

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 912025 Component Diesel Engine

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

SAMPLE INFORMATION

method	limit/		CUTR		hı	story1	r
ov2022 Janz	023 Mar2023	Apr2023 A	ug2023 Oct2023	Dec2023	May2024		

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

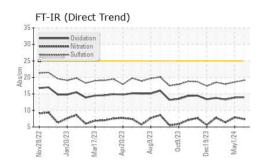
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

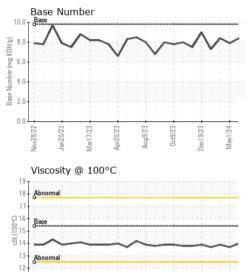
Sample Number		Client Info		GFL0115845	GFL0115829	GFL0115824
Sample Date		Client Info		09 May 2024	01 May 2024	03 Apr 2024
Machine Age	hrs	Client Info		7792	7649	7514
Oil Age	hrs	Client Info		0	2643	2508
Oil Changed		Client Info		Changed	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	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	>120	12	6	2
Chromium	ppm	ASTM D5185m	>20	1	<1	0
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	1
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	1	<1	0
Tin	ppm	ASTM D5185m	>15	1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
		the second second	12			la ta ta mu O
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	4	history1 5	9
	ppm ppm					
Boron		ASTM D5185m	0	4	5	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	5 0	9 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 65	5 0 61	9 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 65 <1	5 0 61 <1	9 0 60 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 65 <1 911	5 0 61 <1 886	9 0 60 0 842
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	4 0 65 <1 911 1124	5 0 61 <1 886 1086	9 0 60 0 842 1022
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	4 0 65 <1 911 1124 1076	5 0 61 <1 886 1086 1038	9 0 60 0 842 1022 994
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	4 0 65 <1 911 1124 1076 1234	5 0 61 <1 886 1086 1038 1200	9 0 60 0 842 1022 994 1105
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	4 0 65 <1 911 1124 1076 1234 3571	5 0 61 <1 886 1086 1038 1200 3407	9 0 60 0 842 1022 994 1105 3117
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	4 0 65 <1 911 1124 1076 1234 3571 current	5 0 61 <1 886 1086 1038 1200 3407 history1	9 0 60 0 842 1022 994 1105 3117 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	4 0 65 <1 911 1124 1076 1234 3571 current 4	5 0 61 <1 886 1086 1038 1200 3407 history1 4	9 0 60 0 842 1022 994 1105 3117 history2 3
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 1010 1070 1150 1270 2060 limit/base	4 0 65 <1 911 1124 1076 1234 3571 current 4 2 7	5 0 61 <1 886 1086 1038 1200 3407 history1 4 2	9 0 60 0 842 1022 994 1105 3117 history2 3 <
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 >25	4 0 65 <1 911 1124 1076 1234 3571 current 4 2 7	5 0 61 <1 886 1086 1038 1200 3407 history1 4 2 2	9 0 60 0 842 1022 994 1105 3117 history2 3 < 1 0
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	4 0 65 <1 911 1124 1076 1234 3571 current 4 2 7 7 current	5 0 61 <1 886 1086 1038 1200 3407 history1 4 2 2 2 history1	9 0 60 0 842 1022 994 1105 3117 history2 3 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	4 0 65 <1 911 1124 1076 1234 3571 <i>current</i> 4 2 7 <i>current</i> 0.7	5 0 61 <1 886 1086 1038 1200 3407 history1 4 2 2 2 history1 0.8	9 0 60 0 842 1022 994 1105 3117 history2 3 <1 0 history2 0.6
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	4 0 65 <1 911 1124 1076 1234 3571 current 4 2 7 current 0.7 7.4 19.1	5 0 61 <1 886 1086 1038 1200 3407 history1 4 2 2 history1 0.8 7.9	9 0 60 0 842 1022 994 1105 3117 history2 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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 limit/base >20 limit/base >4 >20	4 0 65 <1 911 1124 1076 1234 3571 current 4 2 7 current 0.7 7.4 19.1	5 0 61 <1 886 1086 1038 1200 3407 history1 4 2 2 history1 0.8 7.9 18.6	9 0 60 0 842 1022 994 1105 3117 history2 3 <1 0 history2 0.6 6.4 18.0
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 ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	4 0 65 <1 911 1124 1076 1234 3571 <i>current</i> 4 2 7 <i>current</i> 0.7 7.4 19.1	5 0 61 <1 886 1086 1038 1200 3407 history1 4 2 2 history1 0.8 7.9 18.6 history1	9 0 60 0 842 1022 994 1105 3117 history2 3 <10 0 history2 0.6 6.4 18.0 history2

Submitted By: GFL166,GFL172,GFL180,GFL867,GFL868,GFL955 - Chelsea Bryan



OIL ANALYSIS REPORT





Aug9/23 -

Mar17/23

Nov28/22

an 20/73

May1/24 -

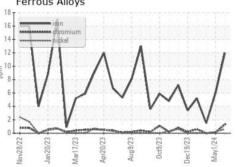
Dec19/23

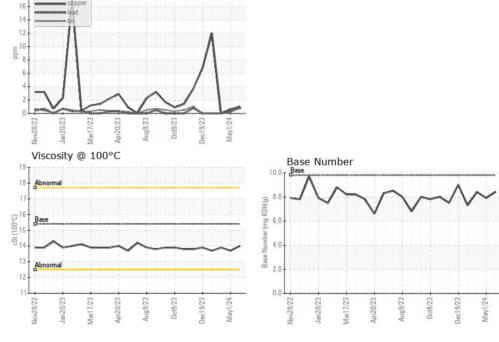
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.7	13.9
GRAPHS						

Ferrous Alloys

Non-ferrous Metals





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 868 - Childersburg Fines Hauling (Alpine) 13737 Plant Rd Sample No. : GFL0115845 Received : 22 May 2024 Lab Number : 06187360 Tested : 23 May 2024 Childersburg, AL Unique Number : 11044112 Diagnosed : 23 May 2024 - Wes Davis US 35044 Test Package : FLEET Contact: JONATHAN WILLIAMS Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jonathan.williams@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

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

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