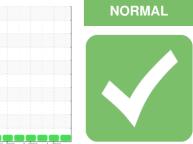


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

921039-260311

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.

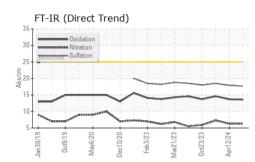
Fluid Condition

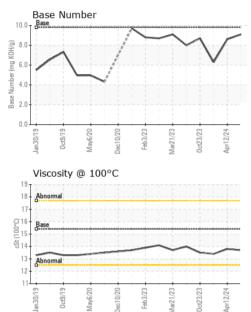
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0123146	GFL0104977	GFL0104850
Sample Date		Client Info		04 Jun 2024	12 Apr 2024	24 Jan 2024
Machine Age	mls	Client Info		0	371767	371767
Oil Age	mls	Client Info		0	371767	24086
Oil Changed		Client Info		N/A	N/A	Changed
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	20	36	35
Chromium	ppm	ASTM D5185m	>4	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	3	2	5
Lead	ppm	ASTM D5185m	>45	0	<1	<1
Copper	ppm	ASTM D5185m	>85	2	<1	<1
Tin	ppm	ASTM D5185m	>4	<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	method ASTM D5185m	limit/base	current 4	history1 0	history2 10
	ppm ppm		0			
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4	0	10
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	0	10 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 56	0 0 58	10 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 56 <1	0 0 58 <1	10 0 55 <1 880 1059
Boron Barium Molybdenum Manganese Magnesium	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	4 0 56 <1 934	0 0 58 <1 958 1091 1049	10 0 55 <1 880 1059 1003
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	4 0 56 <1 934 1031	0 0 58 <1 958 1091 1049 1203	10 0 55 <1 880 1059 1003 1264
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 ASTM D5185m	0 0 60 0 1010 1070 1150	4 0 56 <1 934 1031 1121	0 0 58 <1 958 1091 1049	10 0 55 <1 880 1059 1003
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	4 0 56 <1 934 1031 1121 1251	0 0 58 <1 958 1091 1049 1203	10 0 55 <1 880 1059 1003 1264
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	4 0 56 <1 934 1031 1121 1251 3624	0 0 58 <1 958 1091 1049 1203 3575	10 0 55 <1 880 1059 1003 1264 3011
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 00 00 1010 1070 1150 1270 2060	4 0 56 <1 934 1031 1121 1251 3624 current	0 0 58 <1 958 1091 1049 1203 3575 history1	10 0 55 <1 880 1059 1003 1264 3011 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	4 0 56 <1 934 1031 1121 1251 3624 current 5	0 0 58 <1 958 1091 1049 1203 3575 history1 6	10 0 55 <1 880 1059 1003 1264 3011 history2 7
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	0 0 60 1010 1070 1150 1270 2060 Limit/base >30	4 0 56 <1 934 1031 1121 1251 3624 current 5 12	0 0 58 <1 958 1091 1049 1203 3575 history1 6 12	10 0 55 <1 880 1059 1003 1264 3011 history2 7 7 17
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 Jimit/base >30	4 0 56 <1 934 1031 1121 1251 3624 current 5 12 4	0 0 58 <1 958 1091 1049 1203 3575 history1 6 12 0	10 0 55 <1 880 1059 1003 1264 3011 history2 7 7 17 2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	4 0 56 <1 934 1031 1121 1251 3624 current 5 12 4 current	0 0 58 <1 958 1091 1049 1203 3575 history1 6 12 0	10 0 55 <1 880 1059 1003 1264 3011 history2 7 17 2
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	4 0 56 <1 934 1031 1121 1251 3624 current 5 12 4 current 0.3	0 0 58 <1 958 1091 1049 1203 3575 history1 6 12 0 history1 0.3	10 0 55 <1 880 1059 1003 1264 3011 history2 7 17 2 , 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 <i>limit/base</i> >30 200 <i>limit/base</i> >3 >20	4 0 56 <1 934 1031 1121 1251 3624 <i>current</i> 5 12 4 <i>current</i> 0.3 6.3	0 0 58 <1 958 1091 1049 1203 3575 history1 6 12 0 history1 0.3 6.3	10 0 55 <1 880 1059 1003 1264 3011 history2 7 7 17 2 <i>history2</i> 0.4 7.3
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 imit/base >30 imit/base >3 20	4 0 56 <1 934 1031 1121 1251 3624 current 5 12 4 current 0.3 6.3 17.7	0 0 58 <1 958 1091 1049 1203 3575 history1 6 12 0 history1 0.3 6.3 17.9	10 0 55 <1 880 1059 1003 1264 3011 history2 7 17 2 history2 0.4 7.3 18.5
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	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >30 220 imit/base >30 >20 >30	4 0 56 <1 934 1031 1121 1251 3624 <i>current</i> 5 12 4 <i>current</i> 0.3 6.3 17.7 <i>current</i>	0 0 58 <1 958 1091 1049 1203 3575 history1 6 12 0 history1 0.3 6.3 17.9 history1	10 0 55 <1 880 1059 1003 1264 3011 history2 7 7 17 2 7 17 2 <i>history2</i> 0.4 7.3 18.5 <i>history2</i>



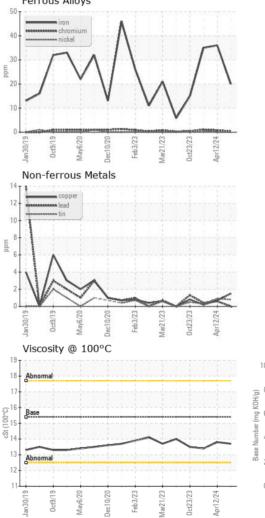
OIL ANALYSIS REPORT

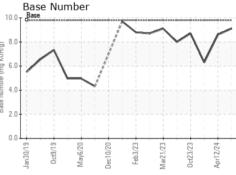




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.7	13.8	13.4
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 820 - Joplin Hauling Sample No. : GFL0123146 Received : 18 Jun 2024 3700 West 7th Street Lab Number : 06214115 Tested : 20 Jun 2024 Joplin, MO US 64801 Unique Number : 11086979 Diagnosed : 20 Jun 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:

Report Id: GFL820 [WUSCAR] 06214115 (Generated: 06/21/2024 18:58:58) Rev: 1

Submitted By: VINCE ASTI Page 2 of 2