

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

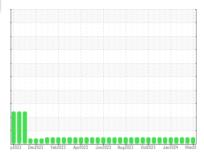


Area MONTGOMERY Machine Id MACK 913008

Component Diesel Engine Fluid

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

SAMPLE INFORMATION method





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.

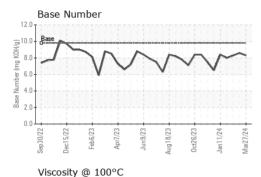
Fluid Condition

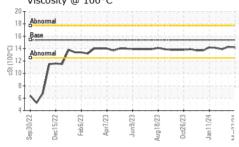
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0115612	GFL0115585	GFL0115583		
Sample Date		Client Info		27 Mar 2024	11 Mar 2024	11 Mar 2024		
Machine Age	hrs	Client Info		4711	4600	4597		
Oil Age	hrs	Client Info		111	1138	1135		
Oil Changed		Client Info		Not Changd	Changed	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		
Water		WC Method	>0.2	NEG	NEG	NEG		
Glycol		WC Method		NEG	NEG	NEG		
WEAR METALS method limit/base current history1 history2								
Iron	ppm	ASTM D5185m	>120	4	<1	4		
Chromium	ppm	ASTM D5185m	>20	0	0	0		
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1		
Titanium	ppm	ASTM D5185m	>2	0	0	0		
Silver	ppm	ASTM D5185m	>2	0	0	0		
Aluminum	ppm	ASTM D5185m	>20	<1	1	1		
Lead	ppm	ASTM D5185m	>40	0	<1	<1		
Copper	ppm	ASTM D5185m	>330	0	0	0		
Tin	ppm	ASTM D5185m	>15	0	<1	<1		
Vanadium	ppm	ASTM D5185m		0	0	0		
Cadmium	ppm	ASTM D5185m		0	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 4	history2 4		
	ppm ppm		0					
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2	4	4		
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0 0 60	2 0	4	4		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 59	4 0 57	4 0 59		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 59 0	4 0 57 <1	4 0 59 <1 951 1055		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 59 0 1042 1136 1122	4 0 57 <1 954	4 0 59 <1 951		
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	2 0 59 0 1042 1136 1122 1320	4 0 57 <1 954 1044	4 0 59 <1 951 1055 1067 1257		
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	2 0 59 0 1042 1136 1122	4 0 57 <1 954 1044 1072	4 0 59 <1 951 1055 1067		
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	2 0 59 0 1042 1136 1122 1320	4 0 57 <1 954 1044 1072 1239	4 0 59 <1 951 1055 1067 1257		
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 1010 1070 1150 1270 2060	2 0 59 0 1042 1136 1122 1320 3822	4 0 57 <1 954 1044 1072 1239 3600	4 0 59 <1 951 1055 1067 1257 3573		
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 59 0 1042 1136 1122 1320 3822 current	4 0 57 <1 954 1044 1072 1239 3600 history1	4 0 59 <1 951 1055 1067 1257 3573 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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 59 0 1042 1136 1122 1320 3822 current 3	4 0 57 <1 954 1044 1072 1239 3600 history1 3	4 0 59 <1 951 1055 1067 1257 3573 history2 4		
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 method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 kimit/base	2 0 59 0 1042 1136 1122 1320 3822 current 3 1	4 0 57 <1 954 1044 1072 1239 3600 history1 3 3	4 0 59 <1 951 1055 1067 1257 3573 history2 4 4		
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	2 0 59 0 1042 1136 1122 1320 3822 current 3 1 0	4 0 57 <1 954 1044 1072 1239 3600 history1 3 3 1	4 0 59 <1 951 1055 1067 1257 3573 history2 4 4 4 4		
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	2 0 59 0 1042 1136 1122 1320 3822 current 3 1 0 0	4 0 57 <1 954 1044 1072 1239 3600 history1 3 3 1 history1	4 0 59 <1 951 1055 1067 1257 3573 history2 4 4 4 <1 kistory2		
Boron 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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	2 0 59 0 1042 1136 1122 1320 3822 current 3 3 1 0 current 0.2	4 0 57 <1 954 1044 1072 1239 3600 history1 3 3 3 1 history1 0.1	4 0 59 <1 951 1055 1067 1257 3573 history2 4 4 4 <1 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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 59 0 1042 1136 1122 1320 3822 current 3 3 1 0 current 0.2 6.1	4 0 57 <1 954 1044 1072 1239 3600 history1 3 3 3 1 history1 0.1 5.2	4 0 59 <1 951 1055 1067 1257 3573 history2 4 4 4 4 <1 history2 0.4 6.5		
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 imit/base >25 imit/base >20 imit/base >20	2 0 59 0 1042 1136 1122 1320 3822 <u>current</u> 3 1 0 <u>current</u> 0.2 6.1 18.3	4 0 57 <1 954 1044 1072 1239 3600 history1 3 3 3 1 history1 0.1 5.2 17.8	4 0 59 <1 951 1055 1067 1257 3573 history2 4 4 4 <1 history2 0.4 6.5 17.8		



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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	14.2	14.3	13.9
GRAPHS						

Ferrous Alloys 20 Md 10)ec15/22 Apr7/23 Aug18/23 Feb6/23 Jun9/23 an11/24 Aar27/24 Non-ferrous Metals 140 120 lead 100 80 ppm 60 40 20 0 Apr7/23 Mar27/24 Sen 30/77)ec15/22 Feb6/23 an11/24 Viscosity @ 100°C Base Number 20 12.0 18 10. 16 Base Number (mg KOH/g) 8 6.0 र्देते ₁₀ 4.0 2.0 0.0 Mar27/24 -Dec15/22 Apr7/23 Jan 11/24 Feb6/23 Apr7/23 Jun9/23 Dec15/22 Sep30/22 Feb6/23 un9/23 Aug 18/23 Sep30/22 Aug 18/23

: 29 Mar 2024

: 31 Mar 2024



GFL Environmental - 955 - Montgomery 1121 Wilbanks St Montgomery, AL : 31 Mar 2024 - Wes Davis 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.

: GFL0115612

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

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

Received

Diagnosed

Tested

Jan 11/24 Mar27/24

Certificate L2367

Laboratory Sample No.

Lab Number : 06132940

Unique Number : 10952405

Test Package : FLEET