

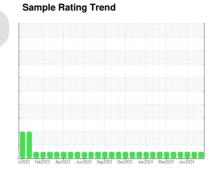
OIL ANALYSIS REPORT



(H916995) {UNASSIGNED} 913017

Front Diesel Engine

PETRO CANADA DURON SHP 15W40 (40 QTS)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

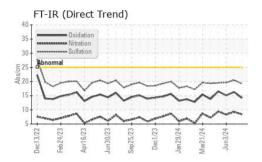
Fluid Condition

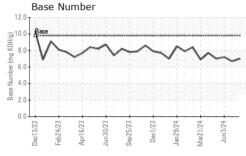
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

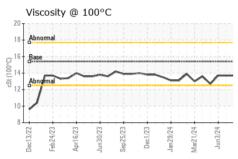
Sample Date Client Info 09 Jul 2024 18 Jun 2024 03 Jun 2026 Machine Age hrs Client Info 5014 4829 4748 4	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 5014 4829 4748 Oil Age hrs Client Info 4829 4829 4050 Oil Changed Changed Changed N/A Sample Status NORMAL NORMAL NORMAL CONTAMINATION method Imit/base current history1 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0127791	GFL0098986	GFL0098915
Oil Age	Sample Date		Client Info		09 Jul 2024	18 Jun 2024	03 Jun 2024
Oil Changed Sample Status Client Info Changed NORMAL N/A NORMAL N/A NORMAL CONTAMINATION method limit/base current history1 history1 Fuel 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 limit/base current history1 history1 Iron ppm ASTM D5185m >120 15 26 20 Chromium ppm ASTM D5185m >20 0 2 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1 <1 Lead ppm ASTM D5185m >20 1 5 2 Copper ppm ASTM D5185m >10 <1 <1 Tin	Machine Age	hrs	Client Info		5014	4829	4748
Sample Status	Oil Age	hrs	Client Info		4829	4829	4050
CONTAMINATION method limit/base current history1 history1 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method 0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5188m >120 15 26 20 Chromium ppm ASTM D5188m >20 0 2 <1 <1 Nickel ppm ASTM D5188m >2 0 <1 <1 <1 Silver ppm ASTM D5188m >2 0 <1 <1 <1 Lead ppm ASTM D5188m >20 1 5 2 Copper ppm ASTM D5188m >330 2 3 2 1 <1 <1 <1 <1 <1 <	Oil Changed		Client Info		Changed	Changed	N/A
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 15 26 20 Chromium ppm ASTM D5185m >20 0 2 <1 Nickel ppm ASTM D5185m >5 0 5 4 Silver ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >20 1 5 2 Lead ppm ASTM D5185m >40 0 <1 <1 <1 <1 <1 <1 <1 <1 <1	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 15 26 20 Chromium ppm ASTM D5185m >20 0 2 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >2 0 <1 <1 Lead ppm ASTM D5185m >20 1 5 2 Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >15 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Vanadium ppm ASTM D5185m 0 1 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 2 <1	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	15	26	20
Titanium ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1	Chromium	ppm	ASTM D5185m	>20	0	2	<1
Silver	Nickel	ppm	ASTM D5185m	>5	0	5	4
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >20 1 5 2 Lead ppm ASTM D5185m >20 1 5 2 Copper ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 2 3 2 Tin ppm ASTM D5185m 0 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 1 <1 Cadmium ppm ASTM D5185m 0 1 <1 <1 <1 ADDITIVES method limit/base current history1 history1 history1 ADDITIVES method limit/base current history1 history1 Barium ppm ASTM D5185m 0 1 <1 <1 Barium ppm ASTM D5185m 1010	Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum ppm ASTM D5185m >20 1 5 2 Lead ppm ASTM D5185m >40 0 <1	Silver				0	<1	0
Lead	Aluminum	ppm	ASTM D5185m	>20	1	5	2
Copper ppm ASTM D5185m >330 2 3 2 Tin ppm ASTM D5185m >15 <1	Lead			>40	0	<1	<1
Tin	Copper		ASTM D5185m	>330	2	3	2
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 <1 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 1 <1 0 Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 0 0 1 0 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 1070 1024 1103 1070 Phosphorus ppm ASTM D5185m 1150 982 1021 915 Zinc ppm ASTM D5185m 1270 1242 1253 1177 Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 <t< td=""><th>• •</th><td></td><td></td><td></td><th><1</th><td></td><td><1</td></t<>	• •				<1		<1
Cadmium ppm ASTM D5185m 0 <1 <1 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 1 <1	Vanadium		ASTM D5185m		0	<1	0
Boron	Cadmium				0	<1	<1
Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 60 54 61 58 Manganese ppm ASTM D5185m 0 0 1 <1	ADDITIVES		method	limit/base	current	history1	history2
Barium ppm ASTM D5185m 0 0 1 0 Molybdenum ppm ASTM D5185m 60 54 61 58 Manganese ppm ASTM D5185m 0 0 1 <1	Boron	ppm	ASTM D5185m	0	1	<1	0
Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 1010 907 949 894 Calcium ppm ASTM D5185m 1070 1024 1103 1070 Phosphorus ppm ASTM D5185m 1150 982 1021 915 Zinc ppm ASTM D5185m 1270 1242 1253 1177 Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7415 >20 </td <th>Barium</th> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>0</th> <td>1</td> <td>0</td>	Barium	ppm	ASTM D5185m	0	0	1	0
Magnesium ppm ASTM D5185m 1010 907 949 894 Calcium ppm ASTM D5185m 1070 1024 1103 1070 Phosphorus ppm ASTM D5185m 1150 982 1021 915 Zinc ppm ASTM D5185m 1270 1242 1253 1177 Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm <td< td=""><th>Molybdenum</th><td>ppm</td><td>ASTM D5185m</td><td>60</td><th>54</th><td>61</td><td>58</td></td<>	Molybdenum	ppm	ASTM D5185m	60	54	61	58
Magnesium ppm ASTM D5185m 1010 907 949 894 Calcium ppm ASTM D5185m 1070 1024 1103 1070 Phosphorus ppm ASTM D5185m 1150 982 1021 915 Zinc ppm ASTM D5185m 1270 1242 1253 1177 Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm <td< td=""><th>•</th><td></td><td>ASTM D5185m</td><td>0</td><th>0</th><td>1</td><td><1</td></td<>	•		ASTM D5185m	0	0	1	<1
Calcium ppm ASTM D5185m 1070 1024 1103 1070 Phosphorus ppm ASTM D5185m 1150 982 1021 915 Zinc ppm ASTM D5185m 1270 1242 1253 1177 Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % "ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm "ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm "ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION "ASTM D7414	Magnesium		ASTM D5185m	1010	907	949	894
Phosphorus ppm ASTM D5185m 1150 982 1021 915 Zinc ppm ASTM D5185m 1270 1242 1253 1177 Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION *ASTM D74	-		ASTM D5185m	1070	1024	1103	1070
Zinc ppm ASTM D5185m 1270 1242 1253 1177 Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m <1	Phosphorus		ASTM D5185m	1150	982	1021	915
Sulfur ppm ASTM D5185m 2060 3426 2893 2992 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m >20 1 <1			ASTM D5185m	1270	1242	1253	1177
Silicon ppm ASTM D5185m >25 3 8 8 Sodium ppm ASTM D5185m <1 <1 0 Potassium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1	Sulfur		ASTM D5185m	2060	3426	2893	2992
Sodium ppm ASTM D5185m <1 <1 0 Potassium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m <1	Silicon	ppm	ASTM D5185m	>25	3	8	8
Potassium ppm ASTM D5185m >20 1 9 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1							
Soot % % *ASTM D7844 >4 0.8 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1	Potassium	ppm	ASTM D5185m	>20	1	9	3
Nitration Abs/cm *ASTM D7624 >20 8.4 9.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1	Soot %	%	*ASTM D7844	>4	8.0	0.6	0.5
Sulfation Abs/.1mm *ASTM D7415 >30 19.2 20.5 19.6 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1	Nitration	Abs/cm	*ASTM D7624	>20	8.4		8.3
Oxidation Abs/.1mm *ASTM D7414 >25 14.2 16.3 15.1							
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.2	16.3	15.1
DAGGETALLINGT (DITY MIGHOLDS O.C. I.U U./	Base Number (BN)	mg KOH/g			7.0	6.7	7.2



OIL ANALYSIS REPORT



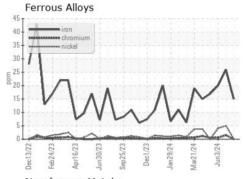


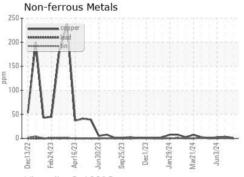


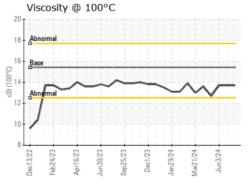
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

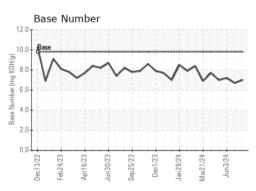
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.7	13.7

GRAPHS













Laboratory Sample No.

Lab Number : 06240055 Unique Number : 11128889

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0127791

Received : 18 Jul 2024 **Tested** Diagnosed

: 19 Jul 2024 : 19 Jul 2024 - Wes Davis

699 Jack Miller Boulevard Clarksville, TN US 37042

Contact: ROBERT THIBAULT

GFL Environmental - 084 - Clarksville

robert.thibault@gflenv.com T: (931)552-7276

Test Package : FLEET Certificate 12367 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)

Report Id: GFL084 [WUSCAR] 06240055 (Generated: 07/19/2024 11:14:41) Rev: 1

Submitted By: GFL084,GFL842,GFL844,GFL846 - ROBERT THIBAULT

F: (931)572-9674