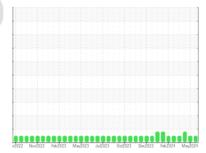


OIL ANALYSIS REPORT

Sample Rating Trend









MONTGOMERY MACK 928112

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

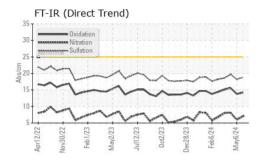
Fluid Condition

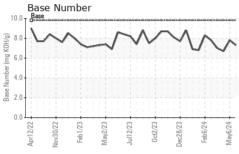
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

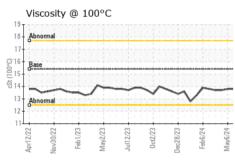
Sample Date Client Info 20 May 2024 12 Apr 2024 13 Apr 2024 14 Apr 2024	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 14966 14844 17168 17168 14969 hrs Client Info 14966 14844 3002 Changed Colient Info 14966 14844 3002 Changed North Changd North Changd North Changed North Changed	Sample Number		Client Info		GFL0088008	GFL0118427	GFL0083572
Dil Age	Sample Date		Client Info		20 May 2024	06 May 2024	12 Apr 2024
Cilient Info	Machine Age	hrs	Client Info		14966	14844	17168
NORMAL NORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 history2	Oil Age	hrs	Client Info		14966	14844	3002
NORMAL NORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 history2	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Fuel WC Method	Sample Status					Ü	ABNORMAL
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imitibase Current history1 history2 WEAR METALS method limitibase current history1 history2 Iron ppm ASTM D5185m >120 12 8 14 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 10 8 △ 26 Lead ppm ASTM D5185m >20 10 8 △ 26 Copper ppm ASTM D5185m >40 <1 <1 0 0 Capper ppm ASTM D5185m >10 0 0 0 0 Vanadium ppm	CONTAMINA	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	NEG	NEG	NEG
Pron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>WEAR METAI</td> <td>LS</td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	WEAR METAI	LS	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >5 0 0 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 0 Aluminum ppm ASTM D5185m >2 0 10 8	Iron	ppm	ASTM D5185m	>120	12	8	14
Nickel ppm ASTM D5185m >5 0 0 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 0 Aluminum ppm ASTM D5185m >2 0 10 8	Chromium		ASTM D5185m	>20	<1	<1	<1
Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >20 10 8 ▲ 26 Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 0 0 <1 Tin ppm ASTM D5185m 15 <1 0 0 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	Nickel						
Silver							
Aluminum ppm ASTM D5185m >20 10 8 ▲ 26 Lead ppm ASTM D5185m >40 <1					_		
Lead							
Copper ppm ASTM D5185m >330 0 0 <1 Tin ppm ASTM D5185m >15 <1							
Tin							
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 2 0 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 60 62 60 64 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1070 1012 1088 1121 Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base					_		
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1				>15			
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 62 60 64 Manganese ppm ASTM D5185m 1010 942 1014 925 Calcium ppm ASTM D5185m 1070 1012 1088 1121 Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m 2							
Boron		ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 62 60 64 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 942 1014 925 Calcium ppm ASTM D5185m 1070 1012 1088 1121 Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/bas	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 62 60 64 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 942 1014 925 Calcium ppm ASTM D5185m 1070 1012 1088 1121 Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Boron						
Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 942 1014 925 Calcium ppm ASTM D5185m 1070 1012 1088 1121 Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m >20 5 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 942 1014 925 Calcium ppm ASTM D5185m 1070 1012 1088 1121 Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m >20 5 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 <td>Molybdenum</td> <td>ppm</td> <td></td> <td></td> <th>62</th> <td>60</td> <td>64</td>	Molybdenum	ppm			62	60	64
Calcium ppm ASTM D5185m 1070 1012 1088 1121 Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m >20 5 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION *ASTM D7414 <t< td=""><td>Manganese</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><th><1</th><td><1</td><td>0</td></t<>	Manganese	ppm	ASTM D5185m	0	<1	<1	0
Phosphorus ppm ASTM D5185m 1150 1034 1095 1086 Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m >20 5 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION *A	Magnesium	ppm	ASTM D5185m	1010	942	1014	925
Zinc ppm ASTM D5185m 1270 1214 1309 1259 Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m >20 5 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <t< td=""><td>Calcium</td><td>ppm</td><td>ASTM D5185m</td><td>1070</td><th>1012</th><td>1088</td><td>1121</td></t<>	Calcium	ppm	ASTM D5185m	1070	1012	1088	1121
Sulfur ppm ASTM D5185m 2060 3195 3713 2798 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m 6 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Phosphorus	ppm	ASTM D5185m	1150	1034	1095	1086
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m 6 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Zinc	ppm	ASTM D5185m	1270	1214	1309	1259
Silicon ppm ASTM D5185m >25 6 6 7 Sodium ppm ASTM D5185m 6 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Sulfur	ppm	ASTM D5185m	2060	3195	3713	2798
Sodium ppm ASTM D5185m 6 4 11 Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 5 4 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Silicon	ppm	ASTM D5185m	>25	6	6	7
INFRA-RED	Sodium	ppm	ASTM D5185m		6	4	11
Soot % *ASTM D7844 >4 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Potassium	ppm	ASTM D5185m	>20	5	4	22
Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 7.0 6.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Soot %	%	*ASTM D7844	>4	0.6	0.4	0.4
Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.2 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Nitration						
Oxidation Abs/.1mm *ASTM D7414 >25 14.2 13.8 15.6	Sulfation						
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	TEOID DEGILIA						
			*ASTM D7414	>25	14.2	13.8	15.6



OIL ANALYSIS REPORT



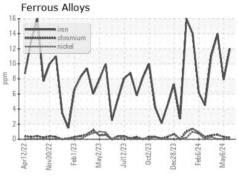


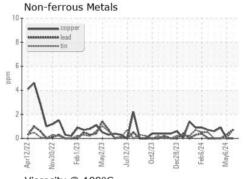


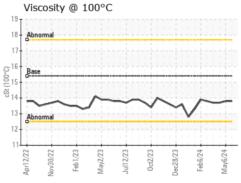
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

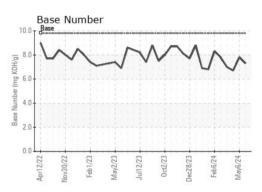
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.8	13.7

GRAPHS













Certificate 12367

Laboratory Sample No. Unique Number : 11043931

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0088008 Lab Number : 06187179

Received **Tested** Diagnosed

: 21 May 2024 : 23 May 2024 : 23 May 2024 - Wes Davis

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] 06187179 (Generated: 05/23/2024 01:25:08) Rev: 1

Submitted By: Lisa Reeves

T:

F: