

### **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# EX0200

#### Component Diesel Engine

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

#### 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

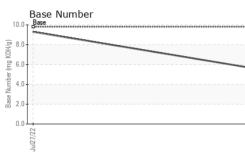
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

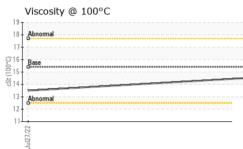
SAMPLE INFORI	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		GFL0055943	GFL0055904	
Sample Date		Client Info		28 Jun 2023	27 Jul 2022	
Machine Age	hrs	Client Info		111	111	
Oil Age	hrs	Client Info		111	0	
Oil Changed		Client Info		N/A	Changed	
Sample Status				NORMAL	ABNORMAL	
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	18	73	
Chromium	ppm	ASTM D5185m	>20	<1	5	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		8	83	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	3	11	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m	>330	2	12	
Tin	ppm		>15	0	0	
Vanadium	ppm	ASTM D5185m	210	0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
	ppin			Ŭ		
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	0	163	141	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	163 2	141 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	163 2 2	141 0 6	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	163 2 2 <1	141 0 6 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	163 2 2 <1 545	141 0 6 <1 379	
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	163 2 2 <1 545 1246	141 0 6 <1 379 1877	  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	163 2 2 <1 545 1246 930	141 0 6 <1 379 1877 1061	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	163 2 2 <1 545 1246 930 1039	141 0 6 <1 379 1877 1061 1229	  
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	0 0 60 0 1010 1070 1150	163 2 2 <1 545 1246 930	141 0 6 <1 379 1877 1061	   
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	163 2 2 <1 545 1246 930 1039	141 0 6 <1 379 1877 1061 1229 4763 history 1	    
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 1010 1070 1150 1270 2060	163 2 2 <1 545 1246 930 1039 3519 current 6	141 0 6 <1 379 1877 1061 1229 4763 history 1 15	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 1010 1070 1150 1270 2060	163 2 2 <1 545 1246 930 1039 3519 current	141 0 6 <1 379 1877 1061 1229 4763 history 1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 1010 1070 1150 1270 2060	163 2 2 <1 545 1246 930 1039 3519 current 6	141 0 6 <1 379 1877 1061 1229 4763 history 1 15	    history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	163 2 2 <1 545 1246 930 1039 3519 Current 6 6	141 0 6 <1 379 1877 1061 1229 4763 <b>history 1</b> 15 ▲ 63	     history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	163 2 2 <1 545 1246 930 1039 3519 current 6 6 17	141 0 6 <1 379 1877 1061 1229 4763 history 1 15 63 €3 88	    history 2
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 <b>limit/base</b> >25	163 2 2 <1 545 1246 930 1039 3519 current 6 6 17 current	141 0 6 <1 379 1877 1061 1229 4763 history 1 15 63 € 88 history 1	     history 2    history 2
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 ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	163 2 2 <1 545 1246 930 1039 3519 <u>current</u> 6 6 17 <u>current</u> 0.8	141 0 6 <1 379 1877 1061 1229 4763 history 1 15 € 63 88 history 1 0.6	     history 2  history 2 
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	163 2 2 <1 545 1246 930 1039 3519 current 6 6 17 current 0.8 12.6	141 0 6 <1 379 1877 1061 1229 4763 history 1 15 63 63 88 history 1 0.6 9.3	     history 2   history 2 
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 3 20 3 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	163 2 2 <1 545 1246 930 1039 3519 current 6 6 17 current 0.8 12.6 24.3	141 0 6 <1 379 1877 1061 1229 4763 ► history 1 15 ▲ 63 ▲ 88 ► history 1 0.6 9.3 21.1	    history 2  history 2  history 2
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 D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	163 2 2 <1 545 1246 930 1039 3519 Current 6 6 6 17 Current 0.8 12.6 24.3 Current	141 0 6 <1 379 1877 1061 1229 4763 ► history 1 15 ▲ 63 ▲ 88 ► history 1 0.6 9.3 21.1 ► history 1	    history 2  history 2  history 2  history 2 



## **OIL ANALYSIS REPORT**

VISUAL





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White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	scalar	*Visual	NONE		NONE	
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		visuai			NLG	
		method				history 2
	cSt	ASTM D445	15.4	14.5	13.5	
70- iron						
chromium						
10						
22			53			
/12.1/			n28/			
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	als					
copper ]						
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ld 6-						
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18 - Abnormal						
17				8.0		
C16			KOH			
0 15			(mg	5.0 <b>-</b>		
<del>.</del> 53 <sub>14</sub>			mpe	1.0		
10			se Nu			
			Ba	2.0 -		
11						
2/L2Ir			n28/2	2/L21		
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	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys To To To To To To To To To To	White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar FLUID PROPERTIES Visc @ 100°C cSt GRAPHS Ferrous Alloys Non-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C	White Metal scalar *Visual Yellow Metal scalar *Visual Precipitate scalar *Visual Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Codor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Visual Full D PROPERTIES method Visc @ 100°C cSt ASTM D445 GRAPHS Ferrous Alloys Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Search State St	White Metal scalar *Visual NONE Yellow Metal scalar *Visual NONE Precipitate scalar *Visual NONE Sitt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Emulsified Water scalar *Visual NORML Free Water scalar *Visual NORML Emulsified Water scalar *Visual NORML Codor scalar *Visual NORML Emulsified Water scalar *Visual SOL2 Free Water scalar *Visual SOL2 Free Water scalar *Visual SOL2 Visc @ 100°C cSt ASTM D445 15.4 GRAPHS Ferrous Alloys Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Uscosity @ 100°C Uscosity @ 100°C CSt ASTM D445 15.4 CRAPHS Ferrous Metals Comment Solution Are., Cary, NC 275 GFL0055943 Comment Solution Are., Cary, NC 275 GFL0055943 Diagnosed : 05 Jul 2023 Diagnoset : 05 Jul 2023 Diagnoset : 05 Jul 2023 Diagnoset : 05 Jul 2023 Comment Solut 2023 Solut 202	White Metal scalar Visual NONE NONE Yellow Metal scalar Visual NONE NONE Precipitate scalar Visual NONE NONE Sit scalar Visual NONE NONE Sand/Dit scalar Visual NONE NONE Sand/Dit scalar Visual NONE NONE Appearance scalar Visual NORML NORML Odor scalar Visual NORML NORML Codor scalar Visual NORML NORML Emulsified Water scalar Visual NORML NORML Tree Water scalar Visual NORML NORML Visc @ 100°C cSt ASTM D445 15.4 14.5 GRAPHS Ferrous Alloys Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0055943 Received :: 03 Jul 2023 : 05888754 Diagnoset :: 05 Jul 2023 : 05888754 Diagnoset :: 05 Jul 2023 : 05888754 Diagnoset :: 05 Jul 2023	White Metal scalar 'Visual NONE NONE NONE NONE Precipitate scalar 'Visual NONE NONE NONE NONE Precipitate scalar 'Visual NONE NONE NONE NONE Debris scalar 'Visual NONE NONE NONE NONE Appearance scalar 'Visual NORML NORML NORML NORML Odor scalar 'Visual NORML NORML NORML NORML NORML NORML NORML NORML Visco (20100°C cSt ASTM D445 15.4 14.5 13.5 GRAPHS Ferrous Alloys



 Certificate L2367
 Test Package
 : FLEET

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
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 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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