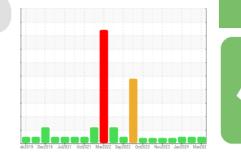


OIL ANALYSIS REPORT

SAMPLE INFORMATION method

Sample Rating Trend



NORMAL

Machine Id

923040-260203

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.

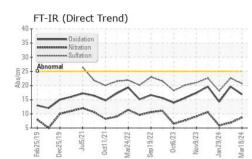
Fluid Condition

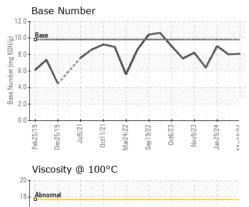
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

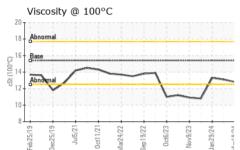
SAMPLE INFOR		method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104888	GFL0104963	GFL0088134
Sample Date		Client Info		18 Mar 2024	13 Feb 2024	29 Jan 2024
Machine Age	mls	Client Info		18918	16529	14894
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
			12 . 14 /1			
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	>100	31	21	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	1	1
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 1	history2 0
	ppm ppm					
Boron Barium	ppm	ASTM D5185m	0	0	1	0
Boron		ASTM D5185m ASTM D5185m	0 0 60	0 0	1 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 60	1 0 58	0 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 60 0	1 0 58 <1	0 0 60 <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 60 0 989	1 0 58 <1 918	0 0 60 <1 942
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 60 0 989 1152	1 0 58 <1 918 980	0 0 60 <1 942 1074
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 60 0 989 1152 1088	1 0 58 <1 918 980 1015	0 0 60 <1 942 1074 1050
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 60 0 989 1152 1088 1335	1 0 58 <1 918 980 1015 1184	0 0 60 <1 942 1074 1050 1299
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 60 0 989 1152 1088 1335 3677	1 0 58 <1 918 980 1015 1184 2899	0 0 60 <1 942 1074 1050 1299 3154
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 0 1010 1070 1150 1270 2060	0 0 60 0 989 1152 1088 1335 3677 current	1 0 58 <1 918 980 1015 1184 2899 history1	0 0 60 <1 942 1074 1050 1299 3154 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 method	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	0 0 60 0 989 1152 1088 1335 3677 current 6	1 0 58 <1 918 980 1015 1184 2899 history1 6	0 0 60 <1 942 1074 1050 1299 3154 history2 4
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	0 0 60 989 1152 1088 1335 3677 current 6 5	1 0 58 <1 918 980 1015 1184 2899 history1 6 6	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	0 0 60 989 1152 1088 1335 3677 current 6 5 <1	1 0 58 <1 918 980 1015 1184 2899 history1 6 6 6 0 0 history1	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 0 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 2060 225 >25 >20 Limit/base >20	0 0 60 989 1152 1088 1335 3677 current 6 5 <1 current 0.8	1 0 58 <1 918 980 1015 1184 2899 history1 6 6 6 0 history1 0.5	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 4 0 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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	0 0 60 0 989 1152 1088 1335 3677 <i>current</i> 6 5 <1 <i>current</i> 0.8 8.7	1 0 58 <1 918 980 1015 1184 2899 history1 6 6 6 0 bistory1 0.5 6.9	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 4 0 Vistory2 0.3 5.9
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 20 320 33 20 20 20	0 0 60 0 989 1152 1088 1335 3677 <i>current</i> 6 5 <1 <i>current</i> 0.8 8.7 20.7	1 0 58 <1 918 980 1015 1184 2899 history1 6 6 6 0 0 history1 0.5 6.9 22.6	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 4 0 bistory2 0.3 5.9 18.1
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 225 220 220 220 20 20 20 20 20 20 20 20 20	0 0 60 0 989 1152 1088 1335 3677 <i>current</i> 6 5 <1 <i>current</i> 0.8 8.7	1 0 58 <1 918 980 1015 1184 2899 history1 6 6 6 0 bistory1 0.5 6.9	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 4 0 Vistory2 0.3 5.9
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 20 320 33 20 20 20	0 0 60 0 989 1152 1088 1335 3677 <i>current</i> 6 5 <1 <i>current</i> 0.8 8.7 20.7	1 0 58 <1 918 980 1015 1184 2899 history1 6 6 6 0 0 history1 0.5 6.9 22.6	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 4 0 bistory2 0.3 5.9 18.1
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 D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 20 30 20 30 20 30 20 20 30 20 20 20 20 20 20 20 20 20 20 20 20 20	0 0 60 989 1152 1088 1335 3677 <i>current</i> 6 5 <1 <i>current</i> 0.8 8.7 20.7	1 0 58 <1 918 980 1015 1184 2899 history1 6 6 6 6 0 V history1 0.5 6.9 22.6 history1	0 0 60 <1 942 1074 1050 1299 3154 history2 4 4 4 0 0 history2 0.3 5.9 18.1 history2



OIL ANALYSIS REPORT

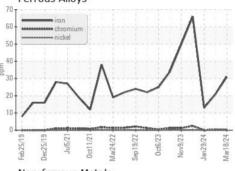


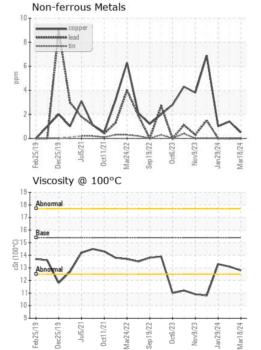


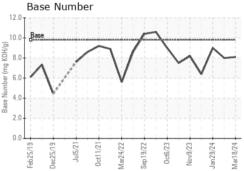


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	12.8	13.1	13.3
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 820 - Joplin Hauling Sample No. : GFL0104888 Received : 24 Apr 2024 3700 West 7th Street Lab Number : 06158740 Tested : 25 Apr 2024 Joplin, MO US 64801 Unique Number : 10994163 Diagnosed : 25 Apr 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 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (417)310-2802 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Mar24/22

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Jul5/21

Report Id: GFL820 [WUSCAR] 06158740 (Generated: 04/25/2024 11:39:47) Rev: 1

Submitted By: VINCE ASTI Page 2 of 2