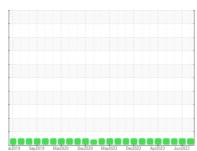


OIL ANALYSIS REPORT

Sample Rating Trend







426081-402330

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

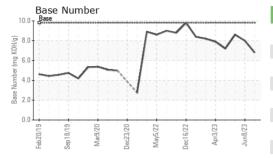
Fluid Condition

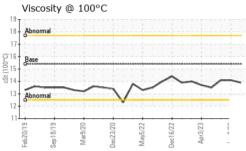
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

·						
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0083755	GFL0083770	GFL0070162
Sample Date		Client Info		11 Jul 2023	08 Jun 2023	08 May 2023
Machine Age	hrs	Client Info		16867	16655	16576
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	23	4	5
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	<1	<1
Lead	ppm	ASTM D5185m	>40	<1	1	<1
Copper	ppm	ASTM D5185m	>330	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
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	0	0	0
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0	0	0	0
Barium	ppm	ASTM D5185m	0	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	0 61	0 59	0 58
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 61 <1	0 59 0	0 58 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 61 <1 885	0 59 0 1004	0 58 <1 1005
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 61 <1 885 1066	0 59 0 1004 1096	0 58 <1 1005 1084
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 61 <1 885 1066 988	0 59 0 1004 1096 1037	0 58 <1 1005 1084 1045
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	0 61 <1 885 1066 988 1180	0 59 0 1004 1096 1037 1308	0 58 <1 1005 1084 1045 1303
Barium Molybdenum 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 ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 61 <1 885 1066 988 1180 2945	0 59 0 1004 1096 1037 1308 3651	0 58 <1 1005 1084 1045 1303 3504
Barium Molybdenum 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 ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 61 <1 885 1066 988 1180 2945	0 59 0 1004 1096 1037 1308 3651 history1	0 58 <1 1005 1084 1045 1303 3504 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 61 <1 885 1066 988 1180 2945 current	0 59 0 1004 1096 1037 1308 3651 history1	0 58 <1 1005 1084 1045 1303 3504 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 61 <1 885 1066 988 1180 2945 current 9	0 59 0 1004 1096 1037 1308 3651 history1 2	0 58 <1 1005 1084 1045 1303 3504 history2 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 61 <1 885 1066 988 1180 2945 current 9 26 4	0 59 0 1004 1096 1037 1308 3651 history1 2 3	0 58 <1 1005 1084 1045 1303 3504 history2 4 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 61 <1 885 1066 988 1180 2945 current 9 26 4	0 59 0 1004 1096 1037 1308 3651 history1 2 3 2	0 58 <1 1005 1084 1045 1303 3504 history2 4 5 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 61 <1 885 1066 988 1180 2945 current 9 26 4 current	0 59 0 1004 1096 1037 1308 3651 history1 2 3 2 history1 0.3	0 58 <1 1005 1084 1045 1303 3504 history2 4 5 2 history2 0.2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20	0 61 <1 885 1066 988 1180 2945 current 9 26 4 current 0.7 11.4	0 59 0 1004 1096 1037 1308 3651 history1 2 3 2 history1 0.3 6.8	0 58 <1 1005 1084 1045 1303 3504 history2 4 5 2 history2 0.2 6.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	0 61 <1 885 1066 988 1180 2945 current 9 26 4 current 0.7 11.4 22.7	0 59 0 1004 1096 1037 1308 3651 history1 2 3 2 history1 0.3 6.8 19.7	0 58 <1 1005 1084 1045 1303 3504 history2 4 5 2 history2 0.2 6.3 19.2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	0 61 <1 885 1066 988 1180 2945 current 9 26 4 current 0.7 11.4 22.7	0 59 0 1004 1096 1037 1308 3651 history1 2 3 2 history1 0.3 6.8 19.7	0 58 <1 1005 1084 1045 1303 3504 history2 4 5 2 history2 0.2 6.3 19.2 history2



OIL ANALYSIS REPORT

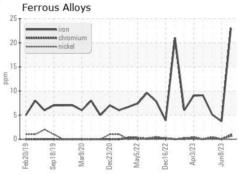


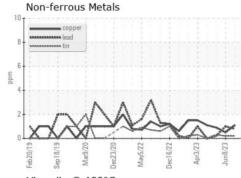


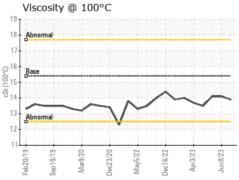
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

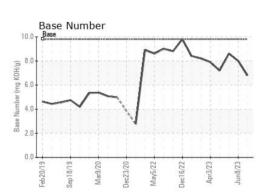
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	14.1	14.1

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number**

: 05899642 : 10560998 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0083755 Received : 17 Jul 2023 Diagnosed : 18 Jul 2023

Diagnostician : Wes Davis

GFL Environmental - 836 - Kansas City Hauling 7801 East Truman Road

Kansas City, MO US 64126 Contact: Robert Hart

rhart@gflenv.com T: (580)461-1509

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)