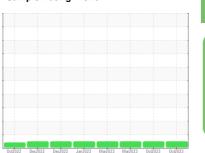


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id 713015 Component **Diesel Engine**

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

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

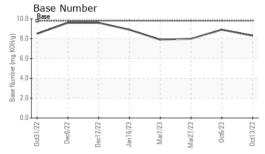
Fluid Condition

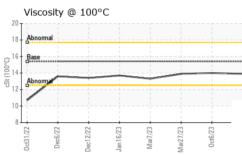
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number	14 3111 13 14 0 (,	Oct2022 C	lec2022 Dec2022 Jan20	23 Mar2023 Mar2023 Oct2023	Oct2023	
Sample Date Client Info 30 Cet 2023 27 Mar Machine Age hrs Client Info 3028 2988 0 0 0 0 0 0 0 0 0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 150 150 150 Not Changd Nor	Sample Number		Client Info		GFL0065465	GFL0065496	GFL0051291
Dil Age	Sample Date		Client Info		13 Oct 2023	06 Oct 2023	27 Mar 2023
Dil Changed Client Info Not Changd Not Changd NORMAL N	Machine Age	hrs	Client Info		3028	2988	0
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 history1 history2 history2 history2 history2 history2 history2 history3 history2 history2 history2 history3 history3 history3 history4 hi	Oil Age	hrs	Client Info		150	150	0
CONTAMINATION	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS method limit/base current history1 history	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history1 fron ppm ASTM D5185m >120 2 6 6 Chromium ppm ASTM D5185m >20 0 0 <1	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Pron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS	S	method	limit/base	current	history1	history2
Chromium	ron	ppm	ASTM D5185m	>120	2	6	6
Sickel	Chromium		ASTM D5185m	>20			<1
Description	Nickel		ASTM D5185m	>5		<1	<1
Silver	Titanium		ASTM D5185m	>2	0	2	0
Astronomega	Silver		ASTM D5185m	>2	0	0	0
Description	Aluminum	ppm	ASTM D5185m	>20	<1	0	0
Fin	_ead	ppm	ASTM D5185m	>40	0	0	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185m 0 2 2 1 Barium ppm ASTM D5185m 0 <1 <1 0 Molybdenum ppm ASTM D5185m 0 <1 <1 0 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 917 839 838 Calcium ppm ASTM D5185m 1070 953 976 968 Phosphorus ppm ASTM D5185m 1270 1196 1178 110 Sulfur ppm ASTM D5185m 2060 2935 3232 248 CONTAMINANTS method limit/base current history1 </td <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <th>0</th> <td><1</td> <td>2</td>	Copper	ppm	ASTM D5185m	>330	0	<1	2
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185m 0 2 2 1 Barium ppm ASTM D5185m 0 <1	Γin	ppm	ASTM D5185m	>15	<1	0	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 2 2 1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 58 54 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	0	2	2	1
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 917 839 838 Calcium ppm ASTM D5185m 1070 953 976 968 Phosphorus ppm ASTM D5185m 1150 1003 989 934 Zinc ppm ASTM D5185m 1270 1196 1178 110 Sulfur ppm ASTM D5185m 2060 2935 3232 2486 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 0 2 1 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7624 >20	Barium	ppm	ASTM D5185m	0	<1	<1	0
Magnesium ppm ASTM D5185m 1010 917 839 838 Calcium ppm ASTM D5185m 1070 953 976 968 Phosphorus ppm ASTM D5185m 1150 1003 989 934 Zinc ppm ASTM D5185m 1270 1196 1178 110 Sulfur ppm ASTM D5185m 2060 2935 3232 248 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m 2 7 1 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/cm *ASTM D7415 >30 17.6 <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>60</td> <th>56</th> <td>58</td> <td>54</td>	Molybdenum	ppm	ASTM D5185m	60	56	58	54
Calcium ppm ASTM D5185m 1070 953 976 968 Phosphorus ppm ASTM D5185m 1150 1003 989 934 Zinc ppm ASTM D5185m 1270 1196 1178 1100 Sulfur ppm ASTM D5185m 2060 2935 3232 2480 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m 2 7 1 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/cm *ASTM D7415 >30 17.6	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1003 989 934 Zinc ppm ASTM D5185m 1270 1196 1178 1103 Sulfur ppm ASTM D5185m 2060 2935 3232 2483 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m 2 7 1 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Vitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 FLUID DEGRADATION method limit/base current history1 his	Magnesium	ppm	ASTM D5185m	1010	917	839	838
Zinc ppm ASTM D5185m 1270 1196 1178 1108 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1178 1109 1	Calcium	ppm	ASTM D5185m	1070	953	976	968
Sulfur ppm ASTM D5185m 2060 2935 3232 2486 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m 2 7 1 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Gulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	Phosphorus	ppm	ASTM D5185m	1150	1003	989	934
CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m 2 7 1 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	Zinc	ppm	ASTM D5185m	1270	1196	1178	1102
Solition ppm ASTM D5185m >25 3 4 3	Sulfur	ppm	ASTM D5185m	2060	2935	3232	2488
Sodium ppm ASTM D5185m 2 7 1 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	Silicon	ppm	ASTM D5185m	>25	3	4	3
INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	Sodium	ppm	ASTM D5185m		2	7	1
Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	Potassium	ppm	ASTM D5185m	>20	0	2	1
Nitration Abs/cm *ASTM D7624 >20 5.1 4.7 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.6 17.1 16.5 FLUID DEGRADATION method limit/base current history1 his	Soot %	%	*ASTM D7844	>4	0.2	0.1	0.2
FLUID DEGRADATION method limit/base current history1 his	Nitration	Abs/cm	*ASTM D7624	>20	5.1	4.7	5.2
	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.6	17.1	16.5
Oxidation Abs/.1mm *ASTM D7414 >25 13.3 13.2 13.3	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.3	13.2	13.3
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.3 8.9 8.0	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	8.9	8.0



OIL ANALYSIS REPORT

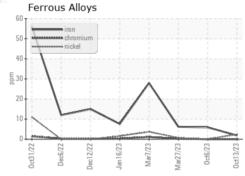


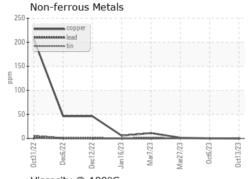


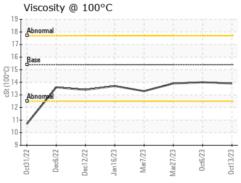
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

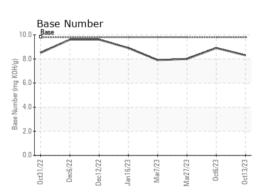
FLUID PROPE	EKIIES	method	ilmivbase		nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	14.0	13.9

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number Unique Number : 10699513 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0065465 : 05982218

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

Received : 18 Oct 2023 Diagnosed : 18 Oct 2023 Diagnostician : Wes Davis

GFL Environmental - 829 - Wilco Hauling

5054 Highway HH Hartville, MO US 65667 Contact: James Jones

james.jones@gflenv.com T: (417)349-5006

* - 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: GFL829 [WUSCAR] 05982218 (Generated: 10/22/2023 20:18:12) Rev: 1