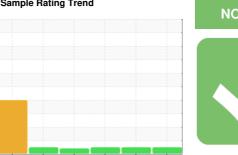


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id **819019** Component **Diesel Engine**

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

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

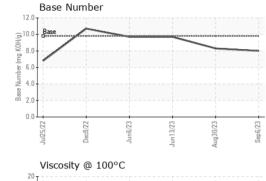
Fluid Condition

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

·		Jul2022	Dec2022 Jun2023			
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086865	GFL0072534	GFL0072516
Sample Date		Client Info		06 Sep 2023	30 Aug 2023	13 Jun 2023
Machine Age	hrs	Client Info		16091	16091	16091
Oil Age	hrs	Client Info		16091	16091	16091
Oil Changed		Client Info		Not Changd	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	31	28	7
Chromium	ppm	ASTM D5185m	>5	1	2	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	<1	5	<1
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>150	3	3	1
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	6	7	18
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	60	57	52
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	924	901	0 = 0
Calcium					301	858
	ppm	ASTM D5185m	1070	1388	1345	858 1269
Phosphorus	ppm	ASTM D5185m ASTM D5185m	1070 1150	-		
Phosphorus Zinc				1388	1345	1269
	ppm	ASTM D5185m	1150	1388 993	1345 1003	1269 965
Zinc	ppm ppm	ASTM D5185m ASTM D5185m	1150 1270	1388 993 1246	1345 1003 1286	1269 965 1181
Zinc Sulfur	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	1150 1270 2060	1388 993 1246 3375	1345 1003 1286 3419	1269 965 1181 3560
Zinc Sulfur CONTAMINAN	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	1150 1270 2060 limit/base	1388 993 1246 3375 current	1345 1003 1286 3419 history1	1269 965 1181 3560 history2
Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1150 1270 2060 limit/base	1388 993 1246 3375 current	1345 1003 1286 3419 history1	1269 965 1181 3560 history2
Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >20	1388 993 1246 3375 current 9	1345 1003 1286 3419 history1 8	1269 965 1181 3560 history2 6
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >20 >20	1388 993 1246 3375 current 9 7	1345 1003 1286 3419 history1 8 6	1269 965 1181 3560 history2 6 2 <1
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m method	1150 1270 2060 limit/base >20 >20 limit/base	1388 993 1246 3375 current 9 7 7	1345 1003 1286 3419 history1 8 6 7	1269 965 1181 3560 history2 6 2 <1
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >20 >20 limit/base >3	1388 993 1246 3375 current 9 7 7 current	1345 1003 1286 3419 history1 8 6 7 history1 0.6	1269 965 1181 3560 history2 6 2 <1 history2
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm TS ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	1150 1270 2060 limit/base >20 >20 limit/base >3 >20	1388 993 1246 3375 current 9 7 7 current 0.7 9.7	1345 1003 1286 3419 history1 8 6 7 history1 0.6 9.8	1269 965 1181 3560 history2 6 2 <1 history2 0.2 5.5
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm TS ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >30	1388 993 1246 3375 current 9 7 7 current 0.7 9.7 20.7	1345 1003 1286 3419 history1 8 6 7 history1 0.6 9.8 21.2	1269 965 1181 3560 history2 6 2 <1 history2 0.2 5.5 19.3
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415 method	1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >30 limit/base	1388 993 1246 3375 current 9 7 7 current 0.7 9.7 20.7	1345 1003 1286 3419 history1 8 6 7 history1 0.6 9.8 21.2 history1	1269 965 1181 3560 history2 6 2 <1 history2 0.2 5.5 19.3



OIL ANALYSIS REPORT

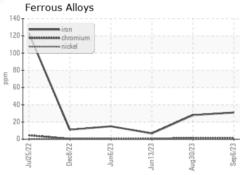


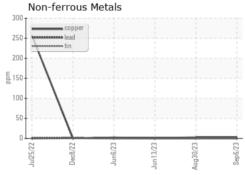
20-	Viscosity	@ 100°C	3			
18-	Abnormal		 			
O 16-	Base					
cSt (100°C)	Abnormal					
12						
	Jul25/22	Dec8/22	Jun6/23	Jun13/23	Aug30/23	

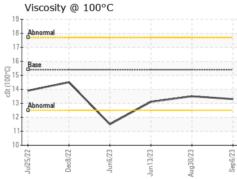
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

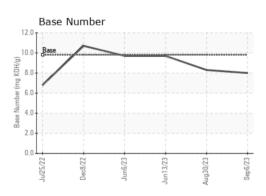
FLUID PROPE	RHES	method	ilmivbase		nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	13.5	13.1

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10645768

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0086865 : 05949809

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

Diagnosed

Received : 13 Sep 2023 : 15 Sep 2023 Diagnostician : Wes Davis

GFL Environmental - 419 - Metro Saginaw

6950 N Michigan Saginaw, MI US 48604 Contact: Jeremy Hines

jhines@gflenv.com T: (800)684-1277

* - 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)