

## **OIL ANALYSIS REPORT**

Sample Rating Trend





913170 Component Diesel Engine PETRO CANADA DURON SHP 15W40 (--- GAL)

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.

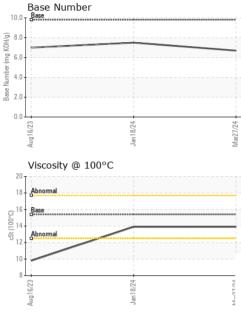
### Fluid Condition

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

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0112977	GFL0108417	GFL0089499
Sample Date		Client Info		27 Mar 2024	18 Jan 2024	16 Aug 2023
Machine Age	hrs	Client Info		2358	1741	585
Oil Age	hrs	Client Info		2358	1741	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	0.4
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	>80	22	17	54
Chromium	ppm	ASTM D5185m	>5	1	<1	2
Nickel	ppm	ASTM D5185m	>2	4	1	<u> </u>
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>30	2	1	7
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>150	2	2	42
Tin	ppm	ASTM D5185m	>5	<1	<1	4
Vanadium	ppm	ASTM D5185m		0	0	0
				-		
Cadmium	ppm	ASTM D5185m		<1	0	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	-	0 history1	0 history2
	ppm ppm		limit/base 0	<1	-	
ADDITIVES		method ASTM D5185m		<1 current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 current <1	history1 2 0 62	history2 223 0 134
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 current <1 0	history1 2 0 62 <1	history2 223 0 134 6
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 current <1 0 65 <1 1005	history1 2 0 62 <1 968	history2 223 0 134 6 727
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 current <1 0 65 <1 1005 1131	history1 2 0 62 <1 968 1094	history2 223 0 134 6 727 1617
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	<1 current <1 0 65 <1 1005 1131 977	history1 2 0 62 <1 968 1094 1016	history2 223 0 134 6 727 1617 746
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 0 1010 1070 1150 1270	<1 current <1 0 65 <1 1005 1131 977 1281	history1 2 0 62 <1 968 1094 1016 1235	history2 223 0 134 6 727 1617 746 912
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 current <1 0 65 <1 1005 1131 977	history1 2 0 62 <1 968 1094 1016 1235 3154	history2 223 0 134 6 727 1617 746
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current	history1 2 0 62 <1 968 1094 1016 1235 3154 history1	history2 223 0 134 6 727 1617 746 912 2822 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5	history1           2           0           62           <1           968           1094           1016           1235           3154           history1           4	history2 223 0 134 6 727 1617 746 912 2822 history2 ▲ 94
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5 2	history1           2           0           62           <1           968           1094           1016           1235           3154           history1           4           0	history2 223 0 134 6 727 1617 746 912 2822 history2 ∮94 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5	history1           2           0           62           <1           968           1094           1016           1235           3154           history1           4	history2 223 0 134 6 727 1617 746 912 2822 history2 ▲ 94 5 12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 220 220 220	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5 2 4 current	history1         2         0         62         <1         968         1094         1016         1235         3154         history1         4         0         2         history1	history2 223 0 134 6 727 1617 746 912 2822  history2   94 5 12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 220 220 20 20	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5 2 4 current 0.8	history1         2         0         62         <1         968         1094         1016         1235         3154         history1         4         0         2         history1         0         2         0.6	history2         223         0         134         6         727         1617         94         5         12         12         12         04         09.0         12         0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 200 imit/base >20	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5 2 4 current 0.8 9.8	history1         2         0         62         <1         968         1094         1016         1235         3154         history1         4         0         2         history1         0         2         0.6         9.0	history2         223         0         134         6         727         1617         746         912         2822         history2         12         12         12         12         history2         0.6         10.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 220 220 20 20 20	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5 2 4 current 0.8	history1         2         0         62         <1         968         1094         1016         1235         3154         history1         4         0         2         history1         0         2         0.6	history2         223         0         134         6         727         1617         94         5         12         12         12         04         09.0         12         0.6
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 200 imit/base >20	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5 2 4 current 0.8 9.8	history1         2         0         62         <1         968         1094         1016         1235         3154         history1         4         0         2         history1         0         2         0.6         9.0	history2         223         0         134         6         727         1617         746         912         2822         history2         12         12         12         12         history2         0.6         10.6
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 220 20 20 3 20 3 20 3 20 3 3 20 3 3 3	<1 current <1 0 65 <1 1005 1131 977 1281 3104 current 5 2 4 current 0.8 9.8 21.5	history1         2         0         62         <1         968         1094         1016         1235         3154         history1         4         0         2         history1         0.6         9.0         20.4	history2         223         0         134         6         727         1617         94         5         12         •         04.5         12.0         •         10.6         25.3



# **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	
Jan 18/24 Mar27/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
Jan	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	13.9	9.8	
	GRAPHS							
	Ferrous Alloys							
24	iron							
Jan 18/24	nickel							
	40							
	틆 30							
	20							
	10-							
			An age of the second strength in second strength in the second stren					
	33	/24		724				
	Aug16/23	Jan 18/24		Mar27/24				
	Non-ferrous Meta	ls		~				
	45 T							
	40 - copper							
	35 tin							
	E 25							
	15							
	10							
		$\sim$						
	Aug16/23	an 18/24 -		ar27/24				
		7		Mar				
	Viscosity @ 100°(			10.0	Base Number			
	18 - Abnormal							
	16 Base			(B/HO				
	D Base			9.6.0				
	() 00 114 35 Abnormal			0.0 0.0 Base Number (mg KOH/g)				
	12							
	10			2.0				
	8							
	6/23	8/24 -			6/23	8/24 -		
	Aug16/23	Jan 18/24		Mar27/24	Aug16/23	Jan 18/24		
		Madia -				diversion of the second se	10 Henderd	
I	: WearCheck USA - 50 : GFL0112977	1 Madiso <b>Recei</b>		, NC 27513 Apr 2024	GFL EN		918 - Hartland H E Industrial Driv	
Laboratory Sample No.		000	Hartland, V					
Laboratory Sample No. Lab Number		Teste						
Sample No. Lab Number Unique Number	: <mark>06134702</mark> : 10954167				Baldridge		US 5302	
Sample No. Lab Number	: <mark>06134702</mark> : 10954167 : FLEET	Diagr	iosed : 03	Apr 2024 - Don	Baldridge			