

OIL ANALYSIS REPORT

Sample Rating Trend

SAMPLE INFORMATION method limit/base



Machine Id

413059

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.

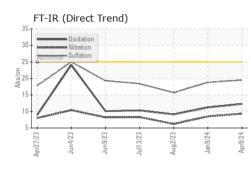
Fluid Condition

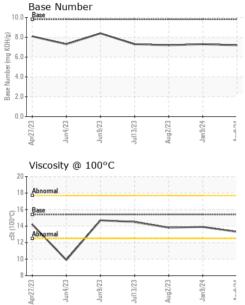
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFURI		method	iimi/base	current	riistory i	riistoryz
Sample Number		Client Info		GFL0105450	GFL0105543	GFL0085497
Sample Date		Client Info		09 Apr 2024	09 Jan 2024	02 Aug 2023
Machine Age	hrs	Client Info		4413	65172	45612
Oil Age	hrs	Client Info		0	65172	45612
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
· · · · · · · · · · · · · · · · · · ·				Nonimae	NOTIWITE	
CONTAMINATI	ON	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	10	9	4
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm		>3	0	0	<1
Aluminum	ppm		>20	4	3	<1
Lead	ppm	ASTM D5185m	>40	1	<1	<1
Copper		ASTM D5185m		<1	1	3
Tin	ppm	ASTM D5185m	>330	<1 <1	0	0
	ppm		>10			÷
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	0	0
Boron Barium	ppm ppm	ASTM D5185m			0	
Boron		ASTM D5185m	0	0	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 0	0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 57	0 0 54	0 0 38
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 57 0	0 0 54 <1	0 0 38 <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 57 0 9	0 0 54 <1 0	0 0 38 <1 8
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 57 0 9 2845	0 0 54 <1 0 2717	0 0 38 <1 8 2354
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 57 0 9 2845 1153	0 0 54 <1 0 2717 1165	0 0 38 <1 8 2354 1013
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 57 0 9 2845 1153 1461	0 0 54 <1 0 2717 1165 1350	0 0 38 <1 8 2354 1013 1212
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 1010 1070 1150 1270 2060	0 0 57 0 9 2845 1153 1461 4066	0 0 54 <1 0 2717 1165 1350 3344	0 0 38 <1 8 2354 1013 1212 3578
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 1010 1070 1150 1270 2060	0 0 57 0 9 2845 1153 1461 4066 current	0 0 54 <1 0 2717 1165 1350 3344 history1	0 0 38 <1 8 2354 1013 1212 3578 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon	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	0 0 57 0 9 2845 1153 1461 4066 current 7	0 0 54 <1 0 2717 1165 1350 3344 history1 10	0 0 38 <1 8 2354 1013 1212 3578 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m 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 imit/base	0 0 57 0 9 2845 1153 1461 4066 <u>current</u> 7 < 1	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20	0 0 57 0 9 2845 1153 1461 4066 current 7 <1 13 current	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0 8 history1	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 1imit/base >20	0 0 57 0 9 2845 1153 1461 4066 <i>current</i> 7 <1 13 <i>current</i> 0.2	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0 8 <u>history1</u> 0.2	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1 5 history2 0.1
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>Imit/base</i> >25 >20 <i>Imit/base</i> >3 >20	0 0 57 0 9 2845 1153 1461 4066 <i>current</i> 7 <1 13 <i>current</i> 0.2 9.3	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0 8 <u>history1</u> 0.2 8.5	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1 5 history2 0.1 6.2
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 >25 >20 1imit/base >20	0 0 57 0 9 2845 1153 1461 4066 <i>current</i> 7 <1 13 <i>current</i> 0.2	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0 8 <u>history1</u> 0.2	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1 5 history2 0.1 6.2 15.7
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>Imit/base</i> >25 >20 <i>Imit/base</i> >3 >20	0 0 57 0 9 2845 1153 1461 4066 <i>current</i> 7 <1 13 <i>current</i> 0.2 9.3	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0 8 <u>history1</u> 0.2 8.5	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1 5 history2 0.1 6.2
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 >25 imit/base >3 >20 >3	0 0 57 0 9 2845 1153 1461 4066 <u>current</u> 7 <1 13 <u>current</u> 0.2 9.3 19.5	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0 8 <u>history1</u> 0.2 8.5 18.8	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1 5 history2 0.1 6.2 15.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	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 225 220 220 220 220 33 220 330 30	0 0 57 0 9 2845 1153 1461 4066 <i>current</i> 7 <1 13 <i>current</i> 0.2 9.3 19.5 <i>current</i>	0 0 54 <1 0 2717 1165 1350 3344 history1 10 0 8 history1 0.2 8.5 18.8 history1	0 0 38 <1 8 2354 1013 1212 3578 history2 7 <1 5 <i>history2</i> 0.1 6.2 15.7 <i>history2</i>



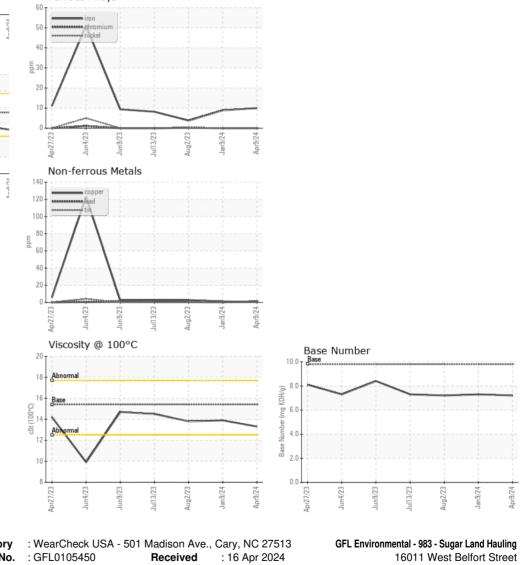
OIL ANALYSIS REPORT





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	13.3	13.9	13.8
GRAPHS						

Ferrous Alloys



Laboratory Sample No. Lab Number : 06150995 Tested : 17 Apr 2024 Sugar Land, TX Unique Number : 10981073 Diagnosed : 19 Apr 2024 - Don Baldridge US 77498 Test Package : FLEET Contact: Adrian Martinez Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. adrianmartinez@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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Submitted By: TECHNICIAN ACCOUNT

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