

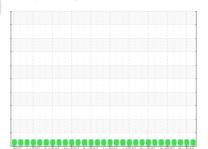
OIL ANALYSIS REPORT



MONTGOMERY **MACK 913016**

Component **Diesel Engine**

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



Sample Rating Trend



NORMAL

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

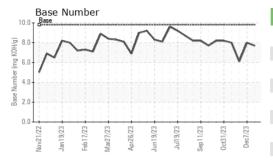
Fluid Condition

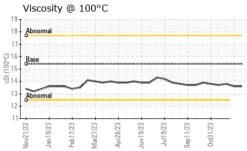
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4392 4067 3964 481	Sample Number		Client Info		GFL0081877	GFL0091296	GFL0091285
Oil Age hrs Client Info 325 584 481 Oil Changed Sample Status Client Info Not Changed North Changed Nort	Sample Date		Client Info		17 Jan 2024	07 Dec 2023	21 Nov 2023
Oil Changed Sample Status Client Info Not Changd NORMAL A1.0 <1.0	Machine Age	hrs	Client Info		4392	4067	3964
Sample Status	Oil Age	hrs	Client Info		325	584	481
Fuel	Oil Changed		Client Info		Not Changd	Changed	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 9 7 57 Chromium ppm ASTM D5185m >20 <1 0 2 Nickel ppm ASTM D5185m >20 <1 0 6 Silver ppm ASTM D5185m >2 0 0 <1 Sliver ppm ASTM D5185m >2 0 0 <1 Sliver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 <1 2 6 Lead ppm ASTM D5185m >40 0 <1 1 1 2 2 Copper ppm ASTM D5185m >30 1 1 1 2 2 4 <1 0	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history1 history1 limit/base current history1 history1 history1 limit/base current history1 history1 history1 history1 limit/base current limit/base current history1 limit/base curr	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 9 7 57 Chromium ppm ASTM D5185m >20 <1 0 2 Nickel ppm ASTM D5185m >2 0 0 <1 Titanium ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >2 0 0 <1 <1 Lead ppm ASTM D5185m >2 0 0 <1 <1 1 1 22 6 Lead ppm ASTM D5185m >20 <1 2 6 1 1 1 22 1 1 1 1 2 2 6 1 1 1 2 2 6 1 1 1 1 2 2 6 1 1 1 1 1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	9	7	57
Titanium ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >2 0 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	0	2
Titanium ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >2 0 0 <1	Nickel			>5	1	0	6
Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 <1 2 6 Lead ppm ASTM D5185m >20 <1 2 6 Copper ppm ASTM D5185m >330 1 1 22 Tin ppm ASTM D5185m >15 <1 0 2 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m 0 4 <1 3 Boron ppm ASTM D5185m 0 4 <1 3 Barium ppm ASTM D5185m 0 4 <1 3 Barium ppm ASTM D5185m 0 4 <1 3 Barium ppm ASTM D5185m 0 6 62 60 70 Mangaesium ppm ASTM D5185m 1010 1015 9	Titanium		ASTM D5185m	>2	0	0	<1
Aluminum ppm ASTM D5185m >20 <1 2 6 Lead ppm ASTM D5185m >40 0 <1	Silver		ASTM D5185m	>2	0	0	<1
Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 1 1 22 Tin ppm ASTM D5185m >15 <1 0 2 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history1 ADDITIVES method limit/base current history1 history1 ADDITIVES method limit/base current history1 history1 ADDITIVES method limit/base current history1 history1 Barium ppm ASTM D5185m 0 4 <1 3 Barium ppm ASTM D5185m 0 <1 0 2 Magnesium ppm ASTM D5185m 100 1048<	Aluminum	ppm	ASTM D5185m	>20	<1	2	6
Copper ppm ASTM D5185m >330 1 1 22 Tin ppm ASTM D5185m >15 <1	Lead			>40	0	<1	<1
Tin ppm ASTM D5185m >15 <1 0 2 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history1 ADDITIVES method limit/base current history1 history1 ADDITIVES method limit/base current history1 history1 ADDITIVES method himit/base current history1 history1 <th< td=""><td>Copper</td><td></td><td>ASTM D5185m</td><td>>330</td><th>1</th><td>1</td><td>22</td></th<>	Copper		ASTM D5185m	>330	1	1	22
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 4 <1 3 Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 0 60 62 60 70 Manganese ppm ASTM D5185m 0 <1 0 2 Magnesium ppm ASTM D5185m 1010 1015 953 999 Calcium ppm ASTM D5185m 1070 1048 1040 1165 Phosphorus ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128			ASTM D5185m	>15	<1	0	2
Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 4 <1	Vanadium		ASTM D5185m		<1	0	0
Boron	Cadmium		ASTM D5185m		0		<1
Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 60 62 60 70 Manganese ppm ASTM D5185m 0 <1 0 2 Magnesium ppm ASTM D5185m 1010 1015 953 999 Calcium ppm ASTM D5185m 1070 1048 1040 1165 Phosphorus ppm ASTM D5185m 1150 1058 977 963 Zinc ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 histo Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m >20 <1 1 19 INFRA-RED method limit/base <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 60 62 60 70 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	0	4	<1	3
Manganese ppm ASTM D5185m 0 <1 0 2 Magnesium ppm ASTM D5185m 1010 1015 953 999 Calcium ppm ASTM D5185m 1070 1048 1040 1165 Phosphorus ppm ASTM D5185m 1150 1058 977 963 Zinc ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m >20 <1	Barium		ASTM D5185m	0	0	0	1
Magnesium ppm ASTM D5185m 1010 1015 953 999 Calcium ppm ASTM D5185m 1070 1048 1040 1165 Phosphorus ppm ASTM D5185m 1150 1058 977 963 Zinc ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m	60	62	60	70
Magnesium ppm ASTM D5185m 1010 1015 953 999 Calcium ppm ASTM D5185m 1070 1048 1040 1165 Phosphorus ppm ASTM D5185m 1150 1058 977 963 Zinc ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 histo Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m	0	<1	0	2
Calcium ppm ASTM D5185m 1070 1048 1040 1165 Phosphorus ppm ASTM D5185m 1150 1058 977 963 Zinc ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m >20 <1	-		ASTM D5185m	1010	1015	953	999
Zinc ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m 3 2 6 Potassium ppm ASTM D5185m >20 <1	-		ASTM D5185m	1070	1048	1040	1165
Zinc ppm ASTM D5185m 1270 1287 1215 1252 Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m 3 2 6 Potassium ppm ASTM D5185m >20 <1	Phosphorus		ASTM D5185m	1150	1058	977	963
Sulfur ppm ASTM D5185m 2060 3128 2946 2645 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m >20 <1			ASTM D5185m	1270	1287	1215	1252
Silicon ppm ASTM D5185m >25 6 8 18 Sodium ppm ASTM D5185m 3 2 6 Potassium ppm ASTM D5185m >20 <1 1 19 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >4 0.5 0.3 1.2 Nitration Abs/cm *ASTM D7624 >20 8.0 7.3 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.8 24.2 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 15.0 14.9 21.9	Sulfur	ppm	ASTM D5185m	2060	3128	2946	2645
Sodium ppm ASTM D5185m 3 2 6 Potassium ppm ASTM D5185m >20 <1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>25	6	8	18
INFRA-RED method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.0 14.9 21.9	Sodium	ppm	ASTM D5185m		3	2	6
Soot % % *ASTM D7844 >4 0.5 0.3 1.2 Nitration Abs/cm *ASTM D7624 >20 8.0 7.3 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.8 24.2 FLUID DEGRADATION method limit/base current history1 history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 15.0 14.9 21.9	Potassium	ppm	ASTM D5185m	>20	<1	1	19
Nitration Abs/cm *ASTM D7624 >20 8.0 7.3 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.8 24.2 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 15.0 14.9 21.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.8 24.2 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 15.0 14.9 21.9	Soot %	%	*ASTM D7844	>4	0.5	0.3	1.2
Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.8 24.2 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 15.0 14.9 21.9	Nitration	Abs/cm	*ASTM D7624	>20	8.0	7.3	13.1
Oxidation Abs/.1mm *ASTM D7414 >25 15.0 14.9 21.9	Sulfation	Abs/.1mm	*ASTM D7415	>30		18.8	24.2
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	14.9	21.9
Dase Inditibel (DIN) IIII NUTI ASTINI DZ030 3.0 (./ 8.U 6.1	Base Number (BN)	mg KOH/g	ASTM D2896		7.7	8.0	6.1



OIL ANALYSIS REPORT

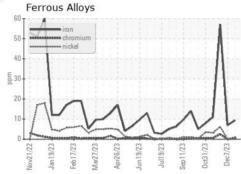


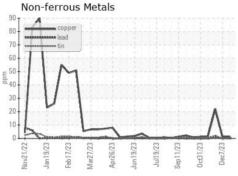


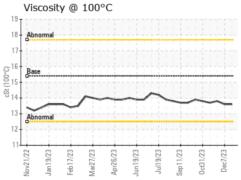
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

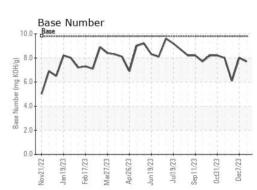
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.6	13.8	

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: 10836842

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0081877 Recieved : 19 Jan 2024 : 22 Jan 2024 : 06065460 Diagnosed

Diagnostician : Wes Davis

GFL Environmental - 955 - Montgomery

1121 Wilbanks St Montgomery, AL US 36108

Contact: LISA REEVES

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: