

OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id 924015 Component Diesel Engine Fluid

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

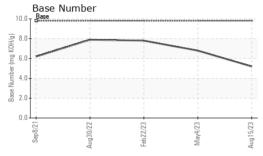
Fluid Condition

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

,		Sep2021				
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0091476	GFL0081243	GFL0071238
Sample Date		Client Info		15 Aug 2023	04 May 2023	22 Feb 2023
Machine Age	hrs	Client Info		22988	22296	21772
Oil Age	hrs	Client Info		22296	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>120	13	17	21
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	3
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	2	<1	2
Tin	ppm	ASTM D5185m	>15	2	<1	2
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	<1	0	16
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	60	35	50
Manganese	ppm	ASTM D5185m	0	<1	<1	2
Magnesium	ppiii					
Magnesium	ppm	ASTM D5185m	1010	957	525	766
Calcium		ASTM D5185m ASTM D5185m	1010 1070	957 1099	525 2128	766 1256
	ppm					
Calcium	ppm	ASTM D5185m	1070	1099	2128	1256
Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m	1070 1150	1099 954	2128 1143	1256 932
Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270	1099 954 1213	2128 1143 1405	1256 932 1177
Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060	1099 954 1213 2900	2128 1143 1405 4149	1256 932 1177 3121
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060 limit/base	1099 954 1213 2900 current	2128 1143 1405 4149 history1	1256 932 1177 3121 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1070 1150 1270 2060 limit/base	1099 954 1213 2900 current	2128 1143 1405 4149 history1	1256 932 1177 3121 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25	1099 954 1213 2900 current 5	2128 1143 1405 4149 history1 6	1256 932 1177 3121 history2 10 4
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25	1099 954 1213 2900 current 5 9 <1	2128 1143 1405 4149 history1 6 6 2	1256 932 1177 3121 history2 10 4
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20 limit/base >4	1099 954 1213 2900 current 5 9 <1	2128 1143 1405 4149 history1 6 6 2 history1	1256 932 1177 3121 history2 10 4 1
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	1070 1150 1270 2060 limit/base >25 >20 limit/base >4	1099 954 1213 2900 current 5 9 <1 current	2128 1143 1405 4149 history1 6 6 2 history1 0.4	1256 932 1177 3121 history2 10 4 1 history2 0.3
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624	1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20	1099 954 1213 2900 current 5 9 <1 current 0.5 9.3	2128 1143 1405 4149 history1 6 6 6 2 history1 0.4 8.3	1256 932 1177 3121 history2 10 4 1 history2 0.3 8.9
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	1099 954 1213 2900 current 5 9 <1 current 0.5 9.3 22.8	2128 1143 1405 4149 history1 6 6 2 history1 0.4 8.3 19.8	1256 932 1177 3121 history2 10 4 1 history2 0.3 8.9 19.5
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7624 *ASTM D7415 method	1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	1099 954 1213 2900 current 5 9 <1 current 0.5 9.3 22.8 current	2128 1143 1405 4149 history1 6 6 2 history1 0.4 8.3 19.8 history1	1256 932 1177 3121 history2 10 4 1 history2 0.3 8.9 19.5 history2



OIL ANALYSIS REPORT

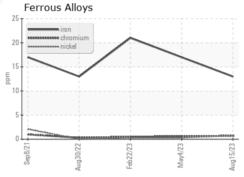


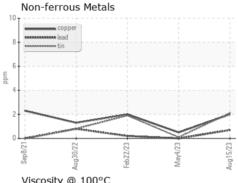
Viscosit	y @ 100°C			
18 - Abnormal				
016 - 10				
© 16 Base 00 15				
13 Abnormal				
Sep8/21-	Aug30/22 -	Feb22/23	May4/23 -	

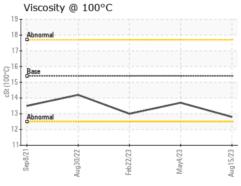
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

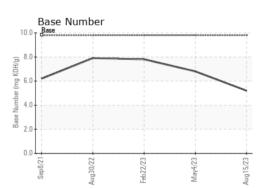
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	13.7	13.0

GRAPHS













Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10607933

: GFL0091476 : 05927986

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 18 Aug 2023 Diagnosed Diagnostician : Wes Davis

: 20 Aug 2023

GFL Environmental - 465 - Pontiac

888 Baldwin Pontiac, MI US 48340

Contact: Ricky Matthews rickymathews@gflenv.com T: (586)825-9514

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)