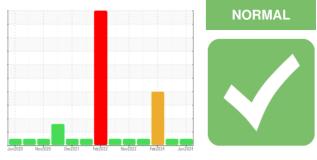


Area (EAQ340)

10976

OIL ANALYSIS REPORT

Sample Rating Trend



DIAGNOSIS

Diesel Engine

Recommendation

Resample at the next service interval to monitor.

PETRO CANADA DURON SHP 15W40 (8 GAL)

Wear

Fluid

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

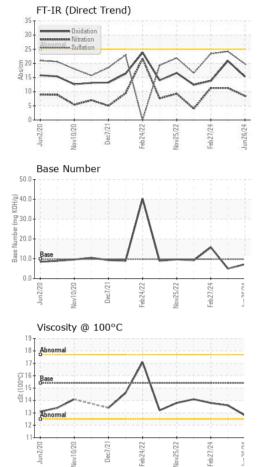
Fluid Condition

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

	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0077450	GFL0077445	GFL0089604
Sample Date		Client Info		26 Jun 2024	21 May 2024	27 Feb 2024
Machine Age	hrs	Client Info		1355	90	0
Oil Age	hrs	Client Info		1265	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	ABNORMAL
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	>75	11	50	124
Chromium	ppm	ASTM D5185m	>5	<1	3	2
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	7	29	8
Lead	ppm	ASTM D5185m	>25	2	<1	1
Copper	ppm	ASTM D5185m	>100	0	8	16
Tin	ppm	ASTM D5185m	>4	0	1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 3	history1 3	history2 124
	ppm ppm					
Boron		ASTM D5185m	0	3	3	124
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	3 0	3 0	124 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 55	3 0 65	124 0 124
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 55 <1	3 0 65 1	124 0 124 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 55 <1 928	3 0 65 1 902	124 0 124 2 866
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	3 0 55 <1 928 1004	3 0 65 1 902 1071	124 0 124 2 866 967
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	3 0 55 <1 928 1004 1040	3 0 65 1 902 1071 995	124 0 124 2 866 967 970
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	3 0 55 <1 928 1004 1040 1254	3 0 65 1 902 1071 995 1212	124 0 124 2 866 967 970 1088
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 0 1010 1070 1150 1270 2060	3 0 55 <1 928 1004 1040 1254 3360	3 0 65 1 902 1071 995 1212 2718	124 0 124 2 866 967 970 1088 3040
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	0 0 60 1010 1070 1150 1270 2060	3 0 555 <1 928 1004 1040 1254 3360 current	3 0 65 1 902 1071 995 1212 2718 history1	124 0 124 2 866 967 970 1088 3040 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	3 0 555 <1 928 1004 1040 1254 3360 current 6	3 0 65 1 902 1071 995 1212 2718 history1 7	124 0 124 2 866 967 970 1088 3040 history2 ▲ 77
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 0 1010 1070 1150 1270 2060 limit/base	3 0 55 <1 928 1004 1040 1254 3360 current 6 2	3 0 65 1 902 1071 995 1212 2718 history1 7 25	124 0 124 2 866 967 970 1088 3040 history2 ∧ 77 ∧ 2082
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	3 0 55 <1 928 1004 1040 1254 3360 current 6 2 2 <1	3 0 65 1 902 1071 995 1212 2718 history1 7 25 38	124 0 124 2 866 967 970 1088 3040 history2 ▲ 77 ▲ 2082 10
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	3 0 55 <1 928 1004 1040 1254 3360 current 6 2 <1 <	3 0 65 1 902 1071 995 1212 2718 history1 7 25 38 history1	124 0 124 2 866 967 970 1088 3040 history2 ▲ 77 ▲ 2082 10 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	3 0 55 <1 928 1004 1040 1254 3360 current 6 2 <1 current 0.4	3 0 65 1 902 1071 995 1212 2718 history1 7 25 38 history1 0.9	124 0 124 2 866 967 970 1088 3040 history2 ▲ 77 ▲ 2082 10 history2 2.2
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 2060 225 >20 imit/base >20 imit/base >20	3 0 55 <1 928 1004 1040 1254 3360 current 6 2 <1 6 2 <1 0.4 8.5	3 0 65 1 902 1071 995 1212 2718 history1 7 25 38 history1 0.9 11.3	124 0 124 2 866 967 970 1088 3040 history2 ▲ 77 ▲ 2082 10 history2 2.2 11.3
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 2060 225 20 225 20 <u>imit/base</u> >6 >20 20	3 0 55 <1 928 1004 1040 1254 3360 <u>current</u> 6 2 <1 <u>current</u> 0.4 8.5 19.8	3 0 65 1 902 1071 995 1212 2718 history1 7 25 38 history1 0.9 11.3 24.2	124 0 124 2 866 967 970 1088 3040 history2 ▲ 77 ▲ 2082 10 history2 2.2 11.3 2.3.4

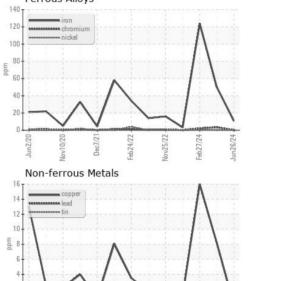


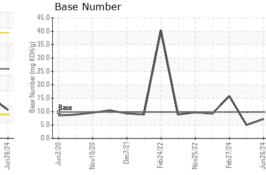
OIL ANALYSIS REPORT



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	12.8	13.6	13.8
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 072 - Americus - Transwaste Sample No. : GFL0077450 Received : 05 Jul 2024 361 McMath Mill Road Lab Number : 06228275 Tested : 05 Jul 2024 Americus, GA Unique Number : 11111768 Diagnosed : 05 Jul 2024 - Wes Davis US 31719 Test Package : FLEET Contact: RICHARD HEINZERLING Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. richard.heinzerling@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (229)924-3669 E:

-eb24/22

Vov25/22

Feb27/24

Dec7/2

Dec7/21

Nov10/20

Viscosity @ 100°C

19

18

17

()-16 ()-00 () 15 () 14

13 Abnorma

12

11-

-eb24/22

Feb27/24

C/3Cm

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

Submitted By: George Sawyer

Report Id: GFL072 [WUSCAR] 06228275 (Generated: 07/09/2024 09:37:59) Rev: 1

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