

OIL ANALYSIS REPORT

Area (YA134196) [D service] 2673 Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (46 GAL)

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.

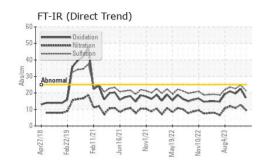
	NORMAL

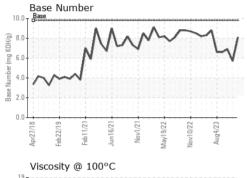
Sample Rating Trend

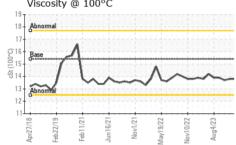
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0124488	GFL0124458	GFL0098516
Sample Date		Client Info		15 Jul 2024	05 Jun 2024	24 Jan 2024
Machine Age	hrs	Client Info		18594	18468	17688
Oil Age	hrs	Client Info		300	780	634
Oil Changed		Client Info		Changed	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
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	>165	13	26	9
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	4	3
Lead	ppm	ASTM D5185m	>150	0	4	2
Copper	ppm	ASTM D5185m	>90	6	2	0
Tin	ppm	ASTM D5185m	>5	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base		In the term of the	history
100111120		methou	IIIIII/Dase	current	history1	history2
Boron	ppm	ASTM D5185m	0	5	<1	1
	ppm ppm					
Boron		ASTM D5185m	0	5	<1	1
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	5 0	<1 1	1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 62	<1 1 73	1 0 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 62 2	<1 1 73 0	1 0 62 <1
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 1070 1150	5 0 62 2 958	<1 1 73 0 1040 1271 1074	1 0 62 <1 957 1104 1074
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	5 0 62 2 958 1144	<1 1 73 0 1040 1271	1 0 62 <1 957 1104
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	5 0 62 2 958 1144 1079	<1 1 73 0 1040 1271 1074	1 0 62 <1 957 1104 1074
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	5 0 62 2 958 1144 1079 1315	<1 1 73 0 1040 1271 1074 1406	1 0 62 <1 957 1104 1074 1292
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	5 0 62 2 958 1144 1079 1315 3602	<1 1 73 0 1040 1271 1074 1406 3347	1 0 62 <1 957 1104 1074 1292 2861
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	5 0 62 2 958 1144 1079 1315 3602 current	<1 1 73 0 1040 1271 1074 1406 3347 history1	1 0 62 <1 957 1104 1074 1292 2861 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 1010 1070 1150 1270 2060	5 0 62 2 958 1144 1079 1315 3602 current 5	<1 1 73 0 1040 1271 1074 1406 3347 history1 7	1 0 62 <1 957 1104 1074 1292 2861 history2 5
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 >35	5 0 62 2 958 1144 1079 1315 3602 current 5 6	<1 1 73 0 1040 1271 1074 1406 3347 history1 7 <1	1 0 62 <1 957 1104 1074 1292 2861 bistory2 5 1
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 60 0 1010 1070 1150 1270 2060 limit/base >35	5 0 62 2 958 1144 1079 1315 3602 <u>current</u> 5 6 3	<1 1 73 0 1040 1271 1074 1406 3347 history1 7 <11 6	1 0 62 <1 957 1104 1074 1292 2861 history2 5 1 1 1
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 Imit/base >35	5 0 62 2 958 1144 1079 1315 3602 current 5 6 3 3 current	<1 1 73 0 1040 1271 1074 1406 3347 history1 7 <1 6 history1	1 0 62 <1 957 1104 1074 1292 2861 history2 5 1 1 1 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 Imit/base >35 >20 Imit/base >7.5	5 0 62 2 958 1144 1079 1315 3602 <i>current</i> 5 6 3 <i>current</i> 0.5	<1 1 73 0 1040 1271 1074 1406 3347 history1 7 <11 6 history1 0.7	1 0 62 <1 957 1104 1074 1292 2861 history2 5 1 1 1 history2 0.5
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 imit/base >35 >20 imit/base >7.5 >20	5 0 62 2 958 1144 1079 1315 3602 <i>current</i> 5 6 3 <i>current</i> 0.5 9.6	<1 1 73 0 1040 1271 1074 1406 3347 history1 7 <11 6 history1 0.7 12.8	1 0 62 <1 957 1104 1074 1292 2861 history2 5 1 1 1 history2 0.5 10.9
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 >35 >20 Imit/base >7.5 >20 >30	5 0 62 2 958 1144 1079 1315 3602 <i>current</i> 5 6 3 3 <i>current</i> 0.5 9.6 21.3	<1 1 73 0 1040 1271 1074 1406 3347 history1 7 <11 6 history1 0.7 12.8 24.9	1 0 62 <1 957 1104 1074 1292 2861 history2 5 1 1 1 history2 0.5 10.9 22.6
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >35 >20 imit/base >7.5 >20 >30	5 0 62 2 958 1144 1079 1315 3602 <i>current</i> 5 6 3 <i>current</i> 0.5 9.6 21.3	<1 1 73 0 1040 1271 1074 1406 3347 history1 7 <11 6 history1 0.7 12.8 24.9 history1	1 0 62 <1 957 1104 1074 1292 2861 history2 5 1 1 history2 0.5 10.9 22.6 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
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.8	13.7
GRAPHS						

Ferrous Alloys

200

150

He 100

50

0

19

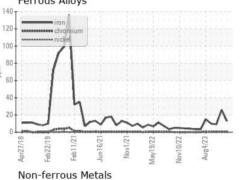
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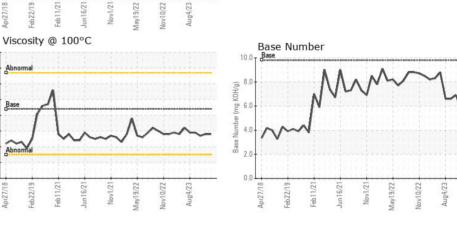
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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 006 - Wilmington Sample No. : GFL0124488 Received : 17 Jul 2024 3618 US Highway 421 N Lab Number : 06238781 Tested : 17 Jul 2024 Wilmington, NC US 28401 Unique Number : 11127615 Diagnosed : 17 Jul 2024 - Wes Davis Test Package : FLEET Contact: Eric Wood Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. eric.wood@gflenv.com T: (717)723-1956 * - 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) F: (910)762-6880

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Submitted By: NEIL GIFFIN

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