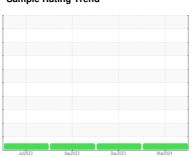


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id
724040
Component
Diesel Engi

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

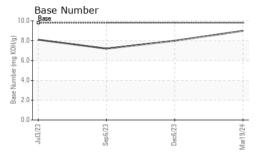
Fluid Condition

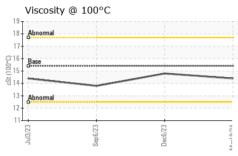
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0104900 GFL0088230 GFL0088 GFL0088230 GFL0088 GFL0088230 GFL0088 GFL0088230 GFL00882	N SHP 15W40 (-	GAL)	Jul202	3 Sep 2023	Dec2023 N	lar2024	
Sample Date Client Info 19 Mar 2024 06 Dec 2023 06 Sep 205	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 241978 0 241978 0 0 241978 0 0 0 0 0 0 0 0 0	Sample Number		Client Info		GFL0104900	GFL0088230	GFL0088197
Dil Age	Sample Date		Client Info		19 Mar 2024	06 Dec 2023	06 Sep 2023
Cilichanged Cilichanged Cilichanged N/A NORMAL NORMAL	Machine Age	mls	Client Info		241978	0	241978
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 history1 water WC Method NEG	Oil Age	mls	Client Info		238114	0	0
CONTAMINATION	Oil Changed		Client Info		N/A	N/A	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >80 4 25 32 Chromium ppm ASTM D5185m >5 <1 <1 1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >30 2 7 4 Lead ppm ASTM D5185m >30 2 7 4 Lead ppm ASTM D5185m >30 <1 0 <1 1 Copper ppm ASTM D5185m >5 <1 0 <1 1 Vanadium ppm ASTM D5185m <1 0 <1 1	CONTAMINAT	TION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
New Note	Water		WC Method	>0.2	NEG	NEG	NEG
Pron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >5 <1 <1 1 Nickel ppm ASTM D5185m >2 0 <1	WEAR METAL	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	4	25	32
Titanium	Chromium	ppm	ASTM D5185m	>5	<1	<1	1
Silver	Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	Titanium	ppm	ASTM D5185m		<1	0	0
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >150 0 <1 1 Tin ppm ASTM D5185m >5 <1	Aluminum	ppm	ASTM D5185m	>30	2	7	4
Tin	Lead	ppm	ASTM D5185m	>30	<1	0	<1
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 <1 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 <1 0 Magnesium ppm ASTM D5185m 1070 1038 1059 1140 Phosphorus ppm ASTM D5185m 1070 1038 1059 1140 Phosphorus ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method	Copper	ppm	ASTM D5185m	>150	0	<1	1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 <1	Tin	ppm	ASTM D5185m	>5	<1	0	<1
ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 -1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 57 63 66 Manganese ppm ASTM D5185m 0 0 0 -1 Magnesium ppm ASTM D5185m 1010 938 965 984 Calcium ppm ASTM D5185m 1070 1038 1059 1140 Phosphorus ppm ASTM D5185m 1150 977 925 1057 Zinc ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 57 63 66 Manganese ppm ASTM D5185m 0 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 63 66 Manganese ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 938 965 984 Calcium ppm ASTM D5185m 1070 1038 1059 1140 Phosphorus ppm ASTM D5185m 1150 977 925 1057 Zinc ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m 20 <1 3 4 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7624	Boron	ppm	ASTM D5185m	0	0	0	<1
Manganese ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 1010 938 965 984 Calcium ppm ASTM D5185m 1070 1038 1059 1140 Phosphorus ppm ASTM D5185m 1150 977 925 1057 Zinc ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m >20 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 938 965 984 Calcium ppm ASTM D5185m 1070 1038 1059 1140 Phosphorus ppm ASTM D5185m 1150 977 925 1057 Zinc ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m 20 8 5 8 Sodium ppm ASTM D5185m 20 <1	Molybdenum	ppm	ASTM D5185m	60	57	63	66
Calcium ppm ASTM D5185m 1070 1038 1059 1140 Phosphorus ppm ASTM D5185m 1150 977 925 1057 Zinc ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m 2 37 16 Potassium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m	0	0	0	<1
Phosphorus ppm ASTM D5185m 1150 977 925 1057 Zinc ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m 2 37 16 Potassium ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m	1010	938	965	984
Zinc ppm ASTM D5185m 1270 1176 1250 1333 Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m 2 37 16 Potassium ppm ASTM D5185m >20 <1 3 4 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >3 0 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 4.3 10.0 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 21.7 21.2 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1070	1038	1059	1140
Sulfur ppm ASTM D5185m 2060 2901 3107 3449 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m 2 37 16 Potassium ppm ASTM D5185m >20 <1	Phosphorus	ppm	ASTM D5185m	1150	977	925	1057
CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m 2 37 16 Potassium ppm ASTM D5185m >20 <1	Zinc	ppm	ASTM D5185m	1270	1176	1250	1333
Silicon ppm ASTM D5185m >20 8 5 8 Sodium ppm ASTM D5185m 2 37 16 Potassium ppm ASTM D5185m >20 <1 3 4 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >3 0 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 4.3 10.0 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 21.7 21.2 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 20.7 19.7	Sulfur	ppm	ASTM D5185m	2060	2901	3107	3449
Sodium ppm ASTM D5185m 2 37 16 Potassium ppm ASTM D5185m >20 <1 3 4 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >3 0 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 4.3 10.0 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 21.7 21.2 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 12.7 20.7 19.7	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 3 4 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >3 0 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 4.3 10.0 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 21.7 21.2 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 12.7 20.7 19.7	Silicon	ppm	ASTM D5185m	>20	8	5	8
INFRA-RED	Sodium	ppm	ASTM D5185m		2	37	16
Soot % % *ASTM D7844 >3 0 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 4.3 10.0 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 21.7 21.2 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 12.7 20.7 19.7	Potassium	ppm	ASTM D5185m	>20	<1	3	4
Nitration Abs/cm *ASTM D7624 >20 4.3 10.0 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.4 21.7 21.2 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 12.7 20.7 19.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.4 21.7 21.2 FLUID DEGRADATION method limit/base current history1 history1 history1 history2 12.7 20.7 19.7	Soot %	%	*ASTM D7844	>3	0	0.3	0.3
FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 12.7 20.7 19.7	Nitration	Abs/cm	*ASTM D7624	>20	4.3	10.0	10.4
Oxidation Abs/.1mm *ASTM D7414 >25 12.7 20.7 19.7	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.4	21.7	21.2
	FLUID DEGRA	OITAD	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 9.0 8.0 7.2	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.7	20.7	19.7
, , , , , , , , , , , , , , , , , , , ,	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.0	8.0	7.2



OIL ANALYSIS REPORT

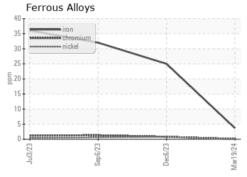


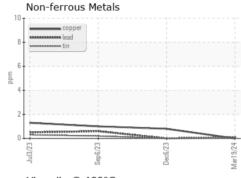


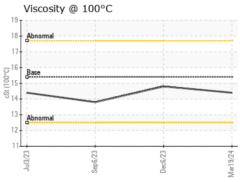
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

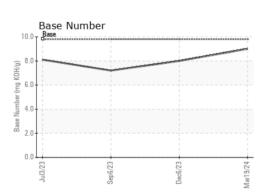
L LOID PROPI	ERITES	method			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	14.8	13.8

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number : 06126173

Test Package : FLEET

: GFL0104900

Unique Number : 10940324

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 22 Mar 2024 **Tested**

: 24 Mar 2024 Diagnosed : 24 Mar 2024 - Wes Davis

GFL Environmental - 820 - Joplin Hauling

3700 West 7th Street Joplin, MO

US 64801 Contact: James Jarrett

jjarrett@gflenv.com T: (417)310-2802

* - 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)