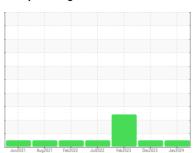


OIL ANALYSIS REPORT

Sample Rating Trend







Mac 46 Com Die Fluid PE

Machine Id
4636M
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (--- 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

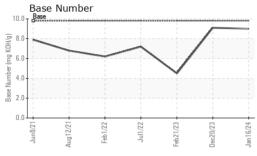
Fluid Condition

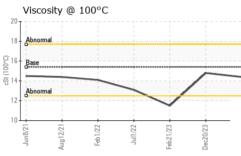
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0108698 GFL0105867 GFL0073842 Sample Date Client Info 16 Jan 2024 20 Dec 2023 21 Feb 2023 Machine Age hrs Client Info 19228 19228 17354 Oil Changed Client Info 19228 19228 17354 Oil Changed Sample Status Client Info Changed NoRMAL NORMAL SEVERE CONTAMINATION method Imilibase current history1 history2 Fuel WC Method >0.2 NEG NEG NEG WEAR METALS method Imilibase current history1 history2 Iron ppm ASTM D5185m >0 4 0 51 Chromium ppm ASTM D5185m >2 0 0 2 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 20550 20550 19228 Oil Age hrs Client Info 19228 19228 17354 Oil Changed Client Info Changed Not Changed Changed Changed Sample Status NoRMAL NORMAL NORMAL SEVERE CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 0.3 15.4 NEG Water WC Method NEG NEG NEG NEG NEG Glycol WC Method Imitibase current history1 history2 Iron Ppm ASTM D5185m >90 4 0 51 WEAR METALS method limit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 0 0 <tr< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>GFL0108698</th><th>GFL0105867</th><th>GFL0073842</th></tr<>	Sample Number		Client Info		GFL0108698	GFL0105867	GFL0073842
Oil Age hrs Client Info 19228 19228 17354 Oil Changed Sample Status Client Info Changed Not Changed Not Changed Changed Sample Status NORMAL NORMAL NORMAL SEVERE CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Sample Date		Client Info		16 Jan 2024	20 Dec 2023	21 Feb 2023
Oil Changed Sample Status Client Info Changed NORMAL Not Changed NORMAL Changed Severe CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >3.0 <1.0 0.3 ● 15.4 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 4 0 51 Chromium ppm ASTM D5185m >20 0 0 2 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >40 0 0 <1 1 1 Lead ppm ASTM D5185m >330 0 <1 </th <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>20550</th> <th>20550</th> <th>19228</th>	Machine Age	hrs	Client Info		20550	20550	19228
Oil Changed Sample Status Client Info Changed NORMAL Not Changed NORMAL Changed Severe CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >3.0 <1.0 0.3 ● 15.4 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >90 4 0 51 Chromium ppm ASTM D5185m >20 0 0 2 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >40 0 0 <1 1 Copper ppm ASTM D5185m >330 0 <1 >1<	Oil Age	hrs	Client Info		19228	19228	17354
NORMAL NORMAL SEVERE			Client Info		Changed	Not Changd	Changed
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 0.3 15.4 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 4 0 51 Chromium ppm ASTM D5185m >20 0 0 2 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >0 0 <1 <1 Copper ppm ASTM D5185m >330 0 <1 <1 Vanadium ppm ASTM D5185m >330 0 <1 <1	Sample Status				NORMAL	NORMAL	SEVERE
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WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 4 0 51 Chromium ppm ASTM D5185m >20 0 0 2 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >20 <1 <1 1 Lead ppm ASTM D5185m >20 <1 <1 1 Copper ppm ASTM D5185m >20 <1 <1 0 <1 <1 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
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Nickel		• •					
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Aluminum							
Lead ppm ASTM D5185m >40 0 0 <1		• •			-		
Copper ppm ASTM D5185m >330 0 <1							
Tin ppm ASTM D5185m >15 0 0 <1							
Vanadium ppm ASTM D5185m <1					-		
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 4 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 57 60 49 Manganese ppm ASTM D5185m 0 <1				>15	-		
ADDITIVES							
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Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 986 950 734 Calcium ppm ASTM D5185m 1070 989 1007 878 Phosphorus ppm ASTM D5185m 1150 1077 1132 808 Zinc ppm ASTM D5185m 1270 1273 1266 997 Sulfur ppm ASTM D5185m 2060 3266 3262 2364 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 5 Sodium ppm ASTM D5185m 1 2 5 Potassium ppm ASTM D5185m >20 1 <1	Molybdenum	ppm	ASTM D5185m	60	57	60	49
Calcium ppm ASTM D5185m 1070 989 1007 878 Phosphorus ppm ASTM D5185m 1150 1077 1132 808 Zinc ppm ASTM D5185m 1270 1273 1266 997 Sulfur ppm ASTM D5185m 2060 3266 3262 2364 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 5 Sodium ppm ASTM D5185m >20 1 <1 2 Potassium ppm ASTM D5185m >20 1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 4.6 4.2 16.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION metho	•	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1077 1132 808 Zinc ppm ASTM D5185m 1270 1273 1266 997 Sulfur ppm ASTM D5185m 2060 3266 3262 2364 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 5 Sodium ppm ASTM D5185m >20 1 <1 2 Potassium ppm ASTM D5185m >20 1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 0 1.1 Nitration Abs/.mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *	Magnesium	ppm	ASTM D5185m	1010	986	950	734
Zinc ppm ASTM D5185m 1270 1273 1266 997 Sulfur ppm ASTM D5185m 2060 3266 3262 2364 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 5 Sodium ppm ASTM D5185m >20 1 2 5 Potassium ppm ASTM D5185m >20 1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % "ASTM D7844 >6 0.1 0 1.1 Nitration Abs/cm "ASTM D7624 >20 4.6 4.2 16.7 Sulfation Abs/.1mm "ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm "ASTM	Calcium	ppm	ASTM D5185m	1070	989	1007	878
Sulfur ppm ASTM D5185m 2060 3266 3262 2364 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 5 Sodium ppm ASTM D5185m >20 1 2 5 Potassium ppm ASTM D5185m >20 1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 0 1.1 Nitration Abs/cm *ASTM D7624 >20 4.6 4.2 16.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 12.8 33.6	Phosphorus	ppm	ASTM D5185m	1150	1077	1132	808
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 5 Sodium ppm ASTM D5185m 1 2 5 Potassium ppm ASTM D5185m >20 1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 0 1.1 Nitration Abs/cm *ASTM D7624 >20 4.6 4.2 16.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 12.8 33.6	Zinc	ppm	ASTM D5185m	1270	1273	1266	997
Silicon ppm ASTM D5185m >25 3 5 5 Sodium ppm ASTM D5185m 1 2 5 Potassium ppm ASTM D5185m >20 1 <1			ASTM D5185m	2060	3266	3262	2364
Sodium ppm ASTM D5185m 1 2 5 Potassium ppm ASTM D5185m >20 1 <1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 1 <1	Silicon	ppm	ASTM D5185m	>25	3	5	5
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 0 1.1 Nitration Abs/cm *ASTM D7624 >20 4.6 4.2 16.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 12.8 33.6	Sodium	ppm	ASTM D5185m		1	2	5
Soot % % *ASTM D7844 >6 0.1 0 1.1 Nitration Abs/cm *ASTM D7624 >20 4.6 4.2 16.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 12.8 33.6	Potassium	ppm	ASTM D5185m	>20	1	<1	2
Nitration Abs/cm *ASTM D7624 >20 4.6 4.2 16.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current bistory1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 12.8 33.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 12.8 33.6	Soot %	%	*ASTM D7844	>6	0.1	0	1.1
Sulfation Abs/.1mm *ASTM D7415 >30 17.4 17.1 27.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 12.8 33.6	Nitration	Abs/cm	*ASTM D7624	>20	4.6	4.2	16.7
Oxidation	Sulfation		*ASTM D7415	>30		17.1	27.6
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
			*******	05		100	00.0
	Oxidation	Abs/.1mm	^ASTM D/414	>25	13.2	12.8	33.6



OIL ANALYSIS REPORT

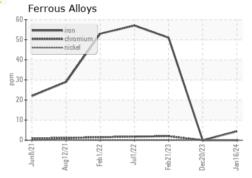


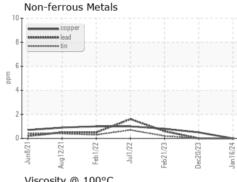


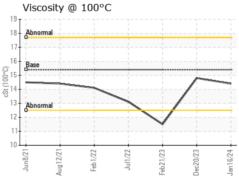
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

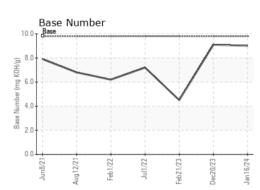
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	14.8	▲ 11.5

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

: GFL0108698 : 06064833 Unique Number : 10836215

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 18 Jan 2024 Diagnosed

: 19 Jan 2024 Diagnostician : Wes Davis

GFL Environmental - 415 - Michigan East 6200 Elmridge

Sterling Heights, MI US 48313 Contact: Frank Wolak fwolak@gflenv.com T: (586)825-9514

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)