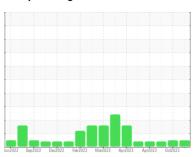


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **810041**

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.

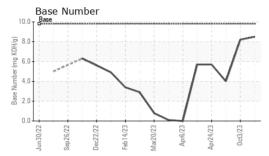
Fluid Condition

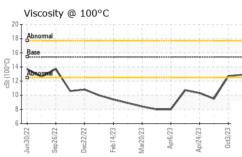
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

,		Tulizozz Gepz	022 Dec2022 Feb2023	Mar2023 Apr2023 Apr2023	Oct2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0088731	GFL0097881	GFL0082851
Sample Date		Client Info		30 Oct 2023	03 Oct 2023	11 May 2023
Machine Age	hrs	Client Info		17656	5814	0
Oil Age	hrs	Client Info		160	365	0
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	ATTENTION
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	12	18
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	5
Lead	ppm	ASTM D5185m	>40	1	<1	<1
Copper	ppm	ASTM D5185m	>330	6	11	4
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 10	history1 70	history2 28
	ppm	ASTM D5185m				
Boron		ASTM D5185m	0	10	70	28
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	10 0	70 0	28
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	10 0 55	70 0 63	28 0 33
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	10 0 55 <1	70 0 63 <1	28 0 33 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	10 0 55 <1 806	70 0 63 <1 801	28 0 33 <1 447
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	10 0 55 <1 806 939	70 0 63 <1 801 1188	28 0 33 <1 447 683
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	10 0 55 <1 806 939 934	70 0 63 <1 801 1188 728	28 0 33 <1 447 683 643
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	10 0 55 <1 806 939 934 1059	70 0 63 <1 801 1188 728 881	28 0 33 <1 447 683 643
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	10 0 55 <1 806 939 934 1059 2576	70 0 63 <1 801 1188 728 881 2390	28 0 33 <1 447 683 643 653 2702
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	10 0 55 <1 806 939 934 1059 2576	70 0 63 <1 801 1188 728 881 2390 history1	28 0 33 <1 447 683 643 653 2702 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	10 0 55 <1 806 939 934 1059 2576 current	70 0 63 <1 801 1188 728 881 2390 history1 6	28 0 33 <1 447 683 643 653 2702 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	10 0 55 <1 806 939 934 1059 2576 current 5	70 0 63 <1 801 1188 728 881 2390 history1 6 17	28 0 33 <1 447 683 643 653 2702 history2 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	10 0 55 <1 806 939 934 1059 2576 current 5 5	70 0 63 <1 801 1188 728 881 2390 history1 6 17	28 0 33 <1 447 683 643 653 2702 history2 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	10 0 55 <1 806 939 934 1059 2576 current 5 5 current	70 0 63 <1 801 1188 728 881 2390 history1 6 17 15	28 0 33 <1 447 683 643 653 2702 history2 5 2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	10 0 55 <1 806 939 934 1059 2576 current 5 5 current 0.3	70 0 63 <1 801 1188 728 881 2390 history1 6 17 15 history1 0.1	28 0 33 <1 447 683 643 653 2702 history2 5 2 1 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	10 0 55 <1 806 939 934 1059 2576 current 5 5 current 0.3 6.3	70 0 63 <1 801 1188 728 881 2390 history1 6 17 15 history1 0.1 6.4	28 0 33 <1 447 683 643 653 2702 history2 5 2 1 history2 0.3 7.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	10 0 55 <1 806 939 934 1059 2576 current 5 5 current 0.3 6.3 17.8	70 0 63 <1 801 1188 728 881 2390 history1 6 17 15 history1 0.1 6.4 19.0	28 0 33 <1 447 683 643 653 2702 history2 5 2 1 history2 0.3 7.4 21.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76445 Method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30 limit/base	10 0 55 <1 806 939 934 1059 2576 current 5 5 6 17.8 current	70 0 63 <1 801 1188 728 881 2390 history1 6 17 15 history1 0.1 6.4 19.0 history1	28 0 33 <1 447 683 643 653 2702 history2 5 2 1 history2 0.3 7.4 21.6 history2



OIL ANALYSIS REPORT

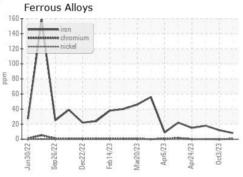


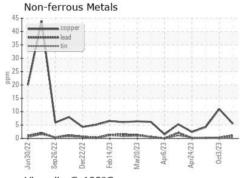


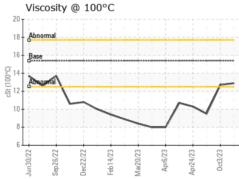
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

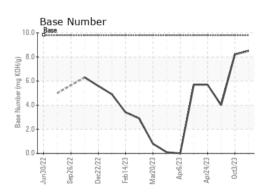
FLUID PROPE	RHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	12.7	△ 9.5

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10723653

: GFL0088731 : 05995293 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 01 Nov 2023 Diagnosed : 02 Nov 2023

Diagnostician : Wes Davis

GFL Environmental - 010 - Stockbridge 1280 Rum Creek Parkway

Stockbridge, GA US 30281

Contact: JOSHUA TINKER joshuatinker@gflenv.com

T: F:

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)

Report Id: GFL010 [WUSCAR] 05995293 (Generated: 11/02/2023 15:37:06) Rev: 1