

OIL ANALYSIS REPORT

Sample Rating Trend



Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

SAMPLE INFORMATION method

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Area (57A2YN6) Machine Id

413052

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

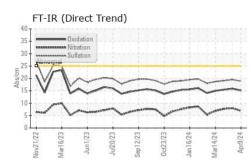
Fluid Condition

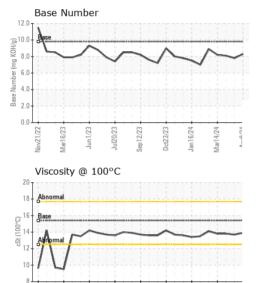
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR		method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0110623	GFL0110622	GFL0110547
Sample Date		Client Info		09 Apr 2024	09 Apr 2024	29 Mar 2024
Machine Age	hrs	Client Info		3167	3259	29947
Oil Age	hrs	Client Info		400	600	29947
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
				Normize		
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	>120	3	12	11
Chromium	ppm	ASTM D5185m	>20	0	<1	1
Nickel	ppm	ASTM D5185m	>5	0	4	4
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	<1	2	3
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	0	3	4
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	<1
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1 0	history2 1
	ppm ppm					
Boron Barium		ASTM D5185m	0	<1	0	1
Boron	ppm	ASTM D5185m ASTM D5185m	0	<1 0	0	1 0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 56	0 0 61	1 0 63
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 56 0	0 0 61 <1	1 0 63 1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 56 0 915	0 0 61 <1 1087	1 0 63 1 990
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 56 0 915 1019	0 0 61 <1 1087 1221	1 0 63 1 990 1100
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	<1 0 56 0 915 1019 1006	0 0 61 <1 1087 1221 1137	1 0 63 1 990 1100 1003
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	<1 0 56 0 915 1019 1006 1180	0 0 61 <1 1087 1221 1137 1451	1 0 63 1 990 1100 1003 1256
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 1010 1070 1150 1270 2060	<1 0 56 0 915 1019 1006 1180 3197	0 0 61 <1 1087 1221 1137 1451 3795	1 0 63 1 990 1100 1003 1256 2983
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 0 1010 1070 1150 1270 2060	<1 0 56 0 915 1019 1006 1180 3197 current	0 0 61 <1 1087 1221 1137 1451 3795 history1	1 0 63 1 990 1100 1003 1256 2983 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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	<1 0 56 0 915 1019 1006 1180 3197 current 3	0 0 61 <1 1087 1221 1137 1451 3795 history1 4	1 0 63 1 990 1100 1003 1256 2983 history2 6
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	<1 0 56 0 915 1019 1006 1180 3197 current 3 2	0 0 61 <1 1087 1221 1137 1451 3795 history1 4 3	1 0 63 1 990 1100 1003 1256 2983 history2 6 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 0 56 0 915 1019 1006 1180 3197 current 3 2 2 2	0 0 61 <1 1087 1221 1137 1451 3795 history1 4 3 4	1 0 63 1 990 1100 1003 1256 2983 history2 6 4 4
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	<1 0 56 0 915 1019 1006 1180 3197 current 3 2 2 2 2 current	0 0 61 <1 1087 1221 1137 1451 3795 history1 4 3 4 history1 0.4	1 0 63 1 990 1100 1003 1256 2983 history2 6 4 4 4 history2 0.4
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	<1 0 56 0 915 1019 1006 1180 3197 current 3 2 2 2	0 0 61 <1 1087 1221 1137 1451 3795 history1 4 3 4 4 history1	1 0 63 1 990 1100 1003 1256 2983 history2 6 4 4 4 history2
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 225 225 220 220 1imit/base >22 20	<1 0 56 0 915 1019 1006 1180 3197 <i>current</i> 3 2 2 2 <i>current</i> 0.2 6.9	0 0 61 <1 1087 1221 1137 1451 3795 history1 4 3 4 4 3 4 0.4 8.0	1 0 63 1 990 1100 1003 1256 2983 history2 6 4 4 4 history2 0.4 7.7
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	<1 0 56 0 915 1019 1006 1180 3197 Current 3 2 2 Current 0.2 6.9 18.9 Current	0 0 61 <1 1087 1221 1137 1451 3795 history1 4 3 4 history1 0.4 8.0 19.5 history1	1 0 63 1 990 1100 1003 1256 2983 history2 6 4 4 4 history2 0.4 7.7 19.1
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 20 20 20 20 20 20 20 20 20 20 20 20	<1 0 56 0 915 1019 1006 1180 3197 <i>current</i> 3 2 2 2 <i>current</i> 0.2 6.9 18.9	0 0 61 <1 1087 1221 1137 1451 3795 history1 4 3 4 history1 0.4 8.0 19.5	1 0 63 1 990 1100 1003 1256 2983 history2 6 4 4 4 history2 0.4 7.7 19.1



OIL ANALYSIS REPORT





Sen 12/23

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Nov21/22 Mar16/23 Mar14/24

18

(100°C)

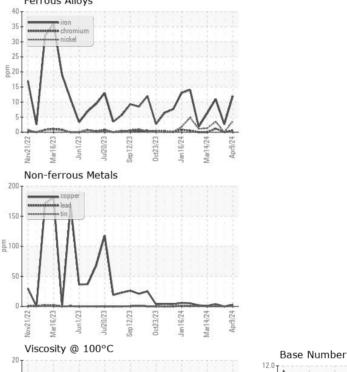
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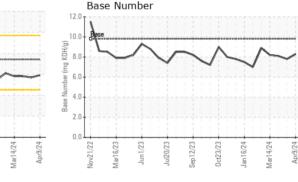
Nov21/22 Mar16/23 Jun1/23

Jan 16/24

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	13.9	13.7	13.8
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 166 - Phenix City Sample No. : GFL0110623 Received : 15 Apr 2024 18 Old Brickyard Rd Lab Number : 06148282 Tested : 15 Apr 2024 Phenix City, AL Unique Number : 10978360 Diagnosed : 15 Apr 2024 - Wes Davis US 36869 Test Package : FLEET Contact: DEAN PEACE JR Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dean.peace@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Sep12/23

Jan 16/24

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Submitted By: DARRIN WRIGHT

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