

OIL ANALYSIS REPORT

Area (DUX471) 10669

Diesel Engine

PETRO CANADA DURON SHP 15W40 (7 GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

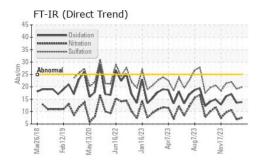
Fluid Condition

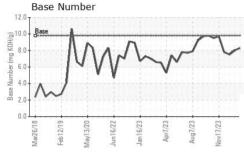
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

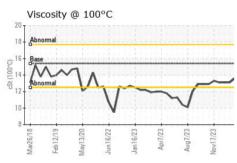
Sample Date Client Info 02 Apr 2024 22 Mar 2024 21 Feb 2024 Machine Age hrs Client Info 159 41 50578 Oil Age hrs Client Info 189 71 583 Oil Changed Client Info Changed Nor Changed Changed NoRMAL ABNORMAL CONTAMINATION method Imit base current history1 history2 Fuel WC Method >3.0 <1.0	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 159 41 50578 Oil Age hrs Client Info 189 71 583 Oil Changed Client Info Changed Not Changed Changed ABNORMAL Sample Status NoRMAL NoRMAL NoRMAL ABNORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0115745	GFL0115762	GFL0112381
Oil Age hrs Client Info 189 71 583 Oil Changed Sample Status Client Info Changed Normal Not Changed Changed Changed Normal Normal ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Sample Date		Client Info		02 Apr 2024	22 Mar 2024	21 Feb 2024
Oil Changed Sample Status Client Info Changed NORMAL Not Changed ABNORMAL Changed ABNORMAL Changed ABNORMAL ALO 1.0 4.1 1.0 4.1 1.0 4.1 0.0 1.1 1.0 1.1 1.0 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 1.1 1.1 1.1	Machine Age	nrs	Client Info		159	41	50578
Oil Changed Sample Status Client Info Changed NORMAL NORMAL Not Changed ABNORMAL ABNORMAL Changed ABNORMAL ABNORMAL ABNORMAL ABNORMAL ABNORMAL Changed ABNORMAL ABNO	Oil Age	nrs	Client Info		189	71	583
NORMAL NORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 history2	-		Client Info		Changed	Not Changd	Changed
Fuel	Sample Status				_	Ü	ABNORMAL
Water Glycol WC Method >0.2 NEG A Incompacity Poth ASTM D5185m 2 4 4<	CONTAMINATIO	N	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >5 2 <1 2 Nickel ppm ASTM D5185m >4 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron p	opm	ASTM D5185m	>75	19	13	44
Nickel	Chromium p	opm	ASTM D5185m	>5	2	<1	2
Titanium					<1		
Silver			ASTM D5185m	>2	<1	0	<1
Aluminum							
Lead ppm ASTM D5185m >25 <1 0 <1 Copper ppm ASTM D5185m >100 6 6 46 Tin ppm ASTM D5185m >4 <1 0 0 Vanadium ppm ASTM D5185m <1 <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 11 12 11 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 859 896 841 Calcium ppm ASTM D5185m							
Copper ppm ASTM D5185m >100 6 6 46 Tin ppm ASTM D5185m >4 <1					_		
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Molybdenum ppm ASTM D5185m 60 65 63 74 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 859 896 841 Calcium ppm ASTM D5185m 1070 1063 1087 1033 Phosphorus ppm ASTM D5185m 1150 941 981 890 Zinc ppm ASTM D5185m 1270 1148 1150 1079 Sulfur ppm ASTM D5185m 2060 2830 3374 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >6	Boron	opm					
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 859 896 841 Calcium ppm ASTM D5185m 1070 1063 1087 1033 Phosphorus ppm ASTM D5185m 1150 941 981 890 Zinc ppm ASTM D5185m 1270 1148 1150 1079 Sulfur ppm ASTM D5185m 2060 2830 3374 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D78		opm	ASTM D5185m	0			0
Magnesium ppm ASTM D5185m 1010 859 896 841 Calcium ppm ASTM D5185m 1070 1063 1087 1033 Phosphorus ppm ASTM D5185m 1150 941 981 890 Zinc ppm ASTM D5185m 1270 1148 1150 1079 Sulfur ppm ASTM D5185m 2060 2830 3374 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/:1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION *ASTM D7414<	Molybdenum p	opm			65	63	74
Calcium ppm ASTM D5185m 1070 1063 1087 1033 Phosphorus ppm ASTM D5185m 1150 941 981 890 Zinc ppm ASTM D5185m 1270 1148 1150 1079 Sulfur ppm ASTM D5185m 2060 2830 3374 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION *ASTM	Manganese p	opm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 941 981 890 Zinc ppm ASTM D5185m 1270 1148 1150 1079 Sulfur ppm ASTM D5185m 2060 2830 3374 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m >25 8 6 14 Potassium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm "ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm "ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION "ASTM D7414 >25 <td>Magnesium p</td> <td>opm</td> <td>ASTM D5185m</td> <td>1010</td> <th>859</th> <td>896</td> <td>841</td>	Magnesium p	opm	ASTM D5185m	1010	859	896	841
Zinc ppm ASTM D5185m 1270 1148 1150 1079 Sulfur ppm ASTM D5185m 2060 2830 3374 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	Calcium	opm	ASTM D5185m	1070	1063	1087	1033
Sulfur ppm ASTM D5185m 2060 2830 3374 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m 64 70 ▲ 494 Potassium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	Phosphorus p	opm	ASTM D5185m	1150	941	981	890
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m 64 70 ▲ 494 Potassium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	Zinc p	opm	ASTM D5185m	1270	1148	1150	1079
Silicon ppm ASTM D5185m >25 8 6 14 Sodium ppm ASTM D5185m 64 70 ▲ 494 Potassium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	Sulfur p	opm	ASTM D5185m	2060	2830	3374	2510
Sodium ppm ASTM D5185m 64 70 ▲ 494 Potassium ppm ASTM D5185m >20 4 1 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	CONTAMINANTS	S	method	limit/base	current	history1	history2
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INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	Sodium	opm	ASTM D5185m		64	70	494
Soot % % *ASTM D7844 >6 1.1 0.6 1 Nitration Abs/cm *ASTM D7624 >20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	Potassium p	opm	ASTM D5185m	>20	4	1	11
Nitration Abs/cm *ASTM D7624 > 20 7.5 6.8 10.6 Sulfation Abs/.1mm *ASTM D7415 > 30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 > 25 13.9 13.5 17.1	INFRA-RED		method	limit/base	current	history1	history2
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Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1	Nitration A	Abs/cm	*ASTM D7624	>20	7.5	6.8	10.6
Oxidation Abs/.1mm *ASTM D7414 >25 13.9 13.5 17.1							
	FLUID DEGRADA	MOITA	method	limit/base	current	history1	history2
	Oxidation A	Abs/.1mm	*ASTM D7414	>25	13.9	13.5	17.1
					8.3	8.0	7.5



OIL ANALYSIS REPORT



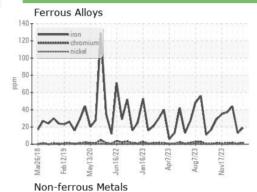


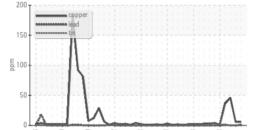


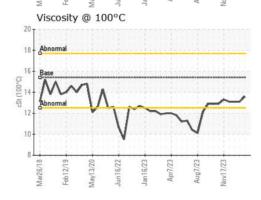
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

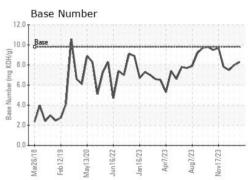
FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.1	13.1

GRAPHS













Certificate 12367

Laboratory

Sample No. Lab Number : 06139512 Unique Number : 10964320

: GFL0115745

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 05 Apr 2024 **Tested**

: 05 Apr 2024 Diagnosed : 05 Apr 2024 - Wes Davis

GFL Environmental - 010 - Stockbridge

1280 Rum Creek Parkway Stockbridge, GA

US 30281 Contact: JOSHUA TINKER joshuatinker@gflenv.com

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: GFL010 [WUSCAR] 06139512 (Generated: 04/05/2024 17:47:15) Rev: 1

Submitted By: JOSHUA TINKER

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