

OIL ANALYSIS REPORT

Sample Rating Trend





913130 Component Diesel Engine Fluid

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

SAMPLE INFORMATION method

DIAGNOSIS	
Recommendation	

Resample at the next service interval to monitor.

Machine Id

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 INFORM		method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0121975	GFL0096875	
Sample Date		Client Info		10 Jun 2024	11 Jan 2024	
Machine Age	hrs	Client Info		0	0	
Oil Age	hrs	Client Info		600	600	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
		and the set	Preside Marca and		la factoria and	history O
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	7	6	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>5	3	2	
Titanium	ppm	ASTM D5185m	>2	0	<1	
Silver	ppm	ASTM D5185m	>2	<1	0	
Aluminum	ppm	ASTM D5185m	>20	2	<1	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m	>330	2	2	
Tin	ppm	ASTM D5185m	>15	0	1	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		history1 3	history2
	ppm ppm			current 8 0		
Boron Barium	ppm	ASTM D5185m	0	8	3	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	8 0	3 0	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8 0 61	3 0 57	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	8 0 61 <1	3 0 57 <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	8 0 61 <1 942	3 0 57 <1 917	
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	8 0 61 <1 942 1073	3 0 57 <1 917 1038	
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	8 0 61 <1 942 1073 1038	3 0 57 <1 917 1038 1006	
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	0 0 60 0 1010 1070 1150 1270	8 0 61 <1 942 1073 1038 1258	3 0 57 <1 917 1038 1006 1167	
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	8 0 61 <1 942 1073 1038 1258 3480 current	3 0 57 <1 917 1038 1006 1167 2662 history1	
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	8 0 61 <1 942 1073 1038 1258 3480 current 4	3 0 57 <1 917 1038 1006 1167 2662 history1 3	 history2
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	8 0 61 <1 942 1073 1038 1258 3480 current 4 3	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2	 history2
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 >20	8 0 61 <1 942 1073 1038 1258 3480 current 4 3 3	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 2 <1	 history2
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	8 0 61 <1 942 1073 1038 1258 3480 current 4 3 3 3 Current	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 <1 4 history1	 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 <u>limit/base</u> >20	8 0 61 <1 942 1073 1038 1258 3480 current 4 3 3	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 <1 2 <1 history1 0.2	 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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 <u>limit/base</u> >20	8 0 61 <1 942 1073 1038 1258 3480 current 4 3 3 3 current 0.3 7.0	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 2 <1 3 2 <1 history1 0.2 6.0	 history2 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 <u>limit/base</u> >20	8 0 61 <1 942 1073 1038 1258 3480 <u>current</u> 4 3 3 3 <u>current</u> 0.3	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 <1 2 <1 history1 0.2	 history2 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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	8 0 61 <1 942 1073 1038 1258 3480 current 4 3 3 3 current 0.3 7.0	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 2 <1 3 2 <1 history1 0.2 6.0	 history2 history2
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 TS 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	8 0 61 <1 942 1073 1038 1258 3480 <u>current</u> 4 3 3 3 <u>current</u> 0.3 7.0 19.1	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 <1 3 2 <1 0.2 6.0 17.9	 history2 history2 history2
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 TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	8 0 61 <1 942 1073 1038 1258 3480 Current 4 3 3 Current 0.3 7.0 19.1 Current	3 0 57 <1 917 1038 1006 1167 2662 history1 3 2 <1 3 2 <1 0.2 6.0 17.9 history1	 history2 history2 history2 history2 history2



OIL ANALYSIS REPORT

FT-IR (Direct Trend)	VISUAL	method	limit/base curr	ent history1 history2
30 - Oxidation	White Metal	scalar *Visual	NONE NONE	NONE
25	Yellow Metal	scalar *Visual	NONE NONE	
B) 20	Precipitate	scalar *Visual	NONE NONE	
	Silt	scalar *Visual	NONE NONE	
	Debris	scalar *Visual	NONE NONE	
10	Sand/Dirt	scalar *Visual	NONE NONE	
24		scalar *Visual	NORML NORM	
Jan 11/24	Appearance Odor	scalar *Visual	NORML NORM	
	Emulsified Water	scalar *Visual	>0.2 NEG	NEG
Base Number	Free Water	scalar *Visual	NEG	NEG
	FLUID PROP		limit/base curr	
(0.8 °C) (0.8 °C) (0.0 °C) (0.	Visc @ 100°C	cSt ASTM D44		14.2
ь щи 4.0- ее д.0-	GRAPHS			
g 2.0	Ferrous Alloys			
0.0	iron 8			
Lan Lan	6			
Viscosity @ 100°C	E d			
18 - Abnormal	4			
17	2 -			
0 16 Base 0 15		*******		
	an11/24		0/24 -	
13 Abnormal	Jan 1		Jun 10/24	
12	Non-ferrous Met	als		
Jan 11/24	10 T conner 1			
- and	copper lead			
	tin tin			
	6			
	E.			
	2			
	11/24		0/24	
	Jan 11		Jun 10/24	
	Viscosity @ 100	°C	Base N	umber
	19 T		10.0 Base	
	18 - Abnormal			
	17		(B 8.0	
	Base 15 15 15 15 15 14		- 0.8 - 0.4 KOH(0) - 0.4 KOH(0) - 0.4 KOH(0)	
	2 15 - to		()	
			§ 4.0	
	13 Abnormal		2.0-	
	12-			
	24 11 11		74 U.0 V.	24
	Jan 11/24		Jun 10/24 Jan 11/24	Jun 10/24
		501 Madison Ave Ca		FL Environmental - 401 - Fort Wayne Hauling
Sample I	No. : GFL0121975	Received :	17 Jun 2024	4429 ALLEN MARTIN DR
	nber : 06211394		18 Jun 2024	FORT WAYNE, IN
	mber : 11084258	Diagnosed :	18 Jun 2024 - Wes Davis	US 46806
	kage : FLEET eport, contact Customer Se	nvice at 1_800_007 10	69	Contact: Zachory Roehm zroehm@gflenv.com
	that are outside of the ISO			Zroenn@glienv.com T:
	to specifications are based			

Report Id: GFL401 [WUSCAR] 06211394 (Generated: 06/21/2024 22:08:38) Rev: 1

Submitted By: See also GFL401 - ZACHORY ROEHM