

OIL ANALYSIS REPORT

Sample Rating Trend





Area (62A0YYT) TALLASSEE 913044

Diesel Engine Fluid

PETRO CANADA DU

Sample Number Client Info GFL009097 GFL009243S GFL00914 GFL009243S GFL00914 Sample Date nrs Client Info 4305 4243 4200 Oil Age nrs Client Info 2025 1963 0 Oil Changed Client Info N/A Nort Changd N/A Sample Status Imit/base current history1 history1 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WeAR METALS method imit/base current history1 history1 for ppm ASTMD5185m<>20 7 6 6 6 Chromium ppm ASTMD5185m<>20 1 <1 1 1 rin ppm ASTMD5185m >20 0 0 0 0 Silver	LE INFORMATION method limit/base current history1 history2 Number Client Info GFL0030697 GFL003243 GFL00304185 Date Client Info 11 Apr 2024 03 Apr 2024 28 Mar 2024 Age hrs Client Info 4305 4243 4200 orged Client Info N/A Not Changd N/A Status Imit/base current history1 history2 ViC Method >3.0 <1.0 <1.0 <1.0 ViC Method >0.2 NEG NEG NEG R METALS method imit/base current history1 history2 ppm ASTM DS185m >120 7 6 6 mm ppm ASTM DS185m >20 0 0 mm ppm ASTM DS185m >20 0 0 mm ppm ASTM DS185m >20 0 0 ppm ASTM DS185m >20							V.
Sample Number Client Info GFL009097 GFL009243S GFL00914 GFL009243S GFL00914 Sample Date nrs Client Info 4305 4243 4200 Oil Age nrs Client Info 2025 1963 0 Oil Changed Client Info N/A Nort Changd N/A Sample Status Imit/base current history1 history1 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WeAR METALS method imit/base current history1 history1 for ppm ASTMD5185m<>20 7 6 6 6 Chromium ppm ASTMD5185m<>20 1 <1 1 1 rin ppm ASTMD5185m >20 0 0 0 0 Silver	Number Client Info GFL0880697 GFL0892436 GFL081852 Date Client Info 11 Apr 2024 03 Apr 2024 28 Mar 2024 Age hrs Client Info 2005 1963 0 rged Client Info NA Not Changd NA Status Status Status Status Albot Changd NA TAMDS185m Status Status Status Status Status	N SHP 15W40 (-	GAL)	lan2023 Feb2	023 Apr2023 May2023	Jun2023 Sep2023 Jan2024 Mar	2024 Apr2024	
Sample Date Client Info 11 Apr 2024 03 Apr 2024 28 Mar 20 Machine Age hrs Client Info 4305 4243 4200 Oil Age hrs Client Info 2025 1963 0 Oil Changed Client Info N/A NoRMAL NoRMAL ABNORM Sample Status Client Info N/A NoRMAL NoRMAL ABNORM Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method S.0 <1.0 <1.0 <1.0 WEAR METALS method imit/base current histort histort Ion ppm ASTM D5185m >20 <1 0 0 Silver ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Silver ppm	Date Client Info 11 Apr 2024 03 Apr 2024 28 Mar 2024 Age hrs Client Info 4305 4243 4200 inged Client Info 2025 1963 0 inged Client Info N/A Not Changd N/A Status Imit/toase current history1 history2 WC Method >3.0 <1.0 <1.0 <1.0 WC Method >0.2 NEG NEG NEG WC Method >0.2 NEG NEG NEG mm ppm ASTM D5185m >20 <1 0 0 ppm ASTM D5185m >20 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
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Machine Age hrs Client Info 4305 4243 4200 Oil Age hrs Client Info 2025 1963 0 Oil Changed Client Info N/A Not Changd N/A Sample Status Imit/base current History History Fuel WC Method >3.0 <1.0	AgehrsClient Info430542434200ngedClient Info202519630ngedClient InfoN/ANot ChangdN/AStatusImit/basecurrentNistory1Nistory2TAMINATIONmethod>3.0<1.0	Sample Date		Client Info		11 Apr 2024	03 Apr 2024	28 Mar 2024
Oil Changed Client Info N/A Not Changd N/A Sample Status Imit Normal NORMAL NORMAL ABNORM CONTAMINATION method Imit/base current history1 history1 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Gilycol WC Method >0.2 NEG NEG NEG Iron ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 <1 <1 <1 <1 Lead ppm ASTM D5185m >30 2 0 0 0 Aluminum ppm ASTM D5185m >40 <1 0 0 Cadmium ppm ASTM D5185m >330 2 1 0 0	nged Client Info N/A Not Changd N/A Status method limit/base current history1 history2 WC Method >3.0 <1.0	Machine Age	hrs	Client Info			4243	4200
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Calcium ppm ASTM D5185m 1070 1057 1181 1123 Phosphorus ppm ASTM D5185m 1150 968 1127 1073 Zinc ppm ASTM D5185m 1270 1173 1356 1300 Sulfur ppm ASTM D5185m 2060 3395 4157 3799 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 14 <1	ppm ASTM D5185m 1070 1057 1181 1123 prus ppm ASTM D5185m 1150 968 1127 1073 ppm ASTM D5185m 1270 1173 1356 1300 ppm ASTM D5185m 2060 3395 4157 3799 TAMINANTS method limit/base current history1 history2 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >20 14 <1	Manganese	ppm	ASTM D5185m	0	0	0	0
Phosphorus ppm ASTM D5185m 1150 968 1127 1073 Zinc ppm ASTM D5185m 1270 1173 1356 1300 Sulfur ppm ASTM D5185m 2060 3395 4157 3799 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 14 2 5 Potassium ppm ASTM D5185m >20 14 <1 ▲ 4 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/rm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/rm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/rm *ASTM D7415	ppm ASTM D5185m 1150 968 1127 1073 ppm ASTM D5185m 1270 1173 1356 1300 ppm ASTM D5185m 2060 3395 4157 3799 TAMINANTS method limit/base current history1 history2 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >20 14 2 5 um ppm ASTM D5185m >20 14 <1	Magnesium	ppm	ASTM D5185m	1010	916	1060	987
Zinc ppm ASTM D5185m 1270 1173 1356 1300 Sulfur ppm ASTM D5185m 2060 3395 4157 3799 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 14 2 5 Potassium ppm ASTM D5185m >20 14 <1	ppm ASTM D5185m 1270 1173 1356 1300 ppm ASTM D5185m 2060 3395 4157 3799 TAMINANTS method limit/base current history1 history2 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >20 14 2 5 um ppm ASTM D5185m >20 14 <1	Calcium	ppm	ASTM D5185m	1070	1057	1181	1123
Sulfur ppm ASTM D5185m 2060 3395 4157 3799 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 14 2 5 Potassium ppm ASTM D5185m >20 14 <1 ▲ 44 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.3 0.3 0.2 Soot % % *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/.mm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.mm *ASTM D7414 >25 14.5 14.2 14.0	ppm ASTM D5185m 2060 3395 4157 3799 TAMINANTS method limit/base current history1 history2 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >20 14 2 5 um ppm ASTM D5185m >20 14 <1	Phosphorus	ppm	ASTM D5185m	1150	968	1127	1073
CONTAMINANTSmethodlimit/basecurrenthistory1history1SiliconppmASTM D5185m>25544SodiumppmASTM D5185m>201425PotassiumppmASTM D5185m>2014<1	TAMINANTS method limit/base current history1 history2 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m >20 14 2 5 um ppm ASTM D5185m >20 14 <1	Zinc	ppm	ASTM D5185m	1270	1173	1356	1300
Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 14 2 5 Potassium ppm ASTM D5185m >20 14 <1 ▲ 44 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/.imm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.imm *ASTM D7414 >25 14.5 14.2 14.0	ppm ASTM D5185m >25 5 4 4 ppm ASTM D5185m 4 2 5 um ppm ASTM D5185m >20 14 <1	Sulfur	ppm	ASTM D5185m	2060	3395	4157	3799
Sodium ppm ASTM D5185m 4 2 5 Potassium ppm ASTM D5185m<>20 14 <1	ppm ASTM D5185m 4 2 5 um ppm ASTM D5185m >20 14 <1 44 A-RED method limit/base current history1 history2 % *ASTM D7844 >4 0.3 0.3 0.2 % *ASTM D7624 >20 6.4 5.9 5.6 n Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 D DEGRADATION method limit/base current history1 history2 n Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 14 <1 ▲ 44 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	Im ppm ASTM D5185m >20 14 <1 44 A-RED method limit/base current history1 history2 % *ASTM D7844 >4 0.3 0.3 0.2 % *ASTM D7844 >4 0.3 0.3 0.2 % *ASTM D7624 >20 6.4 5.9 5.6 n Abs/.imm *ASTM D7415 >30 18.8 18.4 18.1 DDEGRADATION method limit/base current history1 history2 n Abs/.imm *ASTM D7414 >25 14.5 14.2 14.0	Silicon	ppm	ASTM D5185m	>25	5	4	4
INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	A-RED method limit/base current history1 history2 % *ASTM D7844 >4 0.3 0.3 0.2 Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 n Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 O DEGRADATION method limit/base current history1 history2 n Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	Sodium	ppm	ASTM D5185m		4	2	5
Soot % % *ASTM D7844 >4 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	% *ASTM D7844 >4 0.3 0.3 0.2 Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 h Abs/.1mm *ASTM D7615 >30 18.8 18.4 18.1 D DEGRADATION method limit/base current history1 history2 n Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	Potassium	ppm	ASTM D5185m	>20	14	<1	4 4
Nitration Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 n Abs/.tmm *ASTM D7415 >30 18.8 18.4 18.1 D DEGRADATION method limit/base current history1 history2 n Abs/.tmm *ASTM D7414 >25 14.5 14.2 14.0	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	Abs/cm *ASTM D7624 >20 6.4 5.9 5.6 n Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 D DEGRADATION method limit/base current history1 history2 n Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	Soot %	%	*ASTM D7844	>4	0.3	0.3	0.2
Sulfation Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	Abs/.1mm *ASTM D7415 >30 18.8 18.4 18.1 D DEGRADATION method limit/base current history1 history2 n Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0							
Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	n Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0							
Oxidation Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	n Abs/.1mm *ASTM D7414 >25 14.5 14.2 14.0	FLUID DEGRA	DAT <u>ION</u>	method	limi <u>t/base</u>	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.1 8.4 8.7								

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

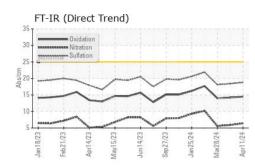
There is no indication of any contamination in the oil.

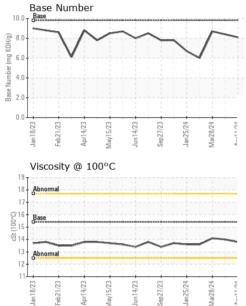
Fluid Condition

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



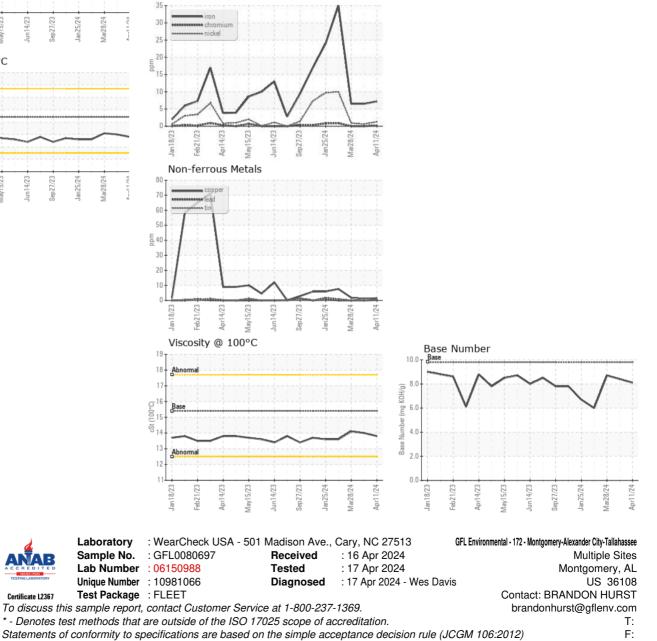
OIL ANALYSIS REPORT





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
TLOIDTHOTL		method	11111/0030	ourient	motory	motoryz
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	14.0	14.1
GRAPHS						

Ferrous Alloys



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Certificate 12367

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