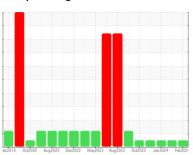


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



727105-310043

Component

Diesel Engine

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

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

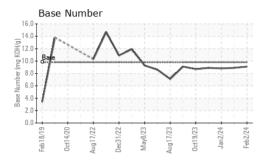
Fluid Condition

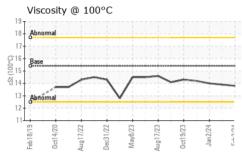
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method imitibase current history1 history2	GAL)		eb 2019 Oct2	020 Aug2022 Dec2022	May2023 Aug2023 Oct2023 Jan2	024 Feb 202 ⁴	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 18335 18212 18062 Oil Age hrs Client Info 150 150 600 Oil Changed Client Info Not Changd Not Changd Not Changd NoRMAL NORMAL CONTAMINATION method limit/base current historyt history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Horg NEG NEG NEG NEG WEAR METALS method limit/base current history2 Iron pm ASTM D5185m >110 12 5 7 Chromium ppm ASTM D5185m >110 12 5 7 Chromium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm<	Sample Number		Client Info		GFL0105322	GFL0105170	GFL0105135
Machine Age hrs Client Info 18335 18212 18062 Oil Age hrs Client Info 150 150 600 Oil Changed Client Info Not Changd Not Changd Not Changd NoRMAL NORMAL CONTAMINATION method limit/base current historyt history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Horg NEG NEG NEG NEG WEAR METALS method limit/base current history2 Iron pm ASTM D5185m >110 12 5 7 Chromium ppm ASTM D5185m >110 12 5 7 Chromium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm<	Sample Date		Client Info		02 Feb 2024	18 Jan 2024	02 Jan 2024
Oil Changed Sample Status		hrs	Client Info		18335	18212	18062
Sample Status	Oil Age	hrs	Client Info		150	150	600
CONTAMINATION	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Fuel WC Method >5 <1.0	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 12 5 7 Chromium ppm ASTM D5185m >2 0 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 4 3 3 Lead ppm ASTM D5185m >45 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 12 5 7 Chromium ppm ASTM D5185m >4 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 4 3 3 Lead ppm ASTM D5185m >45 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	12	5	7
Titanium	Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>2	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	0
Lead ppm ASTM D5185m >45 <1 0 0 Copper ppm ASTM D5185m >85 <1 <1 <1 Tin ppm ASTM D5185m >4 0 <1 <1 Vanadium ppm ASTM D5185m <1 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 2 Barium ppm ASTM D5185m 0 0 0 3 0 Molybdenum ppm ASTM D5185m 0 0 3 0 Magnesium ppm ASTM D5185m 0 <1 0 <1 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 1270 1258	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >85 <1 <1 <1 Tin ppm ASTM D5185m >4 0 <1	Aluminum	ppm	ASTM D5185m	>25	4	3	3
Tin ppm ASTM D5185m >4 0 <1 <1 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 2 Barium ppm ASTM D5185m 0 0 3 0 Molybdenum ppm ASTM D5185m 0 60 60 59 58 Manganese ppm ASTM D5185m 0 <1 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 941 916 905 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 1270 1258 1201 1215 Sulfur pp	Lead	ppm	ASTM D5185m	>45	<1	0	0
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 2 Barium ppm ASTM D5185m 0 0 3 0 Molybdenum ppm ASTM D5185m 0 60 60 59 58 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 941 916 905 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 11270 1258 1201 1215 Sulfur ppm ASTM D5185m 2060 3077 3446 2991 CONTAMINANTS method limit/base	Copper	ppm	ASTM D5185m	>85	<1	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 Barium ppm ASTM D5185m 0 0 3 0 Molybdenum ppm ASTM D5185m 0 60 60 59 58 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 941 916 905 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 1270 1258 1201 1215 Sulfur ppm ASTM D5185m 2060 3077 3446 2991 CONTAMINANTS method limit/base current history1 history2	Tin	ppm	ASTM D5185m	>4	0	<1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 2 Barium ppm ASTM D5185m 0 0 3 0 Molybdenum ppm ASTM D5185m 60 60 59 58 Manganese ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 0 0 0 2 Barium ppm ASTM D5185m 0 0 3 0 Molybdenum ppm ASTM D5185m 60 60 59 58 Manganese ppm ASTM D5185m 0 <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 3 0 Molybdenum ppm ASTM D5185m 60 60 59 58 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 941 916 905 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 1150 1024 965 1007 Zinc ppm ASTM D5185m 1270 1258 1201 1215 Sulfur ppm ASTM D5185m 2060 3077 3446 2991 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 2 3 Sodium ppm ASTM D5185m >20 8 4 5 INFRA-RED method limit/base <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 60 59 58 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 941 916 905 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 1150 1024 965 1007 Zinc ppm ASTM D5185m 1270 1258 1201 1215 Sulfur ppm ASTM D5185m 2060 3077 3446 2991 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 2 3 Sodium ppm ASTM D5185m >20 8 4 5 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 <td>Boron</td> <td>ppm</td> <td></td> <td></td> <th></th> <td></td> <td></td>	Boron	ppm					
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 941 916 905 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 1150 1024 965 1007 Zinc ppm ASTM D5185m 1270 1258 1201 1215 Sulfur ppm ASTM D5185m 2060 3077 3446 2991 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 2 3 Sodium ppm ASTM D5185m >20 8 4 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.2 0.3 Nitration Abs/cm *ASTM D784	Barium	ppm	ASTM D5185m		-		-
Magnesium ppm ASTM D5185m 1010 941 916 905 Calcium ppm ASTM D5185m 1070 1018 1049 988 Phosphorus ppm ASTM D5185m 1150 1024 965 1007 Zinc ppm ASTM D5185m 1270 1258 1201 1215 Sulfur ppm ASTM D5185m 2060 3077 3446 2991 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 2 3 Sodium ppm ASTM D5185m >30 4 28 48 Potassium ppm ASTM D5185m >20 8 4 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.1 5.8 6.2 Sulfation Abs/.1mm *ASTM		ppm					
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Phosphorus ppm ASTM D5185m 1150 1024 965 1007 Zinc ppm ASTM D5185m 1270 1258 1201 1215 Sulfur ppm ASTM D5185m 2060 3077 3446 2991 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 2 3 Sodium ppm ASTM D5185m >30 4 28 48 Potassium ppm ASTM D5185m >20 8 4 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.1 5.8 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.2 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm </td <td>_</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th></th> <td></td> <td></td>	_	ppm	ASTM D5185m				
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Sodium ppm ASTM D5185m 44 28 48 Potassium ppm ASTM D5185m >20 8 4 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 8.1 5.8 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.2 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 13.6 14.2		ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 8 4 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 8.1 5.8 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.2 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 13.6 14.2				>30			
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Soot % % *ASTM D7844 >3 0.6 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 8.1 5.8 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.2 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 13.6 14.2	Potassium	ppm	ASTM D5185m	>20	8	4	5
Nitration Abs/cm *ASTM D7624 >20 8.1 5.8 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.2 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 13.6 14.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.2 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.5 13.6 14.2	Soot %	%	*ASTM D7844	>3	0.6	0.2	0.3
FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2515.513.614.2	Nitration	Abs/cm	*ASTM D7624	>20	8.1	5.8	6.2
Oxidation Abs/.1mm *ASTM D7414 >25 15.5 13.6 14.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.7	18.2	18.5
	FLUID DEGRAI	NOITAC	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 9.1 8.9 8.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	13.6	14.2
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.1	8.9	8.8



OIL ANALYSIS REPORT

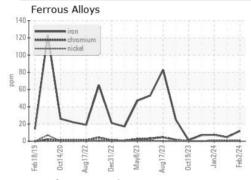


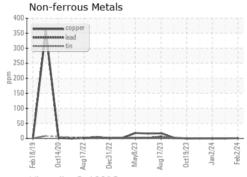


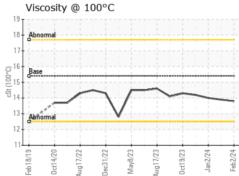
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

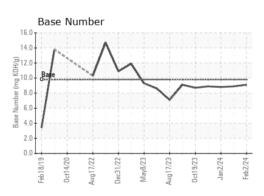
FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.9	14.0

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: GFL0105322 Recieved : 06081067

: 10863158

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 06 Feb 2024

Diagnosed : 06 Feb 2024 Diagnostician : Wes Davis

GFL Environmental - 821 - Ozarks Hauling

33924 Olath Drive Lebanon, MO US 65536

Contact: Landen Johnson landen.johnson@gflenv.com

* - 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) T: (417)664-0010