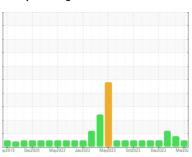


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 928074-205262

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

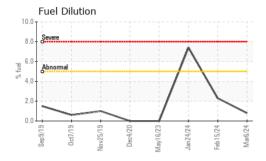
Fluid Condition

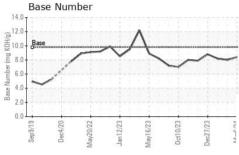
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

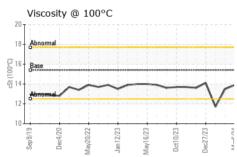
GAL)		sp2019 Dec2	020 May2022 Jan202	3 May2023 Oct2023 Dec20	023 Mar202	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109141	GFL0109229	GFL0098353
Sample Date		Client Info		06 Mar 2024	15 Feb 2024	24 Jan 2024
Machine Age	hrs	Client Info		18728	18570	18288
Oil Age	hrs	Client Info		700	700	600
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	5	26	18
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	18	1
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	0	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0	1
Barium	ppm	ASTM D5185m	0	0	0	0
	1-1-					
Molybdenum	ppm	ASTM D5185m	60	58	61	51
Manganese			60 0	58 0	61 <1	51 <1
	ppm	ASTM D5185m				
Manganese	ppm	ASTM D5185m ASTM D5185m	0	0	<1	<1
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010	0 887	<1 981	<1 914
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	0 887 1020	<1 981 1075	<1 914 949
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150	0 887 1020 1011	<1 981 1075 1071	<1 914 949 975
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270	0 887 1020 1011 1161	<1 981 1075 1071 1276	<1 914 949 975 1136
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	0 887 1020 1011 1161 3071	<1 981 1075 1071 1276 3105	<1 914 949 975 1136 2846
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	0 887 1020 1011 1161 3071 current	<1 981 1075 1071 1276 3105 history1	<1 914 949 975 1136 2846 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	0 887 1020 1011 1161 3071 current	<1 981 1075 1071 1276 3105 history1 6	<1 914 949 975 1136 2846 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	0 887 1020 1011 1161 3071 current 4 6	<1 981 1075 1071 1276 3105 history1 6 31	<1 914 949 975 1136 2846 history2 4
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	0 887 1020 1011 1161 3071 current 4 6 5	<1 981 1075 1071 1276 3105 history1 6 31 24	<1 914 949 975 1136 2846 history2 4 3 <1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25 >20 >5	0 887 1020 1011 1161 3071 current 4 6 5 0.8	<1 981 1075 1071 1276 3105 history1 6 31 24 2.3	<1 914 949 975 1136 2846 history2 4 3 <1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m ASTM D3524	0 1010 1070 1150 1270 2060 limit/base >25 >20 >5	0 887 1020 1011 1161 3071 current 4 6 5 0.8	<1 981 1075 1071 1276 3105 history1 6 31 24 2.3 history1	<1 914 949 975 1136 2846 history2 4 3 <1 1 7.4 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844	0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base	0 887 1020 1011 1161 3071 current 4 6 5 0.8 current	<1 981 1075 1071 1276 3105 history1 6 31 24 2.3 history1 1	<1 914 949 975 1136 2846 history2 4 3 <1 ▲ 7.4 history2 0.3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7824	0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base	0 887 1020 1011 1161 3071 current 4 6 5 0.8 current 0.3 6.2	<1 981 1075 1071 1276 3105 history1 6 31 24 ▲ 2.3 history1 1 9.6	<1 914 949 975 1136 2846 history2 4 3 <1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D3524 method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30	0 887 1020 1011 1161 3071 current 4 6 5 0.8 current 0.3 6.2 17.8	<1 981 1075 1071 1276 3105 history1 6 31 24 223 history1 1 9.6 20.5	<1 914 949 975 1136 2846 history2 4 3 <1 ↑ 7.4 history2 0.3 7.0 18.3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm	ASTM D5185m ASTM D3524 method *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	0 887 1020 1011 1161 3071 current 4 6 5 0.8 current 0.3 6.2 17.8	<1 981 1075 1071 1276 3105 history1 6 31 24 ▲ 2.3 history1 1 9.6 20.5 history1	<1 914 949 975 1136 2846 history2 4 3 <1 1.4 7.4 history2 0.3 7.0 18.3 history2



OIL ANALYSIS REPORT



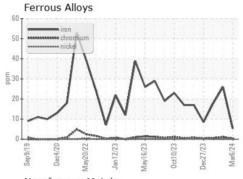


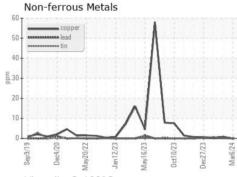


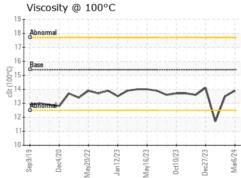
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

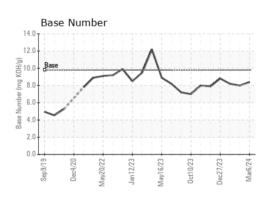
FLUID PROPI	ERITES	method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.5	▲ 11.7

GRAPHS













Laboratory Sample No. Lab Number : 06116771

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0109141

Tested Unique Number: 10925604 Diagnosed

Received : 13 Mar 2024 : 14 Mar 2024

: 14 Mar 2024 - Wes Davis

GFL Environmental - 822 - Springfield Hauling 2120 West Bennett Street

Springfield, MO US 65807 Contact: Dennis Moore

Test Package: FLEET (Additional Tests: PercentFuel) To discuss this sample report, contact Customer Service at 1-800-237-1369.

dennis.moore@gflenv.com T: (417)403-3641

* - 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)

Submitted By: Dennis Moore