

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id

713025

Component Diesel Engine Fluid

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

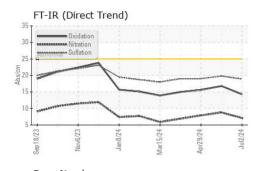
Fluid Condition

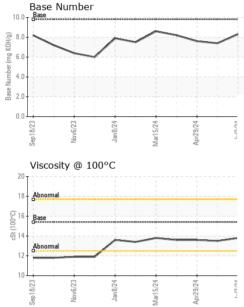
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104968	GFL0104830	GFL0104825
Sample Date		Client Info		02 Jul 2024	21 May 2024	29 Apr 2024
Machine Age	mls	Client Info		19704	19704	17954
Oil Age	mls	Client Info		19704	0	0
Oil Changed		Client Info		N/A	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>90	8	16	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	0	0	3
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 0	history1 <1	history2 1
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	0	<1	1
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	0 0	<1 0	1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 56	<1 0 58	1 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 56 0	<1 0 58 <1	1 0 58 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 56 0 930	<1 0 58 <1 985	1 0 58 1 933
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	0 0 56 0 930 1125	<1 0 58 <1 985 1051	1 0 58 1 933 1028
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	0 0 56 0 930 1125 1049	<1 0 58 <1 985 1051 1026	1 0 58 1 933 1028 1023
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	0 0 56 0 930 1125 1049 1250	<1 0 58 <1 985 1051 1026 1313	1 0 58 1 933 1028 1023 1224
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	0 0 60 0 1010 1070 1150 1270 2060	0 0 56 0 930 1125 1049 1250 3554	<1 0 58 <1 985 1051 1026 1313 3587	1 0 58 1 933 1028 1023 1224 3319
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	0 0 60 0 1010 1070 1150 1270 2060	0 0 56 0 930 1125 1049 1250 3554 current	<1 0 58 <1 985 1051 1026 1313 3587 history1	1 0 58 1 933 1028 1023 1224 3319 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 0 1010 1070 1150 1270 2060 limit/base	0 0 56 0 930 1125 1049 1250 3554 <i>current</i> 3	<1 0 58 <1 985 1051 1026 1313 3587 history1 4	1 0 58 1 933 1028 1023 1023 1224 3319 history2 3
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	0 0 56 0 930 1125 1049 1250 3554 <u>current</u> 3 5	<1 0 58 <1 985 1051 1026 1313 3587 history1 4 3	1 0 58 1 933 1028 1023 1224 3319 history2 3 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 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	0 0 56 0 930 1125 1049 1250 3554 <u>current</u> 3 5 2	<1 0 58 <1 985 1051 1026 1313 3587 history1 4 3 3	1 0 58 1 933 1028 1023 1224 3319 history2 3 5 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	0 0 56 0 930 1125 1049 1250 3554 <i>current</i> 3 5 2 2	<1 0 58 <1 985 1051 1026 1313 3587 history1 4 3 3 3	1 0 58 1 933 1028 1023 1023 1224 3319 history2 3 5 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 225 220 1imit/base >20	0 0 56 0 930 1125 1049 1250 3554 <i>current</i> 3 5 2 2 <i>current</i> 0.4	<1 0 58 <1 985 1051 1026 1313 3587 history1 4 3 3 3 history1 0.5	1 0 58 1 933 1028 1023 1023 1224 3319 history2 3 5 <1 history2 0.4
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 225 220 1imit/base >20	0 0 56 0 930 1125 1049 1250 3554 <i>current</i> 3 5 2 2 <i>current</i> 0.4 7.1	<1 0 58 <1 985 1051 1026 1313 3587 history1 4 3 3 3 history1 0.5 8.8	1 0 58 1 933 1028 1023 1224 3319 history2 3 5 <1 history2 0.4 7.9
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 imit/base >20 20 20	0 0 56 0 930 1125 1049 1250 3554 <i>current</i> 3 5 2 2 <i>current</i> 0.4 7.1 18.9	<1 0 58 <1 985 1051 1026 1313 3587 history1 4 3 3 3 history1 0.5 8.8 19.8	1 0 58 1 933 1028 1023 1224 3319 history2 3 5 <1 history2 0.4 7.9 19.0
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 20 20 20 20 20 20 20 20 20 20	0 0 56 0 930 1125 1049 1250 3554 <i>current</i> 3 5 2 <i>current</i> 0.4 7.1 18.9	<1 0 58 <1 985 1051 1026 1313 3587 history1 4 3 3 history1 0.5 8.8 19.8 history1	1 0 58 1 933 1028 1023 1023 1224 3319 history2 3 5 <1 history2 0.4 7.9 19.0 history2

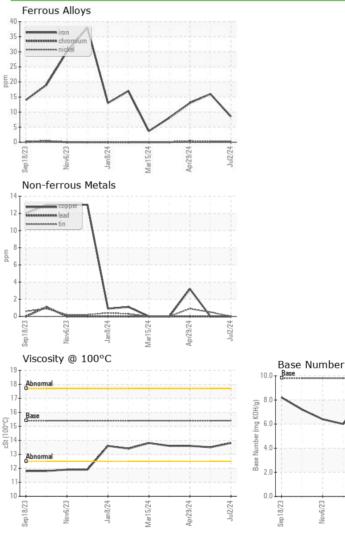


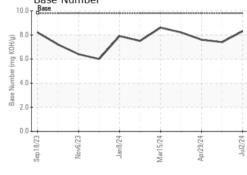
OIL ANALYSIS REPORT





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	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.5	13.6
GRAPHS						





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 820 - Joplin Hauling Sample No. : GFL0104968 Received 3700 West 7th Street : 11 Jul 2024 Lab Number : 06234161 Tested : 12 Jul 2024 Joplin, MO US 64801 Unique Number : 11122995 Diagnosed : 12 Jul 2024 - Wes Davis Test Package : FLEET Contact: James Jarrett Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jjarrett@gflenv.com T: (417)310-2802 * - 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) F: