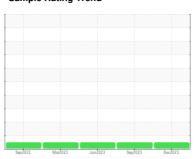


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id 922015 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

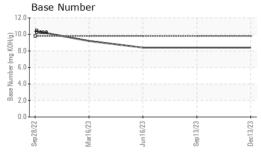
Fluid Condition

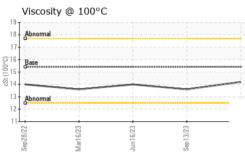
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0086749 GFL0071295	N SHP 15W40 (-	GAL)	Sep.2022	Mar2023	Jun2023 Sep2023	Dec2023	
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 27435 27215 26631 Oil Age hrs Client Info 220 27215 26631 Oil Age hrs Client Info Changed Changed Not Changed Sample Status WC Method NORMAL NORMAL NORMAL VOONTAMINATION method Iminitibase current history1 history1 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0086749	GFL0071295	GFL007127
Oil Age	Sample Date		Client Info		13 Dec 2023	13 Sep 2023	16 Jun 2023
Client Info	Machine Age	hrs	Client Info		27435	27215	26631
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 history1 history2 water WC Method >3.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1	Oil Age	hrs	Client Info		220	27215	26631
CONTAMINATION method limit/base current history1 history1 Fuel WC Method >3.0 <1.0	Oil Changed		Client Info		Changed	Changed	Not Changd
Fuel	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 history1 Iron ppm ASTM D5185m >120 2 7 4 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >20 1 0 <1 Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >40 <1 <1 1 Vanadium ppm ASTM D5185m >15 <1 <1 <1 1	CONTAMINAT	ΓΙΟΝ	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
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 0 <1	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	2	7	4
Description	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 <1 <1 <1 <1 <1 O </td <td>Aluminum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>20</td> <td>1</td> <td>0</td> <td><1</td>	Aluminum	ppm	ASTM D5185m	>20	1	0	<1
Tin	Lead	ppm	ASTM D5185m	>40	<1	<1	0
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 4 <1 1 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 1010 928 868 1009 Calcium ppm ASTM D5185m 1070 1039 985 1107 Phosphorus ppm ASTM D5185m 1270 1199 1160 1357 Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 <1	Tin	ppm	ASTM D5185m	>15	<1	<1	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 4 <1 1 1 0	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 57 57 60 Manganese ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 57 60 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 928 868 1009 Calcium ppm ASTM D5185m 1070 1039 985 1107 Phosphorus ppm ASTM D5185m 1150 1071 966 1095 Zinc ppm ASTM D5185m 1270 1199 1160 1357 Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624	Boron	ppm	ASTM D5185m	0	4	<1	1
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 928 868 1009 Calcium ppm ASTM D5185m 1070 1039 985 1107 Phosphorus ppm ASTM D5185m 1150 1071 966 1095 Zinc ppm ASTM D5185m 1270 1199 1160 1357 Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m 20 0 2 <1 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.3 0.2 0.3 Nitration Abs/cm *ASTM D74	Barium	ppm	ASTM D5185m	0	0	<1	0
Magnesium ppm ASTM D5185m 1010 928 868 1009 Calcium ppm ASTM D5185m 1070 1039 985 1107 Phosphorus ppm ASTM D5185m 1150 1071 966 1095 Zinc ppm ASTM D5185m 1270 1199 1160 1357 Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m >20 0 2 <1	Molybdenum	ppm	ASTM D5185m	60	57	57	60
Calcium ppm ASTM D5185m 1070 1039 985 1107 Phosphorus ppm ASTM D5185m 1150 1071 966 1095 Zinc ppm ASTM D5185m 1270 1199 1160 1357 Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m 1 2 2 2 Potassium ppm ASTM D5185m >20 0 2 <1	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus ppm ASTM D5185m 1150 1071 966 1095 Zinc ppm ASTM D5185m 1270 1199 1160 1357 Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1 history3 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m 1 2 2 2 Potassium ppm ASTM D5185m >20 0 2 <1	Magnesium	ppm	ASTM D5185m	1010	928	868	1009
Zinc ppm ASTM D5185m 1270 1199 1160 1357 Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m 1 2 2 Potassium ppm ASTM D5185m >20 0 2 <1	Calcium	ppm	ASTM D5185m	1070	1039	985	1107
Sulfur ppm ASTM D5185m 2060 3129 2939 3998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m 1 2 2 Potassium ppm ASTM D5185m >20 0 2 <1	Phosphorus	ppm	ASTM D5185m	1150	1071	966	1095
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m 1 2 2 Potassium ppm ASTM D5185m >20 0 2 <1	Zinc	ppm	ASTM D5185m	1270	1199	1160	1357
Silicon ppm ASTM D5185m >25 3 4 2 Sodium ppm ASTM D5185m 1 2 2 Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.3 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 7.6 7.3 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.9 15.6	Sulfur	ppm	ASTM D5185m	2060	3129	2939	3998
Sodium ppm ASTM D5185m 1 2 2 Potassium ppm ASTM D5185m >20 0 2 <1	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 7.6 7.3 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.9 15.6	Silicon	ppm	ASTM D5185m	>25	3	4	2
INFRA-RED	Sodium	ppm	ASTM D5185m		1	2	2
Soot % % *ASTM D7844 >4 0.3 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 7.6 7.3 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.9 15.6	Potassium	ppm	ASTM D5185m	>20	0	2	<1
Nitration Abs/cm *ASTM D7624 >20 7.6 7.3 6.9 Sulfation Abs/.1mm *ASTM D7615 >30 19.7 18.1 18.8 FLUID DEGRADATION method limit/base current bistory1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.9 15.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.9 15.6	Soot %	%	*ASTM D7844	>4	0.3	0.2	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 19.7 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.9 15.6	Nitration	Abs/cm	*ASTM D7624	>20	7.6	7.3	6.9
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30			
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.4 8.4 8.4	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.8	14.9	15.6
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.4	8.4	8.4



OIL ANALYSIS REPORT

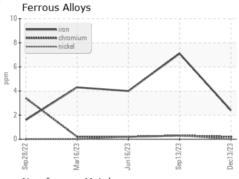


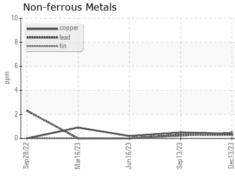


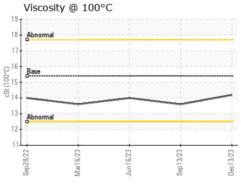
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

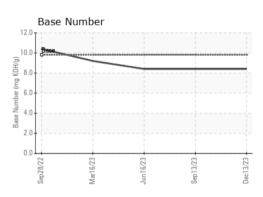
FLUID PROP	EKIIES	method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	13.6	14.0

GRAPHS











Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10819543 Test Package : FLEET

: GFL0086749 : 06053594

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 08 Jan 2024 Diagnosed

: 09 Jan 2024 Diagnostician : Wes Davis

GFL Environmental - 932 - Muskego HC

W144 S6400 College Ct. Muskego, WI US 53150

Contact: Brian Schlomann brian.schlomann@gflenv.com T: (262)510-4586

* - 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)