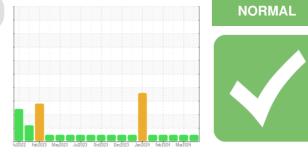


OIL ANALYSIS REPORT

Sample Rating Trend

SAMPLE INFORMATION method limit/base



912036 Component Diesel Engine Fluid

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Machine Id

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		GFL0113730	GFL0113721	GFL0111109
Sample Date		Client Info		11 Apr 2024	25 Mar 2024	01 Mar 2024
Machine Age	hrs	Client Info		6153	6031	5883
Oil Age	hrs	Client Info		122	443	295
Oil Changed		Client Info		N/A	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
•	_					-
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
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	>120	5	8	6
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
				2	2	1
Aluminum	ppm	ASTM D5185m	>20			
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	6	13	nistory2 9
	ppm ppm		0			
Boron		ASTM D5185m	0	6	13	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	6 0	13 0	9 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6 0 67	13 0 84	9 0 81
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	6 0 67 0	13 0 84 <1	9 0 81 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 0 67 0 851	13 0 84 <1 953	9 0 81 0 989
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	6 0 67 0 851 1033	13 0 84 <1 953 1181	9 0 81 0 989 1154
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	6 0 67 0 851 1033 958	13 0 84 <1 953 1181 1043	9 0 81 0 989 1154 1072
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	6 0 67 0 851 1033 958 1121	13 0 84 <1 953 1181 1043 1260	9 0 81 0 989 1154 1072 1232
Boron 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	0 0 60 0 1010 1070 1150 1270 2060	6 0 67 0 851 1033 958 1121 3224	13 0 84 <1 953 1181 1043 1260 3392	9 0 81 0 989 1154 1072 1232 3015 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	6 0 67 0 851 1033 958 1121 3224 current 2	13 0 84 <1 953 1181 1043 1260 3392 history1 4	9 0 81 0 989 1154 1072 1232 3015 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm 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 0 60 1010 1070 1150 1270 2060	6 0 67 0 851 1033 958 1121 3224 current	13 0 84 <1 953 1181 1043 1260 3392 history1	9 0 81 0 989 1154 1072 1232 3015 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	6 0 67 0 851 1033 958 1121 3224 current 2 2 12 22	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 6	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 3 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	6 0 67 0 851 1033 958 1121 3224 current 2 12 22 22 current	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 6 history1	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 5 5 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	6 0 67 0 851 1033 958 1121 3224 current 2 12 22 12 22 current 0.2	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 6 history1 0.5	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 5 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 225 220 220 1imit/base >22 20	6 0 67 0 851 1033 958 1121 3224 current 2 2 12 22 22 current 0.2 6.8	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 6 history1 0.5 9.1	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 3 5 history2 0.4 8.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	6 0 67 0 851 1033 958 1121 3224 current 2 12 22 12 22 current 0.2	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 6 history1 0.5	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 5 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	6 0 67 0 851 1033 958 1121 3224 current 2 2 12 22 22 current 0.2 6.8	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 6 history1 0.5 9.1	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 3 5 history2 0.4 8.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <u>1imit/base</u> >4 >20 30	6 0 67 0 851 1033 958 1121 3224 <u>current</u> 2 12 22 22 <u>current</u> 0.2 6.8 18.4	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 4 6 history1 0.5 9.1 21.0	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 3 5 <u>history2</u> 0.4 8.2 20.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	6 0 67 0 851 1033 958 1121 3224 current 2 2 12 22 current 0.2 6.8 18.4 current	13 0 84 <1 953 1181 1043 1260 3392 history1 4 4 4 6 history1 0.5 9.1 21.0 history1	9 0 81 0 989 1154 1072 1232 3015 history2 3 3 3 5 history2 0.4 8.2 20.1 history2

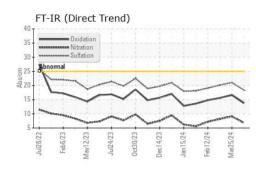
Submitted By: GFL166,GFL172,GFL180,GFL867,GFL868,GFL955 - Chelsea Bryan

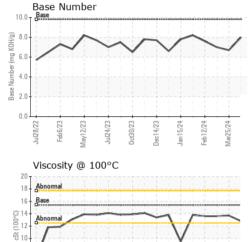


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OIL ANALYSIS REPORT





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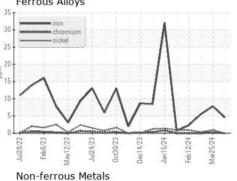
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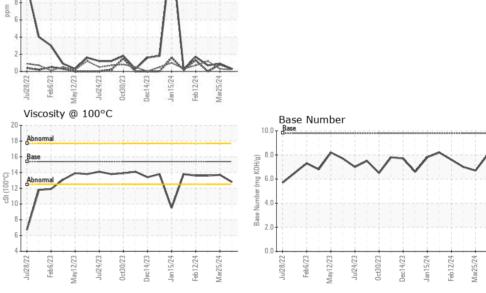
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lead

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	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	13.7	13.6
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL environmental - 867 - Trafford (Blount Hauling) Sample No. : GFL0113730 Received : 16 Apr 2024 1130 County Line Rd Lab Number : 06150912 Tested : 17 Apr 2024 Trafford, AL US 35172 Unique Number : 10980990 Diagnosed : 17 Apr 2024 - Wes Davis Test Package : FLEET Contact: Jonathan Williams Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jonathan.williams@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: GFL867 [WUSCAR] 06150912 (Generated: 04/17/2024 16:48:01) Rev: 1

Submitted By: GFL166,GFL172,GFL180,GFL867,GFL868,GFL955 - Chelsea Bryan