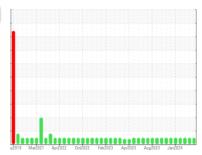


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 10949 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (13 GAL)

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

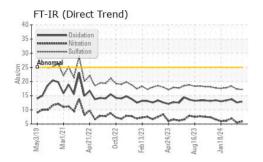
Fluid Condition

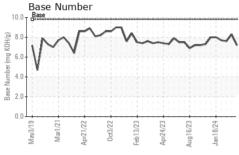
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

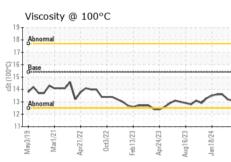
Sample Number Client Info GFL0115678 GFL0115758 GFL0112290 Sample Date Client Info 12 Apr 2024 22 Mar 2024 20 Feb 2024 Machine Age hrs Client Info 14542 14364 14166 S96 398 S96 S98 S98 S96 S98 S96 S98 S98 S96 S98 S98 S96 S98 S96 S98 S96 S98 S96 S96	SAMPLE INFORMA	ATION	method	limit/base	current	history1	history2
Client Info							•
Machine Age hrs Client Info 14542 14364 14166 398							
Oil Changed	·	hrs			•		
Colient Info							
CONTAMINATION	-	1110			-		
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	-		Olioni inio			Ü	
Fuel	<u>_</u>	NC	method	limit/base			
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 >75 6 7 13 Chromium ppm ASTM D5185m >4 0 0 0 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >2 0 0 0 Caded ppm ASTM D5185m >4 0 0 <1							
WEAR METALS							
WEAR METALS				70. L	-		
Irron				li.ee:t/le = = =			
Chromium ppm ASTM D5185m >5 0 <1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >2 0 0 <1							
Nickel	- '						
Titanium					-		
Silver							
Aluminum ppm ASTM D5185m >15 1 2 2 Lead ppm ASTM D5185m >25 0 0 0 Copper ppm ASTM D5185m >100 0 <1					-		
Lead	, i						
Copper ppm ASTM D5185m >100 0 <1 <1 Tin ppm ASTM D5185m >4 0 0 <1							
Tin		ppm					
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 11 14 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 829 911 859 Calcium ppm ASTM D5185m 1070 1028 1093 1021 Phosphorus ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1<		ppm					
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 11 14 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 <1	'			>4			
ADDITIVES	T SALL SALL SALL SALL SALL SALL SALL SAL	ppm					
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0	'	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 62 60 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 829 911 859 Calcium ppm ASTM D5185m 1070 1028 1093 1021 Phosphorus ppm ASTM D5185m 1150 953 987 952 Zinc ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m >20 0 0 0 INFRA-RED m	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 58 62 60 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 829 911 859 Calcium ppm ASTM D5185m 1070 1028 1093 1021 Phosphorus ppm ASTM D5185m 1150 953 987 952 Zinc ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7814 >6 <td>Boron</td> <td>ppm</td> <td></td> <td></td> <th></th> <td>11</td> <td></td>	Boron	ppm				11	
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 829 911 859 Calcium ppm ASTM D5185m 1070 1028 1093 1021 Phosphorus ppm ASTM D5185m 1150 953 987 952 Zinc ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624	Barium p	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 829 911 859 Calcium ppm ASTM D5185m 1070 1028 1093 1021 Phosphorus ppm ASTM D5185m 1150 953 987 952 Zinc ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m 20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/cm *ASTM D7415 <td>Molybdenum</td> <td>ppm</td> <td></td> <td></td> <th>58</th> <td>62</td> <td>60</td>	Molybdenum	ppm			58	62	60
Calcium ppm ASTM D5185m 1070 1028 1093 1021 Phosphorus ppm ASTM D5185m 1150 953 987 952 Zinc ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m >20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION <	Manganese p	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus ppm ASTM D5185m 1150 953 987 952 Zinc ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m >20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method	Magnesium	ppm	ASTM D5185m	1010	829	911	859
Zinc ppm ASTM D5185m 1270 1111 1168 1129 Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m 20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Calcium	ppm	ASTM D5185m	1070	1028	1093	1021
Sulfur ppm ASTM D5185m 2060 3026 3505 2773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m >20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	Phosphorus p	ppm				987	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m 1 3 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	Zinc	ppm	ASTM D5185m	1270	1111	1168	1129
Silicon ppm ASTM D5185m >25 10 4 1 Sodium ppm ASTM D5185m 1 3 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7			ASTM D5185m	2060	3026	3505	2773
Sodium ppm ASTM D5185m 1 3 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	Silicon	ppm	ASTM D5185m	>25	10	4	1
INFRA-RED	Sodium	ppm	ASTM D5185m		1	3	4
Soot % % *ASTM D7844 >6 0.2 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	Potassium	ppm	ASTM D5185m	>20	0	0	0
Nitration Abs/cm *ASTM D7624 >20 5.9 5.5 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.2 17.3 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	Soot %	%	*ASTM D7844	>6	0.2	0.2	0.2
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 12.6 13.7	Nitration /	Abs/cm	*ASTM D7624	>20	5.9	5.5	7.0
Oxidation	Sulfation /	Abs/.1mm	*ASTM D7415	>30	17.2	17.3	18.4
	FLUID DEGRADA	NOITA	method	limit/base	current	history1	history2
	Oxidation /	Abs/.1mm	*ASTM D7414	>25	12.9	12.6	13.7
	Base Number (BN)	mg KOH/g			7.2		



OIL ANALYSIS REPORT



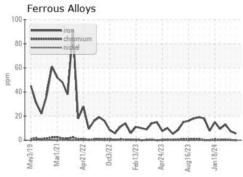


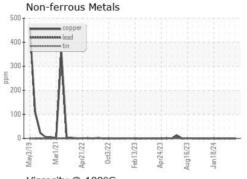


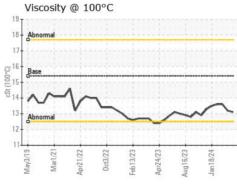
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

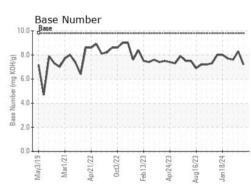
FLUID PROPI	ERHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.2	13.6

GRAPHS













Certificate 12367

Laboratory Sample No. : GFL0115678 Lab Number : 06148234

Unique Number : 10978312 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 15 Apr 2024 **Tested** : 16 Apr 2024

Diagnosed : 16 Apr 2024 - Wes Davis

GFL Environmental - 010 - Stockbridge

1280 Rum Creek Parkway Stockbridge, GA

US 30281

Contact: JOSHUA TINKER joshuatinker@gflenv.com

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: GFL010 [WUSCAR] 06148234 (Generated: 04/16/2024 05:02:21) Rev: 1

Submitted By: JOSHUA TINKER

T:

F: