

OIL ANALYSIS REPORT



Area **MONTGOMERY MACK 420055**

Diesel Engine

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



DIAGNOSIS	
Recommendation	

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

Wear

An increase in the iron level is noted. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

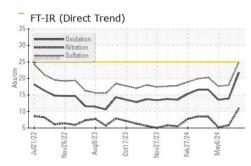
Fluid Condition

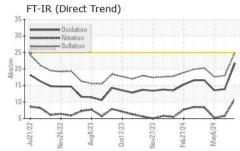
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

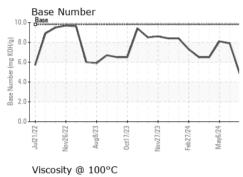
SAMPLE INFORM		methoa	iinii/base	current	nistory i	nistory2
Sample Number		Client Info		GFL0127235	GFL0088021	GFL0118430
Sample Date		Client Info		25 Jun 2024	23 May 2024	06 May 2024
Machine Age	hrs	Client Info		11434	11120	11035
Oil Age	hrs	Client Info		525	211	126
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ATTENTION	NORMAL	NORMAL
		and the set	1111-/0		In the hear of	h la la se O
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	63	5	3
Chromium	ppm	ASTM D5185m		1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	1	0
Aluminum	ppm	ASTM D5185m		5	2	<1
Lead	ppm	ASTM D5185m	>40	2	<1	<1
Copper	ppm	ASTM D5185m		2	1	0
Tin	ppm		>15	<1	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES	nnm	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	5	<1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	5 <1	<1 <1	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 <1 63	<1 <1 61	0 0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 <1 63 1	<1 <1 61 <1	0 0 61 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 <1 63 1 989	<1 <1 61 <1 932	0 0 61 0 1026
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	5 <1 63 1 989 1138	<1 <1 61 <1 932 1022	0 0 61 0 1026 1094
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	0 0 60 0 1010 1070 1150	5 <1 63 1 989 1138 1056	<1 <1 61 <1 932 1022 952	0 0 61 0 1026 1094 1115
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	5 <1 63 1 989 1138 1056 1332	<1 <1 61 <1 932 1022 952 1189	0 0 61 0 1026 1094 1115 1328
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	0 0 60 1010 1070 1150 1270 2060	5 <1 63 1 989 1138 1056 1332 3187	<1 <1 61 <1 932 1022 952 1189 2975	0 0 61 0 1026 1094 1115 1328 3847
Boron 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 ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	5 <1 63 1 989 1138 1056 1332 3187 current	<1 <1 61 <1 932 1022 952 1189 2975 history1	0 0 61 0 1026 1094 1115 1328 3847 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	5 <1 63 1 989 1138 1056 1332 3187 current 14	<1 <1 61 <1 932 1022 952 1189 2975 history1 4	0 0 61 00 1026 1094 1115 1328 3847 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Limit/base	5 <1 63 1 989 1138 1056 1332 3187 current 14 8	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3	0 0 61 00 1026 1094 1115 1328 3847 <u>history2</u> 2 1
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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	5 <1 63 1 989 1138 1056 1332 3187 current 14	<1 <1 61 <1 932 1022 952 1189 2975 history1 4	0 0 61 00 1026 1094 1115 1328 3847 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Limit/base	5 <1 63 1 989 1138 1056 1332 3187 current 14 8 6	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3	0 0 61 00 1026 1094 1115 1328 3847 <u>history2</u> 2 1
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	5 <1 63 1 989 1138 1056 1332 3187 current 14 8 6	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3 3	0 0 61 00 1026 1094 1115 1328 3847 <u>history2</u> 2 1 1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	5 <1 63 1 989 1138 1056 1332 3187 current 14 8 6 current	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3 3 3	0 0 61 00 1026 1094 1115 1328 3847 <u>history2</u> 2 1 1 <1 <1
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 ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	5 <1 63 1 989 1138 1056 1332 3187 current 14 8 6 current 1.1	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3 3 3 history1 0.1	0 0 61 00 1026 1094 1115 1328 3847 <u>history2</u> 2 1 <1 <1 <i>history2</i> 0.1
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	5 <1 63 1 989 1138 1056 1332 3187 current 14 8 6 current 1.1 11.0	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3 3 history1 0.1 5.8	0 0 61 00 1026 1094 1115 1328 3847 <u>history2</u> 2 1 <1 <1 <u>history2</u> 0.1 5.2 17.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 225 220 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	5 <1 63 1 989 1138 1056 1332 3187 Current 14 8 6 Current 1.1 11.0 25.0 Current	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3 3 history1 0.1 5.8 18.0 history1	0 0 61 0 1026 1094 1115 1328 3847 history2 2 1 <1 <1 history2 0.1 5.2 17.6 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 limit/base >20 limit/base >4 >20	5 <1 63 1 989 1138 1056 1332 3187 current 14 8 6 current 1.1 1.1 1.1 25.0	<1 <1 61 <1 932 1022 952 1189 2975 history1 4 3 3 3 history1 0.1 5.8 18.0	0 0 61 00 1026 1094 1115 1328 3847 history2 2 1 <1 <1 kistory2 0.1 5.2 17.6

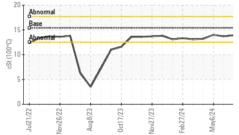


OIL ANALYSIS REPORT



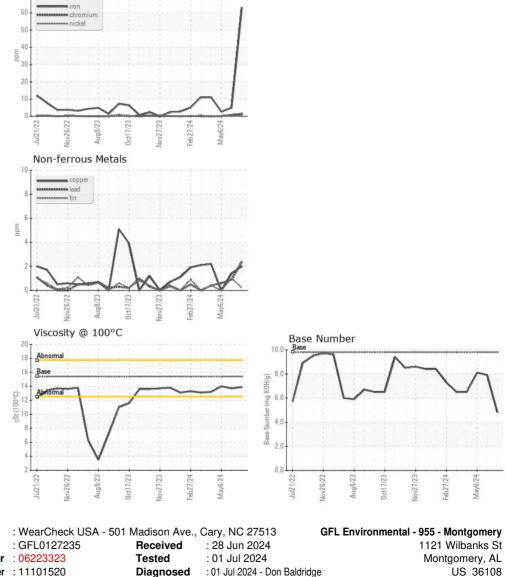






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.7	14.0
GRAPHS						
Earrous Allovs						

Ferrous Alloys



Laboratory Sample No. Lab Number : 06223323 Unique Number : 11101520 Diagnosed : 01 Jul 2024 - Don Baldridge Test Package : FLEET Contact: LISA REEVES Certificate 12367 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)

T: F:

Submitted By: Lisa Goldman Page 2 of 2