

OIL ANALYSIS REPORT

Sample Rating Trend



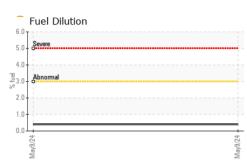


Component Diesel Engine PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Recommendation	Sample Number		Client Info		GFL0115658		
Oil and filter change at the time of sampling has	Sample Date		Client Info		09 May 2024		
been noted. Resample at the next service interval	Machine Age	hrs	Client Info		594		
to monitor.	Oil Age	hrs	Client Info		0		
Wear	Oil Changed		Client Info		Changed		
Metal levels are typical for a new component	Sample Status				ATTENTION		
breaking in.							
Contamination	CONTAMINAT	ION	method	limit/base		history1	history2
Fuel content negligible. There is no indication of any contamination in the oil.	Water		WC Method	>0.2	NEG		
	Glycol		WC Method		NEG		
Fluid Condition The oil viscosity is lower than normal. The BN result	WEAR METAL	S	method	limit/base	current	history1	history2
indicates that there is suitable alkalinity remaining in	Iron	ppm	ASTM D5185m	>120	34		
the oil. Confirm oil type.	Chromium	ppm	ASTM D5185m		1		
	Nickel	ppm	ASTM D5185m		5		
	Titanium	ppm	ASTM D5185m	>2	<1		
	Silver	ppm	ASTM D5185m		<1		
	Aluminum	ppm	ASTM D5185m		12		
	Lead	ppm	ASTM D5185m	>40	0		
	Copper	ppm	ASTM D5185m		151		
	Tin	ppm	ASTM D5185m		<1		
	Vanadium	ppm	ASTM D5185m		0		
	Cadmium	ppm	ASTM D5185m		0		
		le le					
	ADDITIVES		method	limit/base		history1	history2
	Boron	ppm	ASTM D5185m		201		
	Barium	ppm	ASTM D5185m		0		
	Molybdenum	ppm	ASTM D5185m	60	109		
	Manganese						
	-	ppm	ASTM D5185m		5		
	Magnesium	ppm	ASTM D5185m	1010	695		
	Magnesium Calcium		ASTM D5185m ASTM D5185m	1010 1070	695 1503		
	Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	695 1503 743		
	Magnesium Calcium Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	695 1503 743 856		
	Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	695 1503 743		
	Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	695 1503 743 856 2678		
	Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base	695 1503 743 856 2678		
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1010 1070 1150 1270 2060 limit/base	695 1503 743 856 2678 current	 history1	 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	695 1503 743 856 2678 current 49	 history1 	 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20	695 1503 743 856 2678 current 49 5	 history1 	 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20	695 1503 743 856 2678 Current 49 5 30 0.4	 history1 	 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	695 1503 743 856 2678 current 49 5 30 0.4 current	 history1 	 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4	695 1503 743 856 2678 current 49 5 30 0.4 current 0.3	 history1 history1	 history2 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 225 >20 >3.0 20 >3.0 20 >3.0 20 >3.0	695 1503 743 856 2678 <i>current</i> 49 5 30 0.4 <i>current</i> 0.3 9.4	 history1 history1 	 history2 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 ASTM D3524 *ASTM D7844 *ASTM D7844	1010 1070 1150 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >3.0	695 1503 743 856 2678 current 49 5 30 0.4 current 0.3 9.4 23.8	 history1 history1 history1	 history2 history2 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm % Abs/cm Abs/cm Abs/1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 *ASTM D7844 *ASTM D7624 *ASTM D7415	1010 1070 1150 2060 2060 >25 >20 >20 >3.0 limit/base >4 >20 >30 limit/base	695 1503 743 856 2678 Current 49 5 30 0.4 Current 0.3 9.4 23.8 Current	 history1 history1 	 history2 history2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm % Abs/cm Abs/1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 ASTM D3524 *ASTM D7844 *ASTM D7844	1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >30 limit/base >25	695 1503 743 856 2678 current 49 5 30 0.4 current 0.3 9.4 23.8	 history1 history1 history1	 history2 history2 history2

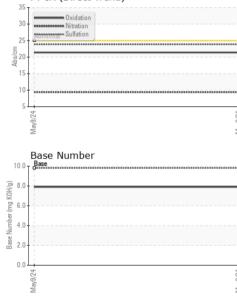


OIL ANALYSIS REPORT









Yellow Metal S Precipitate S Silt S Debris S Sand/Dirt S Appearance S Ddor S Emulsified Water S Free Water S FLUID PROPER	scalar *V scalar *V		limit/base NONE NONE NONE NONE NORML NORML >0.2 limit/base 15.4	NONE NONE NONE NONE NONE NORML NORML NEG NEG		y1 history2
Vellow Metal	scalar *V scalar *V	/isual /isual /isual /isual /isual /isual /isual method STM D445	NONE NONE NONE NORML NORML >0.2 Iimit/bass	NONE NONE NONE NONE NORML NORML NEG NEG	 t histor	y1 history2
Precipitate s Silt s Debris s Sand/Dirt s Appearance s Dodor s Free Water s FLUID PROPER /isc @ 100°C c GRAPHS Ferrous Alloys Ferrous Alloys Mon-ferrous Metals	scalar *V scalar *V scalar *V scalar *V scalar *V scalar *V scalar *V Scalar *V Scalar *V Scalar *V	/isual /isual /isual /isual /isual /isual /isual method	NONE NONE NORML NORML >0.2 limit/base	NONE NONE NONE NORML NORML NEG NEG	 t histor	y1 y1 history2
Silt sevent seve	scalar *V scalar *V scalar *V scalar *V scalar *V scalar *V scalar *V Scalar *V Scalar AS	/isual /isual /isual /isual /isual /isual method	NONE NONE NORML NORML >0.2 limit/base	NONE NONE NONE NORML NORML NEG NEG e current	 t histor	 y1 history2
Debris s Sand/Dirt s Sand/Dirt s Sppearance s Ddor s Emulsified Water s Free Water s Fice Water s Visc @ 100°C c GRAPHS Ferrous Alloys Ferrous Alloys s Non-ferrous Metals s Standard Copper s	scalar *V scalar *V scalar *V scalar *V scalar *V Scalar *V Scalar *V	/isual /isual /isual /isual /isual method STM D445	NONE NORML NORML >0.2 limit/base 15.4	NONE NORML NORML NEG NEG e current	 t histor	 y1 history2
Sand/Dirt s Appearance s Odor s Emulsified Water s Free Water s FLUID PROPER /isc @ 100°C c GRAPHS Ferrous Alloys Implement of the second se	scalar *V scalar *V scalar *V scalar *V scalar *V RTIES r cSt AS	/isual /isual /isual /isual method STM D445	NONE NORML >0.2 limit/base 15.4	NONE NORML NORML NEG NEG e current	 t histor	 y1 history2
Appearance s Dodor s Emulsified Water s Free Water s FLUID PROPER Visc @ 100°C c GRAPHS Ferrous Alloys	scalar *V scalar *V scalar *V scalar *V RTIES r cSt AS	/isual /isual /isual method STM D445	NORML NORML >0.2 limit/base 15.4	NORML NORML NEG NEG e current	 t histor	 y1 history2
Odor s Emulsified Water s Free Water s FLUID PROPER s /isc @ 100°C c GRAPHS s Ferrous Alloys s iron	scalar *V scalar *V scalar *V RTIES r cSt AS	/isual /isual method STM D445	NORML >0.2 limit/base 15.4	NORML NEG NEG e current	 t histor	 y1 history2
FLUID PROPER FLUID PROPER Visc @ 100°C GRAPHS Ferrous Alloys Ferrous Alloys Mon-ferrous Metals	scalar *V scalar *V RTIES r cSt AS	'isual nethod STM D445	>0.2 limit/base 15.4	NEG NEG e current	 t histor	 y1 history2
Free Water	scalar *V RTIES r cSt AS	/isual nethod STM D445	limit/base	NEG e current	t histor	y1 history2
FLUID PROPER /isc @ 100°C @ GRAPHS Ferrous Alloys	RTIES r	nethod STM D445	15.4	e current	t histor	y1 history2
Visc @ 100°C GRAPHS Ferrous Alloys	cSt AS	STM D445	15.4			
GRAPHS Ferrous Alloys				• 10.0		
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iron chromium nickel 627626 W Non-ferrous Metals						
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Z Viscosity @ 100°C			~	Base Num	bor	
			1	Base Num		
Abnormal						
Pasa			(B/F	8.0-		
Base			Base Number (mg KOH/g)	6.0-		
			er (mg			
Abnormal			d mb	4.0		
			ase			
				2.0-		
				0.0		
3/24			9/24 -			2 2
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EL0115658	Madison A Received		, NC 27513 Jun 2024	3 GFL		II - 916 - Greenbay H '99 County Trunk Pl

Lab Number : 06197322 : 05 Jun 2024 - Jonathan Hester Unique Number : 11059445 Diagnosed Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel) Contact: Travis Runge Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. travis.runge@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (920)351-2341 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: GFL916 [WUSCAR] 06197322 (Generated: 06/05/2024 11:23:03) Rev: 1

Laboratory Sample No.

> Contact/Location: Travis Runge - GFL916 Page 2 of 2

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