ppm ASTM D5185m 3 2 <1 Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.7 0.2 Nitration Abs/cm *ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0	CONTAMINA	NTS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 3 2 <1 Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.7 0.2 Nitration Abs/cm *ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0	Silicon	ppm	ASTM D5185m	>25	4	6	3
Potassium ppm ASTM D5185m >20 2 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.7 0.2 Nitration Abs/cm *ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0							
Soot % % *ASTM D7844 >4 0.4 0.7 0.2 Nitration Abs/cm *ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0	Potassium			>20			
Nitration Abs/cm *ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 7.1 8.4 5.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0	Soot %	%	*ASTM D7844	>4	0.4	0.7	
Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0	Sulfation						
Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.4 14.0							
			*ASTM D7/1/	>25	14.8	144	14 0
	Ολιματίσι Ι	Un9/*111111	AO 1101 D7414	120	17.0	17.7	14.0



OIL ANALYSIS REPORT



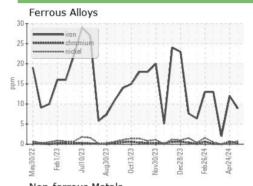


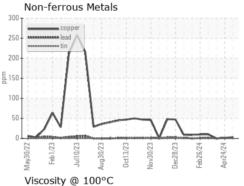


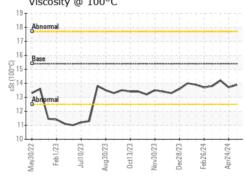
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

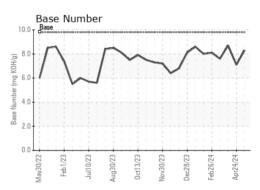
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.7	14.2

GRAPHS













Certificate 12367

Laboratory Sample No.

Test Package : FLEET

: GFL0088017 Lab Number : 06178544 Unique Number : 11029870

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested**

: 15 May 2024 Diagnosed : 15 May 2024 - Wes Davis

: 14 May 2024

GFL Environmental - 955 - Montgomery 1121 Wilbanks St Montgomery, AL US 36108

Contact: LISA REEVES

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)

Report Id: GFL955 [WUSCAR] 06178544 (Generated: 05/15/2024 12:52:33) Rev: 1

Submitted By: Lisa Reeves

T:

F: