

OIL ANALYSIS REPORT

(EEY356) 10651

Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (7 GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation

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

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

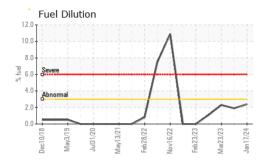
▲ Fluid Condition

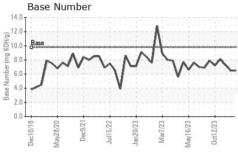
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

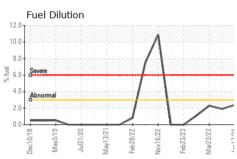
, c2018 May2020 Dec2021 Ju2022 Jan2023 May2023 Oc2023						
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109959	GFL0109865	GFL0101213
Sample Date		Client Info		08 Feb 2024	17 Jan 2024	20 Nov 2023
Machine Age	hrs	Client Info		21191	21065	20377
Oil Age	hrs	Client Info		555	429	502
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				ATTENTION	ABNORMAL	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	>75	19	18	12
Chromium	ppm	ASTM D5185m	>5	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver		ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	3	3	2
	ppm		>25	0	0	0
Lead	ppm	ASTM D5185m	>100		1	1
Copper	ppm	ASTM D5185m		<1		
Tin	ppm	ASTM D5185m	>4	0	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method				history2
ADDITIVES		method	IIIIII basc	Current	Thistory	motoryz
Boron	ppm	ASTM D5185m	0	12	4	7
	ppm					
Boron	• • •	ASTM D5185m	0	12	4	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	12 0	4 0	7
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	12 0 56	4 0 58	7 0 60
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	12 0 56 <1	4 0 58 <1	7 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	12 0 56 <1 801	4 0 58 <1 907	7 0 60 <1 893
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	12 0 56 <1 801 1017	4 0 58 <1 907 1012	7 0 60 <1 893 1042
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	12 0 56 <1 801 1017 949	4 0 58 <1 907 1012 1001	7 0 60 <1 893 1042 1000
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	12 0 56 <1 801 1017 949 1114	4 0 58 <1 907 1012 1001 1214	7 0 60 <1 893 1042 1000 1209
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	12 0 56 <1 801 1017 949 1114 2560	4 0 58 <1 907 1012 1001 1214 2903	7 0 60 <1 893 1042 1000 1209 2849
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	12 0 56 <1 801 1017 949 1114 2560 current	4 0 58 <1 907 1012 1001 1214 2903 history1	7 0 60 <1 893 1042 1000 1209 2849 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	12 0 56 <1 801 1017 949 1114 2560 current 6	4 0 58 <1 907 1012 1001 1214 2903 history1	7 0 60 <1 893 1042 1000 1209 2849 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	12 0 56 <1 801 1017 949 1114 2560 current 6 10	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9	7 0 60 <1 893 1042 1000 1209 2849 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	12 0 56 <1 801 1017 949 1114 2560 current 6 10	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	12 0 56 <1 801 1017 949 1114 2560 current 6 10 0 <1.0	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1 △ 2.4 history1	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0 <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	12 0 56 <1 801 1017 949 1114 2560 current 6 10 0 <1.0 current 0.6	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1 ≥1 ≥2.4 history1 0.5	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0 <1.0 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	12 0 56 <1 801 1017 949 1114 2560 current 6 10 0 <1.0 current 0.6 10.4	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1 ≥ 2.4 history1 0.5 10.0	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0 <1.0 history2 0.5 8.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	12 0 56 <1 801 1017 949 1114 2560 current 6 10 0 <1.0 current 0.6 10.4 20.8	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1 △ 2.4 history1 0.5 10.0 20.1	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0 <1.0 history2 0.5 8.7 19.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	12 0 56 <1 801 1017 949 1114 2560 current 6 10 0 <1.0 current 0.6 10.4	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1 ≥ 2.4 history1 0.5 10.0	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0 <1.0 history2 0.5 8.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	12 0 56 <1 801 1017 949 1114 2560 current 6 10 0 <1.0 current 0.6 10.4 20.8	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1 △ 2.4 history1 0.5 10.0 20.1	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0 <1.0 history2 0.5 8.7 19.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D76185m ASTM D76185m ASTM D76185m ASTM D7624 *ASTM D7624 *ASTM D7614 *ASTM D7614	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	12 0 56 <1 801 1017 949 1114 2560 current 6 10 0 <1.0 current 0.6 10.4 20.8 current	4 0 58 <1 907 1012 1001 1214 2903 history1 6 9 <1 △ 2.4 history1 0.5 10.0 20.1 history1	7 0 60 <1 893 1042 1000 1209 2849 history2 6 9 0 <1.0 history2 0.5 8.7 19.9



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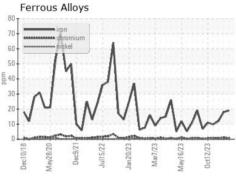


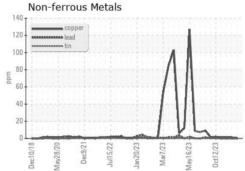


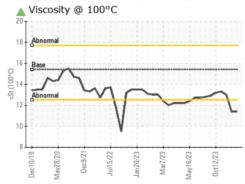
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

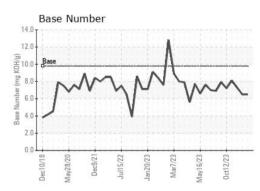
FLUID PROPI	ERITES	method	iimit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	11.4	<u></u> 11.4	13.0

GRAPHS













Laboratory Sample No. Lab Number : 06085775

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0109959

Unique Number : 10873220 Diagnosed Test Package: FLEET (Additional Tests: FUELDILUTION)

Received : 12 Feb 2024 **Tested** : 13 Feb 2024 : 13 Feb 2024 - Jonathan Hester

GFL Environmental - 010 - Stockbridge 1280 Rum Creek Parkway Stockbridge, GA

US 30281 Contact: JOSHUA TINKER

joshuatinker@gflenv.com T:

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)

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