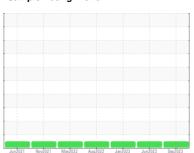


OIL ANALYSIS REPORT

Sample Rating Trend







Component

Machine Id **4551 M Diesel Engine**

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

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

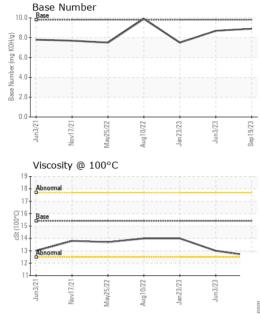
Fluid Condition

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

		Junzuzi	MOVZUZ1 WIBYZUZZ	Aug2022 Jan2023 Jun2023	Sep2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0027521	GFL0082777	GFL0071215
Sample Date		Client Info		19 Sep 2023	03 Jun 2023	23 Jan 2023
Machine Age	hrs	Client Info		20771	20127	19499
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	20	15	27
Chromium	ppm	ASTM D5185m	>20	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	3	1
Lead	ppm	ASTM D5185m	>40	0	0	3
Copper	ppm	ASTM D5185m	>330	<1	2	3
Tin	ppm	ASTM D5185m	>15	0	0	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		limit/base	current 0	history1 1	history2 4
	ppm		0			
Boron		ASTM D5185m	0	0	1	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 0	1 0	4
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 51	1 0 55	4 0 68
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 51 0	1 0 55 <1	4 0 68 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 51 0 837	1 0 55 <1 892	4 0 68 1 1037
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	0 0 51 0 837 960	1 0 55 <1 892 1048	4 0 68 1 1037 1244
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	0 0 51 0 837 960 908	1 0 55 <1 892 1048 953	4 0 68 1 1037 1244 1118
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	0 0 51 0 837 960 908 1138	1 0 55 <1 892 1048 953 1191	4 0 68 1 1037 1244 1118
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	0 0 51 0 837 960 908 1138 3287	1 0 55 <1 892 1048 953 1191 3410	4 0 68 1 1037 1244 1118 1332 3765
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	0 0 51 0 837 960 908 1138 3287	1 0 55 <1 892 1048 953 1191 3410 history1	4 0 68 1 1037 1244 1118 1332 3765 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	0 0 51 0 837 960 908 1138 3287 current	1 0 55 <1 892 1048 953 1191 3410 history1	4 0 68 1 1037 1244 1118 1332 3765 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	0 0 51 0 837 960 908 1138 3287 current 6 7	1 0 55 <1 892 1048 953 1191 3410 history1	4 0 68 1 1037 1244 1118 1332 3765 history2 5 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	0 0 51 0 837 960 908 1138 3287 current 6 7	1 0 55 <1 892 1048 953 1191 3410 history1 5	4 0 68 1 1037 1244 1118 1332 3765 history2 5 3 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 0 51 0 837 960 908 1138 3287 current 6 7 5	1 0 55 <1 892 1048 953 1191 3410 history1 5 2	4 0 68 1 1037 1244 1118 1332 3765 history2 5 3 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 0 51 0 837 960 908 1138 3287 current 6 7 5	1 0 55 <1 892 1048 953 1191 3410 history1 5 2 history1 0.6	4 0 68 1 1037 1244 1118 1332 3765 history2 5 3 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 0 51 0 837 960 908 1138 3287 current 6 7 5 current 1.2	1 0 55 <1 892 1048 953 1191 3410 history1 5 5 2 history1 0.6 9.3	4 0 68 1 1037 1244 1118 1332 3765 history2 5 3 <1 history2 0.4 7.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	0 0 51 0 837 960 908 1138 3287 current 6 7 5 current 1.2 10.8 21.1	1 0 55 <1 892 1048 953 1191 3410 history1 5 2 history1 0.6 9.3 20.0	4 0 68 1 1037 1244 1118 1332 3765 history2 5 3 <1 history2 0.4 7.9 19.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30 limit/base	0 0 51 0 837 960 908 1138 3287 current 6 7 5 current 1.2 10.8 21.1	1 0 55 <1 892 1048 953 1191 3410 history1 5 5 2 history1 0.6 9.3 20.0 history1	4 0 68 1 1037 1244 1118 1332 3765 history2 5 3 <1 history2 0.4 7.9 19.3 history2

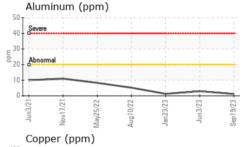


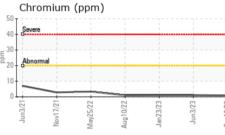
OIL ANALYSIS REPORT

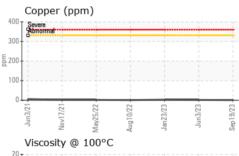


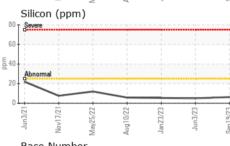
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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
	DTIEC	mathad	limit/bass	our react	historyt	hiotory (O

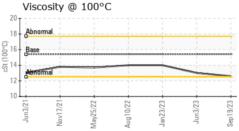
	I LOID I	1101								
	Visc @ 100°	°C	cSt	ASTM D445	15.4	12.6	13.0	14.0		
	GRAPHS	S								
	Iron (ppm)			Lead (ppm)						
21	Severe					Severe		1		
11	50					60				
ᇤ.,					E.	Abaranas				

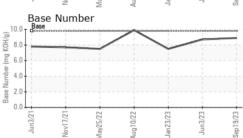














Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB1+

: 05958354

: GFL0027521 : 10659567

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 22 Sep 2023 Diagnosed : 22 Sep 2023

Diagnostician : Wes Davis

888 Baldwin Pontiac, MI US 48340 Contact: Ricky Matthews

GFL Environmental - 465 - Pontiac

rickymathews@gflenv.com T: (586)825-9514

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)