

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Ic 428038-402363 Component

Diesel Engine Fluid

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

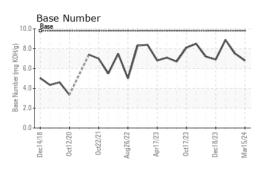
	0.12020	0.0001	1 2022	A 2022	0.0000	0.0000	14.0
2010							

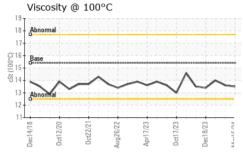


commendation sample at the next service interval to monitor.Sample NumberClient InfoGFL0109149GFL0109237GFL0109200Sample DateClient Info15 Mar 202416 Feb 202406 Feb 2024Machine AgehrsClient Info171321696016821Oil AgehrsClient Info600700600Oil ChangedClient InfoChangedNot ChangedChangedSample StatusImageNORMALNORMALNORMALCONTAMINATIONmethodlimit/basecurrenthistory1				ec2018 Octá	2020 Oct2021 Aug20	022 Apr2023 Oct2023 Dec2	023 Mar202	
Sample at the next service interval to monitor. Sample Date Client Info 15 Mar 2024 16 Fab 2024 06 Fab 2024 national or any contamination in the is no indication of any contamination of the oil. The condition of	DIAGNOSIS	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
math Main Main <th< td=""><td>ecommendation</td><td>Sample Number</td><td></td><td>Client Info</td><td></td><td>GFL0109149</td><td>GFL0109237</td><td>GFL0109200</td></th<>	ecommendation	Sample Number		Client Info		GFL0109149	GFL0109237	GFL0109200
Open part wear rates are normal. Open part wear rates ar	esample at the next service interval to monitor.	Sample Date		Client Info		15 Mar 2024	16 Feb 2024	06 Feb 2024
Intermination are is no indication of any contamination in the set is no indication of any contamination in the subtrable for burther is suitable alinity remaining in the oil. The condition of the is suitable for burther service. Oil Changed Sample Status Client Info Changed NORMAL Changed NEG NEG NEG </td <td>ear</td> <td>Machine Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <td>17132</td> <td>16960</td> <td>16821</td>	ear	Machine Age	hrs	Client Info		17132	16960	16821
Diama Diama Clianaged Clianaged Clianaged Normal Normal Normal Normal bit continuine Bit result indicates that there is suitable all ity remaining in the oil. The condition of the suitable for further service. Image: Status Image: Status<	component wear rates are normal.	Oil Age	hrs	Client Info		600	700	600
Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL id Condition EN result indicates that there is suitable is suitable for further service. Sample Status Imitbase current Imitbase Current Imitbase Fuel WC Method >3.0 <1.0		Oil Changed		Client Info		Changed	Not Changd	Changed
CONTAMULTION CONTAMUNATION method funitions current history1 history2 BV result indicates that there is suitable alinity remaining in the oil. The condition of the is suitable for further service. Fuel WC Method >3.0 <1.0		-				-		
idl Condition Fuel WC Method >3.0 <1.0			ION	method	limit/base	current		history2
Part Noticities number is suitable for further is suitable for further service. Water W0 Method >0.2 NEG NEG NEG Water Glycol WC Method NEG NEG NEG NEG is suitable for further service. WetAR METALS method imitibase current history1 history1 Iron ppm ASTM0585m >20 0 <1	uid Condition							
Bit souldable for further service. Glycol WC Method Immichase NEG NEG NEG Iron ppm ASTM D5158m >120 5 4 0 Chromium ppm ASTM D5158m >5 0 0 0 Nickel ppm ASTM D5158m >5 0 0 0 Nickel ppm ASTM D5158m >2 0 -1 0 Atuminum ppm ASTM D5158m >2 0 -1 0 Silver ppm ASTM D5158m >20 2 -1 1 -1 Lead ppm ASTM D5158m 330 0 -1 -1 1 Tin ppm ASTM D5158m 330 0 -1 -1 1 Adamaganese ppm ASTM D5158m 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0								
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >12.0 5 4 0 Chromium ppm ASTM D5185m >5.0 0 -1 0 Nickel ppm ASTM D5185m >2 0 -1 0 Silver ppm ASTM D5185m >2 0 0 0 Auminum ppm ASTM D5185m >20 2 2 -1 Lead ppm ASTM D5185m >330 0 -1 2 Copper ppm ASTM D5185m >330 0 -1 2 Copper ppm ASTM D5185m >15 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 3 Barium ppm ASTM D5185m 0 0 1	, ,				>0.2			
iron ppm ASTM D5185m >12.0 5 4 0 Chromium ppm ASTM D5185m >5.0 0 -1 0 Nickel ppm ASTM D5185m >5.2 0 -1 0 Silver ppm ASTM D5185m >2.2 0 -1 0 Auminum ppm ASTM D5185m >2.0 2 -1 2 Lead ppm ASTM D5185m >3.0 0 -1 2 Copper ppm ASTM D5185m >15 0 0 -1 Tin ppm ASTM D5185m 15 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 ADDITIVES method limbbase current history1 history1 history2 Barium ppm ASTM D5185m 1010 1021 937 810 Cadium ppm ASTM D5185m <td></td> <td>-</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td>		-	0					
Chromium ppm ASTM D5185m >20 0 <1 0 Nickel ppm ASTM D5185m >2 0 <1		WEAR METAL	.S	method	limit/base	current	history1	
Nickel ppm ASTM D5185n >-5 0 0 0 Thanium ppm ASTM D5185n >-2 0 <1		Iron	ppm	ASTM D5185m	>120	5	4	0
Titanium ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 2 2 2 Lead ppm ASTM D5185m >40 0 <-1		Chromium	ppm	ASTM D5185m	>20	0	<1	0
Silver ppm ASTM D5185m >2 0 0 0 Aturninum ppm ASTM D5185m >20 2 2 2 1 Lead ppm ASTM D5185m >20 0 0 <1 2 Copper ppm ASTM D5185m >330 0 <1 <1 <1 Tin ppm ASTM D5185m >15 0 0 0 0 Cadminium ppm ASTM D5185m >15 0 0 0 0 ADDITIVES method timi/base current history1 history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 Magnesum ppm ASTM D5185m 0 0 0 0 0 Magnesum ppm ASTM D5185m 0 0 0 0 0 Magnesum ppm ASTM D5185m 1010 1021 957 810 Galoium ppm ASTM D5185m 1070 1142 1		Nickel	ppm	ASTM D5185m	>5	0	0	0
Aluminum ppm ASTM D5185m >20 2 2 <1 Lead ppm ASTM D5185m >40 0 <1		Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead ppm ASTM D5185m >440 0 <1 2 Copper ppm ASTM D5185m >330 0 <10 <10 Tin ppm ASTM D5185m >15 0 0 0 Variadium ppm ASTM D5185m >15 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 010 1021 987 810 Calcium ppm ASTM D5185m 1070 11321 1072 890 Distory1 ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 20		Silver	ppm	ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >440 0 <1 2 Copper ppm ASTM D5185m >330 0 <10 <11 Tin ppm ASTM D5185m >15 0 0 <11 Vanadium ppm ASTM D5185m >15 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 3 Barium ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 11 1 Calcium ppm ASTM D5185m 1010 1021 987 810 Calcium ppm ASTM D5185m 1270 1341 1261 1080 Calcium ppm		Aluminum	ppm	ASTM D5185m	>20	2	2	<1
Copper ppm ASTM D5185m >330 0 <1 <1 Tin ppm ASTM D5185m >15 0 0 <1		Lead	ppm			0	<1	2
Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDTTVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 0 Magnanese ppm ASTM D5185m 0 0 0 0 0 0 Magnanese ppm ASTM D5185m 1010 1021 987 810 Calcium ppm ASTM D5185m 1010 1022 1072 890 Phosphorus ppm ASTM D5185m 1150 1076 1046 999 Zinc ppm ASTM D5185m 1150 1076 1048 990 Sulfur ppm ASTM D5185m 1270 1341 1261 1088 108 <td></td> <td>Copper</td> <td></td> <td></td> <td></td> <td>0</td> <td><1</td> <td></td>		Copper				0	<1	
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1						0		<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 102 Magnesium ppm ASTM D5185m 0 0 2 1 2 Magnesium ppm ASTM D5185m 1070 1122 1072 890 Phosphorus ppm ASTM D5185m 1070 1122 1072 890 Zinc ppm ASTM D5185m 1150 1076 1046 909 Zinc ppm ASTM D5185m 1270 1341 1261 1083 Sulfur ppm ASTM D5185m 25 2 4 0 Sodium ppm ASTM D5185m 26 1		Vanadium						0
Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 58 50 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 1021 987 810 Calcium ppm ASTM D5185m 1010 1021 987 810 Calcium ppm ASTM D5185m 1010 1021 987 890 Posphorus ppm ASTM D5185m 1070 1142 1064 909 Zinc ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 2060 3625 3109 2681 Soliton ppm ASTM D5185m 226 2 4 0 Soliton ppm ASTM D5185m >20 1 2 1 NFRA-RED method limit/base								
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 58 50 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 1021 987 810 Calcium ppm ASTM D5185m 1070 1122 1072 890 Phosphorus ppm ASTM D5185m 1070 1026 909 80 Zinco ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 2060 3625 3109 2681 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 1 2 1 INFRA-RED ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base		ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 59 58 50 Manganese ppm ASTM D5185m 0 0 <1		Boron	ppm	ASTM D5185m	0	0	0	3
Molybdenum ppm ASTM D5185m 60 59 58 50 Manganese ppm ASTM D5185m 0 0 <1		Barium	ppm	ASTM D5185m	0	0	0	0
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 1021 987 810 Calcium ppm ASTM D5185m 1070 1122 1072 890 Phosphorus ppm ASTM D5185m 1070 1122 1072 890 Zinc ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 2060 3625 3109 2681 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 0 Sodium ppm ASTM D5185m >20 1 2 1 Netsonum ppm ASTM D5185m >20 1 2 1 Sodium ppm ASTM D5185m >20 1 2 1 Nitration Abs/m ASTM D51		Molvbdenum				59	58	50
Magnesium ppm ASTM D5185m 1010 1021 987 810 Calcium ppm ASTM D5185m 1070 1122 1072 890 Phosphorus ppm ASTM D5185m 1150 1076 1046 909 Zinc ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 2060 3625 3109 2681 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 0 Sodium ppm ASTM D5185m >20 1 2 1 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 history2 Soot % % 'ASTM D7844 >4 0.2 0.2 0.9 Nitration Abs/tmm<'ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method l								
Calcium ppm ASTM D5185m 1070 1122 1072 890 Phosphorus ppm ASTM D5185m 1150 1076 1046 909 Zinc ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 2060 3625 3109 2681 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 0 Sodium ppm ASTM D5185m >20 1 2 1 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.9 Nitration Abs/rem *ASTM D7624 >20 7.8 7.0 5.1 Sulfation Abs/rtm *ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method		-				-		
Phosphorus ppm ASTM D5185m 1150 1076 1046 909 Zinc ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 2060 3625 3109 2681 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 0 Sodium ppm ASTM D5185m >25 2 4 0 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.9 Nitration Abs/cm *ASTM D7624 >20 7.8 7.0 5.1 Sulfation Abs/cm *ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/lmm <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		-						
Zinc ppm ASTM D5185m 1270 1341 1261 1088 Sulfur ppm ASTM D5185m 2060 3625 3109 2681 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 0 Sodium ppm ASTM D5185m >25 2 4 0 Sodium ppm ASTM D5185m >20 1 2 1 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.9 Nitration Abs/cm *ASTM D7624 >20 7.8 7.0 5.1 Sulfation Abs/tmm *ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/tmm *								
SulfurppmASTM D5185m2060362531092681CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25240SodiumppmASTM D5185m>20123<1								
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25240SodiumppmASTM D5185m>2023<1								
SiliconppmASTM D5185m>25240SodiumppmASTM D5185m23<1		CONTAMINAN		method	limit/base	current	historv1	historv2
Sodium ppm ASTM D5185m 2 3 <1 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.9 Nitration Abs/cm *ASTM D7624 >20 7.8 7.0 5.1 Sulfation Abs/1mm *ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 12.6								
PotassiumppmASTM D5185m>20121INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.9NitrationAbs/cm*ASTM D7624>207.87.05.1SulfationAbs/.1mm*ASTM D7415>3018.418.018.4FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2514.514.212.6								
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.9NitrationAbs/cm*ASTM D7624>207.87.05.1SulfationAbs/.1mm*ASTM D7415>3018.418.018.4FLUID DEGRADATION methodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2514.514.212.6					>20			
Soot % % *ASTM D7844 >4 0.2 0.2 0.9 Nitration Abs/cm *ASTM D7624 >20 7.8 7.0 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 12.6			le le					
Nitration Abs/cm *ASTM D7624 >20 7.8 7.0 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 12.6			0/					
Sulfation Abs/.1mm *ASTM D7415 >30 18.4 18.0 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 12.6								
FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2514.514.212.6								
Oxidation Abs/.1mm *ASTM D7414 >25 14.2 12.6					>30	18.4	18.0	18.4
		FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 6.8 7.5 8.9		Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	14.2	12.6
		Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.8	7.5	8.9



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
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
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	13.5	13.6	14.0
GRAPHS						

Ferrous Alloys

Aug26/22

Non-ferrous Metals

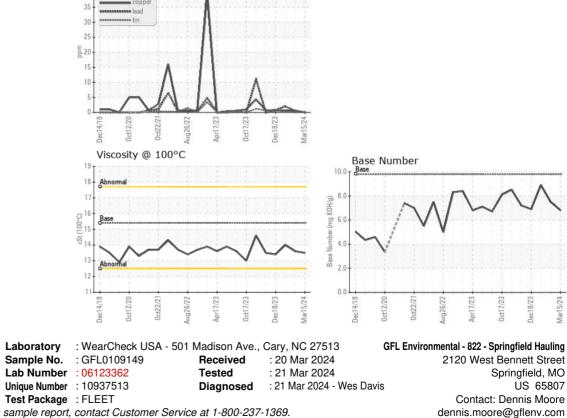
Apr17/23

0ct17/23

Jec18/23

60

40



Mar15/24

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)

Certificate L2367

F:

T: (417)403-3641