

OIL ANALYSIS REPORT

Sample Rating Trend

SAMPLE INFORMATION method limit/base

NORMAL



Machine Id 412032-22 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (600 GAL)

022	Feb2023	Apr2023	Jun2023	Sep2023	Dec2023	Mar2024	May2024

DIAGNOSIS	

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

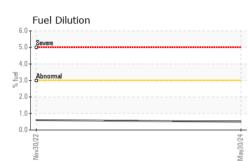
Fluid Condition

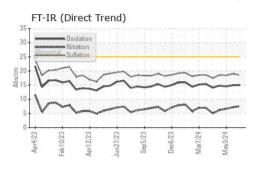
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

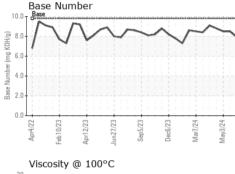
Sample Number		Client Info		GFL0118691	GFL0118670	GFL0118731
Sample Date		Client Info		30 May 2024	24 May 2024	03 May 2024
Machine Age	hrs	Client Info		7228	7148	6695
Oil Age	hrs	Client Info		400	400	600
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
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	>120	7	8	5
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	2
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	2	2	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	<1	0	0
Barium	ppm	ASTM D5185m	0	<1	<1	2
Molybdenum	ppm	ASTM D5185m	60	54	59	58
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	940	1018	941
Calcium			1070	1000		
	ppm	ASTM D5185m	1070	1090	1118	1083
Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	1070	1090	1118 1099	1083 1100
Phosphorus Zinc						
	ppm	ASTM D5185m	1150	1022	1099	1100
Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m	1150 1270	1022 1225	1099 1280	1100 1221
Zinc Sulfur	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1150 1270 2060	1022 1225 3366	1099 1280 3257	1100 1221 3322
Zinc Sulfur CONTAMINAN	ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m method	1150 1270 2060 limit/base	1022 1225 3366 current	1099 1280 3257 history1	1100 1221 3322 history2
Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1150 1270 2060 limit/base	1022 1225 3366 current 0	1099 1280 3257 history1 5	1100 1221 3322 history2 4
Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >25	1022 1225 3366 current 0 4	1099 1280 3257 history1 5 4	1100 1221 3322 history2 4 1
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >25 >20	1022 1225 3366 current 0 4 5	1099 1280 3257 history1 5 4 7	1100 1221 3322 history2 4 1 7
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >25 >20 >3.0	1022 1225 3366 current 0 4 5 0.5	1099 1280 3257 history1 5 4 7 <1.0	1100 1221 3322 history2 4 1 7 <1.0
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	1150 1270 2060 imit/base >25 >20 >3.0	1022 1225 3366 current 0 4 5 0.5 current	1099 1280 3257 history1 5 4 7 <1.0 history1	1100 1221 3322 history2 4 1 7 <1.0 history2
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524	1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4	1022 1225 3366 current 0 4 5 0.5 current 0.2	1099 1280 3257 history1 5 4 7 <1.0 history1 0.2	1100 1221 3322 <u>history2</u> 4 1 7 <1.0 <u>history2</u> 0.2
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 Method *ASTM D7844 *ASTM D7844	1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20	1022 1225 3366 current 0 4 5 0.5 current 0.2 7.5	1099 1280 3257 history1 5 4 7 <1.0 history1 0.2 7.2	1100 1221 3322 <u>history2</u> 4 1 7 <1.0 <u>history2</u> 0.2 6.6
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 Method *ASTM D7844 *ASTM D7844	1150 1270 2060 imit/base >25 >20 >20 >3.0 imit/base >4 >20 >30	1022 1225 3366 current 0 4 5 0.5 current 0.2 7.5 18.5	1099 1280 3257 history1 5 4 7 <1.0 history1 0.2 7.2 19.0	1100 1221 3322 history2 4 1 7 <1.0 history2 0.2 6.6 18.4

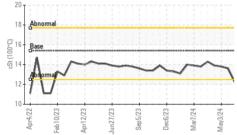


OIL ANALYSIS REPORT



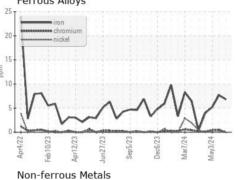


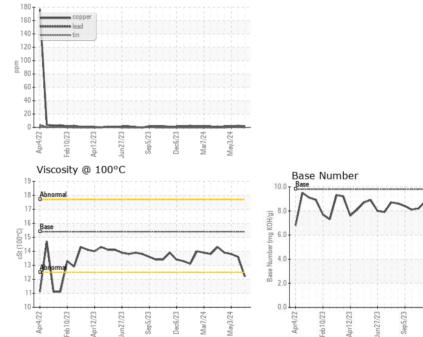




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	12.2	13.6	13.8

GRAPHS Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 166 - Phenix City Sample No. : GFL0118691 Received : 04 Jun 2024 18 Old Brickyard Rd Lab Number : 06198760 Tested : 06 Jun 2024 Phenix City, AL Unique Number : 11060883 Diagnosed : 06 Jun 2024 - Wes Davis US 36869 Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel) Contact: DEAN PEACE JR Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dean.peace@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: DARRIN WRIGHT

Dec6/23 Mar7/24

Page 2 of 2

May3/24