

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area (RB32704) 2332 Component Diesel Engine Fluid PETRO CANADA

Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (40 QTS)

SAMPLE INFORMATION method

John Seydella Aydelli Nerdelli Medelli Jandelli Medelli Medelli Medelli Medelli



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.

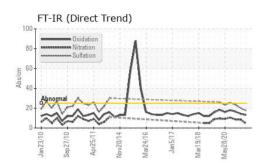
Sample Number		Client Info		GFL0100429	GFL0055204	GFL0006308
Sample Date		Client Info		18 Apr 2024	19 Oct 2023	02 Nov 2020
Machine Age	hrs	Client Info		40441	40288	39124
Oil Age	hrs	Client Info		153	446	507
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINAT	ION	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	>120	4	31	41
Chromium	ppm	ASTM D5185m	>20	<1	<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	1	2	2
Lead	ppm	ASTM D5185m	>40	0	4	19
Copper	ppm	ASTM D5185m	>330	7	4 46	30
Tin	ppm	ASTM D5185m	>15	0	2	<1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	15	10	9
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	58	58	53
Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	60 0	58 <1	58 <1	53 <1
,						
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	0 1010	<1 952	<1 846	<1 891
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	<1 952 1061	<1 846 1055	<1 891 1060
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150	<1 952 1061 999	<1 846 1055 928	<1 891 1060 985
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270	<1 952 1061 999 1214	<1 846 1055 928 1129	<1 891 1060 985 1100
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	<1 952 1061 999 1214 3546	<1 846 1055 928 1129 3193	<1 891 1060 985 1100 2328
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 Imit/base	<1 952 1061 999 1214 3546 current	<1 846 1055 928 1129 3193 history1	<1 891 1060 985 1100 2328 history2
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 Imit/base	<1 952 1061 999 1214 3546 current 3	<1 846 1055 928 1129 3193 history1 4	<1 891 1060 985 1100 2328 history2 4
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	<1 952 1061 999 1214 3546 current 3 <1	<1 846 1055 928 1129 3193 history1 4 8	<1 891 1060 985 1100 2328 history2 4 2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 952 1061 999 1214 3546 current 3 <1 0	<1 846 1055 928 1129 3193 history1 4 8 5	<1 891 1060 985 1100 2328 history2 4 2 <1
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 952 1061 999 1214 3546 current 3 <1 0 current	<1 846 1055 928 1129 3193 history1 4 8 5 history1	<1 891 1060 985 1100 2328 history2 4 2 <1 history2
Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm 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 ASTM D5185m	0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4	<1 952 1061 999 1214 3546 current 3 <1 0 current 0.1	<1 846 1055 928 1129 3193 history1 4 8 5 history1 1.4	<1 891 1060 985 1100 2328 history2 4 2 <1 history2 1.8
Maganese 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415	0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20	<1 952 1061 999 1214 3546 current 3 <1 0 current 0.1 4.5	<1 846 1055 928 1129 3193 history1 4 8 5 history1 1.4 8.5	<1 891 1060 985 1100 2328 history2 4 2 <1 history2 1.8 8.6
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415	0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >4 >20 >30	<1 952 1061 999 1214 3546 <u>current</u> 3 <1 0 <u>current</u> 0.1 4.5 17.6	<1 846 1055 928 1129 3193 history1 4 8 5 history1 1.4 8.5 20.0	<1 891 1060 985 1100 2328 history2 4 2 <1 history2 1.8 8.6 23.5
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 D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >4 >20 >30 imit/base	<1 952 1061 999 1214 3546 current 3 <1 0 current 0.1 4.5 17.6 current	<1 846 1055 928 1129 3193 history1 4 8 5 history1 1.4 8.5 20.0 history1	<1 891 1060 985 1100 2328 history2 4 2 <1 history2 1.8 8.6 23.5 history2

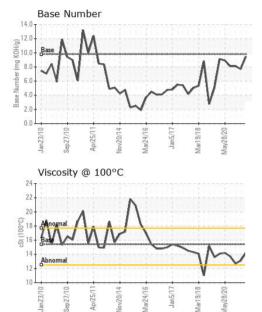
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Submitted By: see also GFL927, GFL930 - Kirk Koss



OIL ANALYSIS REPORT





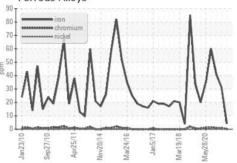
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.2	13.1	12.7
GRAPHS						

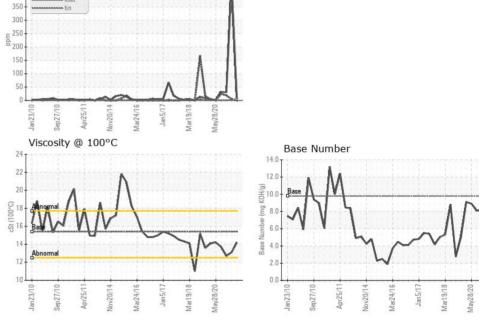
Ferrous Alloys

Non-ferrous Metals

450

400





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 900 - Antigo HC Sample No. : GFL0100429 Received : 23 Apr 2024 1715 Deleglise St. Lab Number : 06158370 Tested : 24 Apr 2024 Antigo, WI US 54409 Unique Number : 10993793 Diagnosed : 24 Apr 2024 - Wes Davis Test Package : FLEET Contact: Kirk Koss Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. kirk.koss@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (715)571-2784 F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Submitted By: see also GFL927, GFL930 - Kirk Koss

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