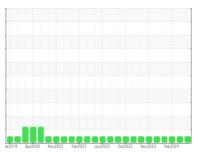


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



428059-402379

Component

Diesel Engine

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

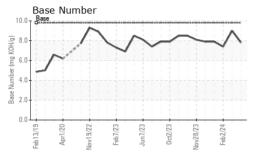
Fluid Condition

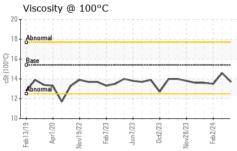
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method imitibase current history1 history2	## ## ## ## ## ## ## ## ## ## ## ## ##						
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 400 200 600 Oil Age hrs Client Info 400 200 600 Oil Changed Client Info 400 200 600 Sample Status Immitted NoRMAL NORMAL NORMAL CONTAMINATION method Immitted current history1 history2 Fuel WC Method >5 <1.0	Sample Number		Client Info		GFL0105186	GFL0105310	GFL0105217
Oil Age hrs Client Info 400 200 600 Oil Changed Client Info Not Changd Changed Changed Sample Status NORMAL	Sample Date		Client Info		19 Mar 2024	26 Feb 2024	02 Feb 2024
Oil Changed Sample Status Client Info Not Changd NORMAL Not Changed NORMAL Changed NORMAL Changed NORMAL NORMAL Changed NORMAL NORMAL NORMAL NORMAL Changed NORMAL NORMAL	Machine Age	hrs	Client Info		13833	13709	13583
NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		400	200	600
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 9 2 23 Chromium ppm ASTM D5185m >4 0 <1 1 Nickel ppm ASTM D5185m >2 0 <1 0 Sliver ppm ASTM D5185m >2 0 <1 0 Sliver ppm ASTM D5185m >2 0 <1 0 Sliver ppm ASTM D5185m >25 <1 1 3 Lead ppm ASTM D5185m >45 0 <1 <1 <1 Copper ppm ASTM D5185m >4 0 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Cadmium ppm ASTM D5185m 0 </td <td>CONTAMINA</td> <td>TION</td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	CONTAMINA	TION	method	limit/base	current	history1	history2
Second WC Method NEG NEG NEG	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 0 <1 1 Nickel ppm ASTM D5185m >2 0 <1	WEAR METAI	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	9	2	23
Titanium	Chromium	ppm	ASTM D5185m	>4	0	<1	1
Silver	Nickel	ppm	ASTM D5185m	>2	0	<1	0
Aluminum ppm ASTM D5185m >25 <1 1 3 Lead ppm ASTM D5185m >45 0 <1	Titanium	ppm	ASTM D5185m		0	<1	0
Lead ppm ASTM D5185m >45 0 <1 2 Copper ppm ASTM D5185m >85 0 <1 <1 Tin ppm ASTM D5185m >4 0 <1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Cadmium ppm ASTM D5185m 0 <1 <2 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 1 2 0 Abs/imm ppm ASTM D5185m 100 0 0<	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >85 0 <1 <1 Tin ppm ASTM D5185m >4 0 <1	Aluminum	ppm	ASTM D5185m	>25	<1	1	3
Tin ppm ASTM D5185m >4 0 <1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 0 0 1 0 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 933 819 943 Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1270 1204 1073 1247	Lead	ppm	ASTM D5185m	>45	0	<1	2
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 60 56 54 59 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 933 819 943 Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>85	0	<1	<1
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>4	0	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	<1
Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 60 56 54 59 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 933 819 943 Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1150 1019 895 992 Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 60 56 54 59 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 933 819 943 Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1150 1019 895 992 Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m >20 0 1 13 INTERPARED method	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 54 59 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 933 819 943 Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1150 1019 895 992 Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m 5 <1 21 Potassium ppm ASTM D5185m 5 <1 13 INFRA-RED method limit/base current	Boron	ppm	ASTM D5185m	0	1	2	0
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 933 819 943 Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1150 1019 895 992 Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m >20 0 1 13 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624<	Barium	ppm	ASTM D5185m	0	0	1	0
Magnesium ppm ASTM D5185m 1010 933 819 943 Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1150 1019 895 992 Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m >5 <1	Molybdenum	ppm	ASTM D5185m	60	56	54	59
Calcium ppm ASTM D5185m 1070 1081 947 1028 Phosphorus ppm ASTM D5185m 1150 1019 895 992 Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m >20 0 1 13 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624 >20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus ppm ASTM D5185m 1150 1019 895 992 Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m 5 <1	Magnesium	ppm	ASTM D5185m	1010	933	819	943
Zinc ppm ASTM D5185m 1270 1204 1073 1247 Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m >20 0 1 13 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624 >20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Calcium	ppm	ASTM D5185m	1070	1081	947	1028
Sulfur ppm ASTM D5185m 2060 3489 3080 2930 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m 5 <1	Phosphorus	ppm		1150	1019	895	992
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m 5 <1	Zinc	ppm	ASTM D5185m	1270	1204	1073	1247
Silicon ppm ASTM D5185m >30 3 5 5 Sodium ppm ASTM D5185m 5 <1 21 Potassium ppm ASTM D5185m >20 0 1 13 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624 >20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Sulfur	ppm	ASTM D5185m	2060	3489	3080	2930
Sodium ppm ASTM D5185m 5 <1 21 Potassium ppm ASTM D5185m >20 0 1 13 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624 >20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 1 13 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624 >20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Silicon	ppm	ASTM D5185m	>30	3	5	5
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624 >20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Sodium	ppm	ASTM D5185m		5	<1	21
Soot % % *ASTM D7844 >3 0.4 0 0.7 Nitration Abs/cm *ASTM D7624 >20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Potassium	ppm	ASTM D5185m	>20	0	1	13
Nitration Abs/cm *ASTM D7624 > 20 7.2 4.0 9.1 Sulfation Abs/.1mm *ASTM D7415 > 30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 > 25 14.6 12.6 15.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.7 17.2 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Soot %	%	*ASTM D7844	>3	0.4	0	0.7
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Nitration	Abs/cm	*ASTM D7624	>20	7.2	4.0	9.1
Oxidation Abs/.1mm *ASTM D7414 >25 14.6 12.6 15.7	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.7	17.2	20.1
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.8 9.0 7.4	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	12.6	15.7
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.8	9.0	7.4



OIL ANALYSIS REPORT

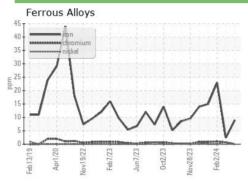




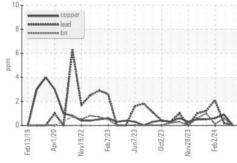
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

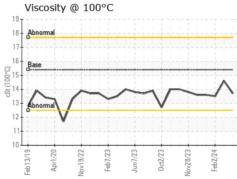
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	14.6	13.5

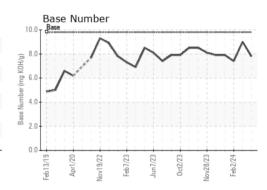
GRAPHS















Certificate L2367

Laboratory Sample No.

Test Package : FLEET

: GFL0105186 Lab Number : 06127381 Unique Number : 10941532

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 25 Mar 2024

Tested : 26 Mar 2024 Diagnosed : 26 Mar 2024 - Wes Davis

GFL Environmental - 821 - Ozarks Hauling

33924 Olath Drive Lebanon, MO US 65536

Contact: Landen Johnson landen.johnson@gflenv.com T: (417)664-0010

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)