

## **OIL ANALYSIS REPORT**

Sample Rating Trend





DIAGNOSIS

Recommendation

Contamination

Fluid Condition

oil is suitable for further service.

Wear

oil

Machine Io 920104-275 Component

**Diesel Engine** 

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

## SAMPLE INFORMATION method GFL0066109 GFL0103371 GFL0066042 Sample Number **Client Info** Resample at the next service interval to monitor. 04 Dec 2023 Sample Date Client Info 17 Aug 2023 13 Mar 2023 0 0 Machine Age mls **Client Info** 0 All component wear rates are normal. Oil Age mls Client Info 0 0 0 Oil Changed N/A N/A N/A **Client Info** NORMAL Sample Status NORMAL NORMAL There is no indication of any contamination in the CONTAMINATION Fuel >3.0 WC Method <1.0 <1.0 <1.0 The BN result indicates that there is suitable Water WC Method >0.2 NEG NEG NEG alkalinity remaining in the oil. The condition of the Glycol WC Method NEG NEG NEG WEAR METALS >120 10 11 14 Iron ppm ASTM D5185m ASTM D5185m >20 <1 Chromium ppm <1 <1 Nickel >5 ppm ASTM D5185m <1 <1 1 Titanium ppm ASTM D5185m >2 0 0 <1 Silver ASTM D5185m 0 0 0 >2 ppm 2 Aluminum >20 4 2 ppm ASTM D5185m Lead ASTM D5185m >40 <1 <1 0 ppm ASTM D5185m >330 6 2 2 Copper ppm Tin ppm ASTM D5185m >15 0 <1 <1 Vanadium ppm ASTM D5185m 0 0 <1 Cadmium 0 0 ASTM D5185m 0 ppm ADDITIVES Boron mag ASTM D5185m 0 4 5 7 Barium ASTM D5185m 0 0 0 0 ppm Molybdenum ASTM D5185m 60 59 63 64 ppm ASTM D5185m 0 Manganese ppm <1 <1 <1 Magnesium ASTM D5185m 1010 942 970 931 ppm Calcium ppm ASTM D5185m 1070 1076 1206 1144 Phosphorus ASTM D5185m 1150 857 1009 960 ppm Zinc ppm ASTM D5185m 1270 1179 1318 1167 Sulfur ASTM D5185m 2060 2793 3378 3094 ppm CONTAMINANTS 3 3 Silicon ASTM D5185m >25 4 ppm 2 Sodium ASTM D5185m 5 4 ppm Potassium ASTM D5185m >20 0 5 ppm <1 **INFRA-RED** 0.4 % 0.5 0.5 Soot % \*ASTM D7844 >4 Nitration Abs/cm \*ASTM D7624 >20 8.5 7.9 9.3 20.0 Sulfation \*ASTM D7415 >30 19.8 20.2 Abs/.1mm FLUID DEGRADATION \*ASTM D7414 >25 16.0 16.0 16.0 Oxidation Abs/.1mm

Base Number (BN) mg KOH/g ASTM D2896 9.8

Contact/Location: See also GFL904, A, B, C, 927, 938) - Andy Kane - GFL904

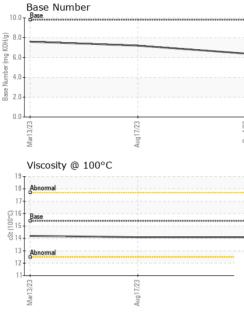
7.2

6.4

7.6



## **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
Aug17/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Aug1	Ödor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPI	ERTIES	method	limit/base	current	history1	history2
		cSt	ASTM D445	15.4	14.1	14.1	14.2
	GRAPHS						
	Ferrous Alloys						
7/23	12 - iron	_					
Aug 17/23	10-						
	_ 8						
	4						
		Mana					
	53+0	/23 -		/23			
	/lar13,	Aug17/23		Dec4/23			
	≥ Non-ferrous Meta						
	<sup>10</sup> T						
	copper						
	8 - management tin						
	6 -			1			
	6 <del>-</del>		/	/			
	6			/			
	e		/	/			
	2		/				
		53	/	53			
		017/23		Jec4/23			
	4 2 0 EC2/E JEW	Aug17/23		Dec4/23			
					Base Number		
	Viscosity @ 100°			0.0-			
	Viscosity @ 100°			10.0		-	
	Viscosity @ 100°			10.0			
	Viscosity @ 100°			10.0		-	
	Viscosity @ 100°			10.0			
	Viscosity @ 100°			10.0			
	Viscosity @ 100°			10.0 8.0 Koy Bu ag		-	
	Viscosity @ 100°	C		10.0 (6) HOX BU 100 HO			
	Viscosity @ 100° <sup>19</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>11</sup> <sup>10</sup> <sup>11</sup> <sup>10</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup>	C		10.0 (6) HOX BU 100 HO			
	Viscosity @ 100°			10.0 (BHO) BUU b uuu b aquuny asse 2.0		Aug17/23	
	Viscosity @ 100° Viscosity @ 100° Abnormal 17 1000 16 Base 10 10 10 10 10 10 10 10 10 10	C entry to the second s		10.0 (BHQ) (DHQ) (	Base	Aug17/23	
Laboratory Sample No.	Viscosity @ 100° Viscosity @ 100° Abnomal 17 1000 16 Base 14 13 Abnomal 17 14 13 Abnomal 12 11 ECE 14 13 ECE 14 13 ECE 14 ECE 15 10 ECE 10 ECE 10 ECE 10 ECE 10 ECE ECE ECE ECE ECE ECE ECE EC	C EZZLIBINY 501 Madi		10.0 (BHO) BU June June June June June June June June	Base	EZZLI <sup>Bhy</sup> rironmental - 904 - 0	Chippewa Falls H
Laboratory Sample No. Lab Numbe	Viscosity @ 100° <sup>19</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>11</sup> <sup>10</sup> <sup>10</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup> <sup>11</sup>	C entry to the second s	dl :11 l	10.0 (BHQ) (DHQ) (	Base	EZZLI <sup>Bby</sup> rironmental - 904 - 0 11888 & 118	<b>Chippewa Falls I</b> 63 30th Avenu
Sample No. Lab Numbe Unique Numb	Viscosity @ 100° Viscosity @ 100° banomal banomal banomal content of the second s	C EZ/LI BINY 501 Madii Received	d: 11 l ed: 12 l	10.0 (BHQ) BU apund 2.0 (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	Base	EZZLI <sup>Bby</sup> rironmental - 904 - 0 11888 & 118	Chippewa Falls H 63 30th Avent opewa Falls, V US 5472
Sample No. Lab Numbe Unique Numb ficate 12367 Test Packag	Viscosity @ 100° Viscosity @ 100° banomal banomal banomal content of the second s	C EZL[10my 501 Madi Receive Diagnos Diagnos	d : 11   ed : 12   tician : We	10.0 (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Base	tironmental - 904 - 4 11888 & 118 Chip	<b>Chippewa Falls I</b> 63 30th Avenu opewa Falls, V

Contact/Location: See also GFL904, A, B, C, 927, 938) - Andy Kane - GFL904