

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

411055

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

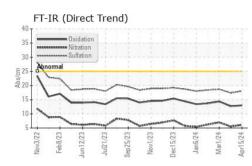
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

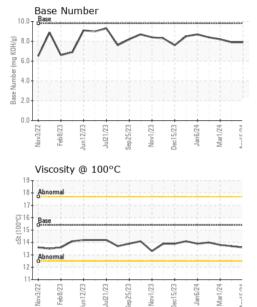
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0113734	GFL0113722	GFL0111111
Sample Date		Client Info		15 Apr 2024	27 Mar 2024	01 Mar 2024
Machine Age	hrs	Client Info		5840	5696	5573
Oil Age	hrs	Client Info		715	571	448
Oil Changed		Client Info		N/A	N/A	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
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	6	5	6
Chromium	ppm	ASTM D5185m	>4	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	1	2
Lead	ppm	ASTM D5185m	>45	<1	<1	0
Copper	ppm	ASTM D5185m	>85	<1	0	0
Tin	ppm	ASTM D5185m	>4	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 23	history1 31	history2 10
	ppm ppm					
Boron		ASTM D5185m	0	23	31	10
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	23 0	31 0	10 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	23 0 76 <1 778	31 0 77	10 0 85
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	23 0 76 <1	31 0 77 0	10 0 85 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	23 0 76 <1 778	31 0 77 0 822	10 0 85 0 876
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	23 0 76 <1 778 1192	31 0 77 0 822 1242	10 0 85 0 876 1010
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	23 0 76 <1 778 1192 958	31 0 77 0 822 1242 1038	10 0 85 0 876 1010 845
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	0 0 60 0 1010 1070 1150 1270	23 0 76 <1 778 1192 958 1099	31 0 77 0 822 1242 1038 1219	10 0 85 0 876 1010 845 1093
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	23 0 76 <1 778 1192 958 1099 3379	31 0 77 0 822 1242 1038 1219 3733	10 0 85 0 876 1010 845 1093 2664
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	23 0 76 <1 778 1192 958 1099 3379 current	31 0 77 0 822 1242 1038 1219 3733 history1	10 0 85 0 876 1010 845 1093 2664 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	23 0 76 <1 778 1192 958 1099 3379 current 6	31 0 77 0 822 1242 1038 1219 3733 history1 6	10 0 85 0 876 1010 845 1093 2664 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	23 0 76 <1 778 1192 958 1099 3379 current 6 <	31 0 77 0 822 1242 1038 1219 3733 history1 6 <	10 0 85 0 876 1010 845 1093 2664 history2 5 <
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30	23 0 76 <1 778 1192 958 1099 3379 current 6 <1 2	31 0 77 0 822 1242 1038 1219 3733 history1 6 < 2	10 0 85 0 876 1010 845 1093 2664 history2 5 < 2 5 <1 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base	23 0 76 <1 778 1192 958 1099 3379 current 6 <1 2 2 current	31 0 77 0 822 1242 1038 1219 3733 history1 6 <1 2	10 0 85 0 876 1010 845 1093 2664 history2 5 <1 9 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base	23 0 76 <1 778 1192 958 1099 3379 current 6 <1 2 current 0.2	31 0 77 0 822 1242 1038 1219 3733 history1 6 < 1 2 history1 0.2	10 0 85 0 876 1010 845 1093 2664 history2 5 <1 9 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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >30 <i>limit/base</i> >20	23 0 76 <1 778 1192 958 1099 3379 current 6 <1 2 current 0.2 6.1	31 0 77 0 822 1242 1038 1219 3733 history1 6 < 4 2 history1 0.2 5.5	10 0 85 0 876 1010 845 1093 2664 history2 5 <1 9 history2 0.3 7.0
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	23 0 76 <1 778 1192 958 1099 3379 <u>current</u> 6 <1 2 <u>current</u> 0.2 6.1 18.0	31 0 77 0 822 1242 1038 1219 3733 history1 6 <1 2 history1 0.2 5.5 17.4	10 0 85 0 876 1010 845 1093 2664 history2 5 <1 9 history2 0.3 7.0 18.7
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 TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7615	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 2060 2060 2060 2	23 0 76 <1 778 1192 958 1099 3379 current 6 <1 2 current 0.2 6.1 18.0	31 0 77 0 822 1242 1038 1219 3733 history1 6 < <1 2 history1 0.2 5.5 17.4 history1	10 0 85 0 876 1010 845 1093 2664 history2 5 <1 9 history2 0.3 7.0 18.7 history2

Submitted By: GFL166, GFL172, GFL180, GFL867, GFL868, GFL955 - Chelsea Bryan



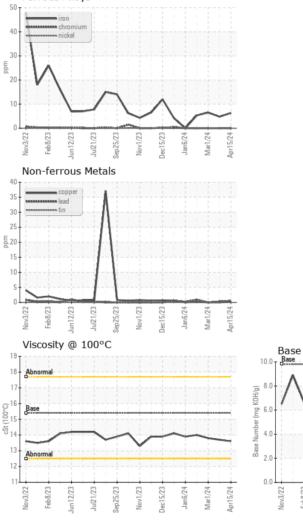
OIL ANALYSIS REPORT

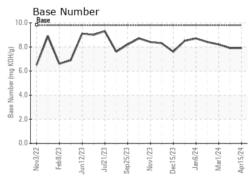




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.7	13.8
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL environmental - 867 - Trafford (Blount Hauling) Sample No. : GFL0113734 Received : 19 Apr 2024 1130 County Line Rd Lab Number : 06153964 Tested : 22 Apr 2024 Trafford, AL Unique Number : 10989387 Diagnosed : 22 Apr 2024 - Wes Davis US 35172 Test Package : FLEET Contact: Jonathan Williams Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jonathan.williams@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: GFL867 [WUSCAR] 06153964 (Generated: 04/22/2024 07:34:39) Rev: 1 Submitted By: GFL166,GFL172,GFL180,GFL867,GFL868,GFL955 - Chelsea Bryan