

OIL ANALYSIS REPORT

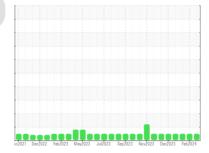
FDADT



MONTGOMERY
927047-162510

Diesel Engine

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



Sample Rating Trend



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

Light fuel dilution occurring. No other contaminants were detected in the oil.

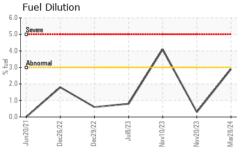
Fluid Condition

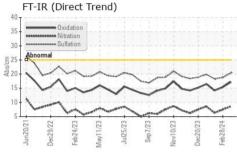
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

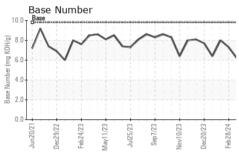
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0113724	GFL0111104	GFL0111085
Sample Date		Client Info		28 Mar 2024	28 Feb 2024	09 Feb 2024
Machine Age	hrs	Client Info		18865	18627	18470
Oil Age	hrs	Client Info		0	892	735
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
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	>120	10	5	3
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	5	3	4
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	2	1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVEO						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	limit/base	current 7	history1 8	history2 13
	ppm					
Boron	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	0	7	8	13
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	7 0	8	13 0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	7 0 85	8 0 78	13 0 75
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	7 0 85 <1	8 0 78	13 0 75 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	7 0 85 <1 886	8 0 78 0 868	13 0 75 <1 845
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	7 0 85 <1 886 1072	8 0 78 0 868 1053	13 0 75 <1 845 974
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	7 0 85 <1 886 1072 892	8 0 78 0 868 1053 955	13 0 75 <1 845 974 927
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	7 0 85 <1 886 1072 892 1157	8 0 78 0 868 1053 955 1169	13 0 75 <1 845 974 927 1148
Boron 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 0 60 0 1010 1070 1150 1270 2060	7 0 85 <1 886 1072 892 1157 2519	8 0 78 0 868 1053 955 1169 3002	13 0 75 <1 845 974 927 1148 2811
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	7 0 85 <1 886 1072 892 1157 2519	8 0 78 0 868 1053 955 1169 3002 history1	13 0 75 <1 845 974 927 1148 2811 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	7 0 85 <1 886 1072 892 1157 2519 current	8 0 78 0 868 1053 955 1169 3002 history1	13 0 75 <1 845 974 927 1148 2811 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	7 0 85 <1 886 1072 892 1157 2519 current 6	8 0 78 0 868 1053 955 1169 3002 history1 5	13 0 75 <1 845 974 927 1148 2811 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	7 0 85 <1 886 1072 892 1157 2519 current 6 6	8 0 78 0 868 1053 955 1169 3002 history1 5 4	13 0 75 <1 845 974 927 1148 2811 history2 6 3 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	7 0 85 <1 886 1072 892 1157 2519 current 6 6 8 2.9	8 0 78 0 868 1053 955 1169 3002 history1 5 4 8 <<1.0	13 0 75 <1 845 974 927 1148 2811 history2 6 3 7 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	7 0 85 <1 886 1072 892 1157 2519 current 6 6 8 2.9 current 0.3	8 0 78 0 868 1053 955 1169 3002 history1 5 4 8 <1.0	13 0 75 <1 845 974 927 1148 2811 history2 6 3 7 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	7 0 85 <1 886 1072 892 1157 2519 current 6 6 8 2.9 current	8 0 78 0 868 1053 955 1169 3002 history1 5 4 8 <1.0 history1 0.2	13 0 75 <1 845 974 927 1148 2811 history2 6 3 7 <1.0 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	7 0 85 <1 886 1072 892 1157 2519 current 6 6 8 2.9 current 0.3 8.6	8 0 78 0 868 1053 955 1169 3002 history1 5 4 8 <1.0 history1 0.2 7.5	13 0 75 <1 845 974 927 1148 2811 history2 6 3 7 <1.0 history2 0.1 6.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D78185m ASTM D7824 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30 limit/base	7 0 85 <1 886 1072 892 1157 2519 current 6 6 8 2.9 current 0.3 8.6 20.4 current	8 0 78 0 868 1053 955 1169 3002 history1 5 4 8 <1.0 history1 0.2 7.5 18.8 history1	13 0 75 <1 845 974 927 1148 2811 history2 6 3 7 <1.0 history2 0.1 6.3 18.3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30	7 0 85 <1 886 1072 892 1157 2519 current 6 6 8 2.9 current 0.3 8.6 20.4	8 0 78 0 868 1053 955 1169 3002 history1 5 4 8 <1.0 history1 0.2 7.5 18.8	13 0 75 <1 845 974 927 1148 2811 history2 6 3 7 <1.0 history2 0.1 6.3 18.3

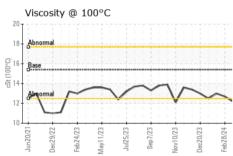


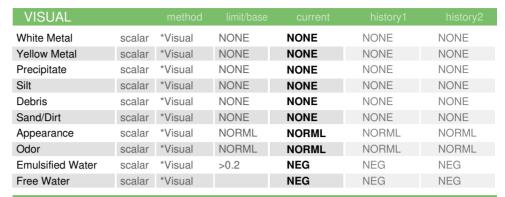
OIL ANALYSIS REPORT





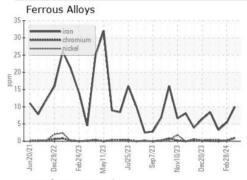


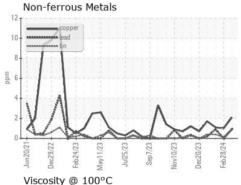


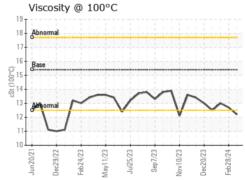


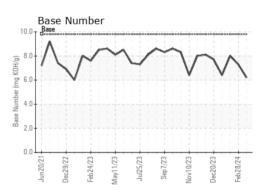
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.2	12.7	13.0

GRAPHS













Certificate 12367

Laboratory Sample No.

: GFL0113724 Lab Number : 06140929 Unique Number: 10965737

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

: 08 Apr 2024 **Tested** : 10 Apr 2024 Diagnosed

: 10 Apr 2024 - Wes Davis Test Package: FLEET (Additional Tests: FuelDilution, PercentFuel)

US 35172 Contact: Jonathan Williams jonathan.williams@gflenv.com

1130 County Line Rd

GFL environmental - 867 - Trafford (Blount Hauling)

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)

Report Id: GFL867 [WUSCAR] 06140929 (Generated: 04/10/2024 17:08:32) Rev: 1

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

T:

F:

Trafford, AL