

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

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Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (11 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

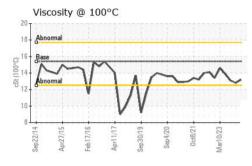
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		2014 Apr20	15 Feb2016 Apr2017	Sep2019 Sep2020 Oct2021 N	Aar2023	
SAMPLE INFORM	JATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0103428	GFL0074614	GFL0092492
Sample Date		Client Info		13 Mar 2024	12 Jan 2024	05 Sep 2023
Machine Age	hrs	Client Info		23672	23294	22778
Oil Age	hrs	Client Info		572	194	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	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 METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	13	17	46
Chromium	ppm	ASTM D5185m	>5	0	<1	2
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>15	<1	3	4
Lead	ppm	ASTM D5185m	>25	0	<1	1
Copper	ppm	ASTM D5185m	>100	11	12	1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	12	59	6
Barium	ppm	ASTM D5185m	0	0	4	0
Molybdenum	ppm	ASTM D5185m	60	60	53	64
Manganese	ppm	ASTM D5185m	0	0	1	<1
Magnesium	ppm	ASTM D5185m	1010			
		AOTIVI DOTODITI	1010	847	514	942
Calcium	ppm	ASTM D5185m	1070	847 1184	514 1473	942 1137
	ppm ppm			-		
Phosphorus		ASTM D5185m	1070	1184	1473	1137
Phosphorus Zinc	ppm	ASTM D5185m ASTM D5185m	1070 1150	1184 981	1473 760	1137 1014
Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270	1184 981 1167	1473 760 897 2618 history1	1137 1014 1274 3045 history2
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1070 1150 1270 2060 limit/base	1184 981 1167 3463 current 4	1473 760 897 2618 history1 9	1137 1014 1274 3045 history2 6
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon	ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060 limit/base	1184 981 1167 3463 current	1473 760 897 2618 history1 9 4	1137 1014 1274 3045 history2
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1070 1150 1270 2060 limit/base >25	1184 981 1167 3463 current 4	1473 760 897 2618 history1 9	1137 1014 1274 3045 history2 6
Phosphorus Zinc Sulfur CONTAMINAN [®] Silicon Sodium	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25	1184 981 1167 3463 current 4 0 0	1473 760 897 2618 history1 9 4 2 2 history1	1137 1014 1274 3045 history2 6 38 3 3 history2
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844	1070 1150 1270 2060 limit/base >25 >20 limit/base >6	1184 981 1167 3463 current 4 0 0 0 current 0.4	1473 760 897 2618 history1 9 4 2 2 history1 0.4	1137 1014 1274 3045 history2 6 38 3 3 history2 1.8
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium 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 D5185m	1070 1150 1270 2060 limit/base >25 >20 limit/base >6	1184 981 1167 3463 current 4 0 0 0 current	1473 760 897 2618 history1 9 4 2 2 history1	1137 1014 1274 3045 history2 6 38 3 3 history2
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844	1070 1150 1270 2060 limit/base >25 >20 limit/base >6	1184 981 1167 3463 current 4 0 0 0 current 0.4	1473 760 897 2618 history1 9 4 2 2 history1 0.4	1137 1014 1274 3045 history2 6 38 3 3 history2 1.8
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm pm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20	1184 981 1167 3463 current 4 0 0 0 current 0.4 5.6 17.6	1473 760 897 2618 history1 9 4 2 history1 0.4 7.0	1137 1014 1274 3045 history2 6 38 3 3 history2 1.8 1.8 11.9
CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm pm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	1184 981 1167 3463 current 4 0 0 0 current 0.4 5.6 17.6	1473 760 897 2618 history1 9 4 2 history1 0.4 7.0 21.1	1137 1014 1274 3045 history2 6 38 3 3 history2 1.8 11.9 22.4



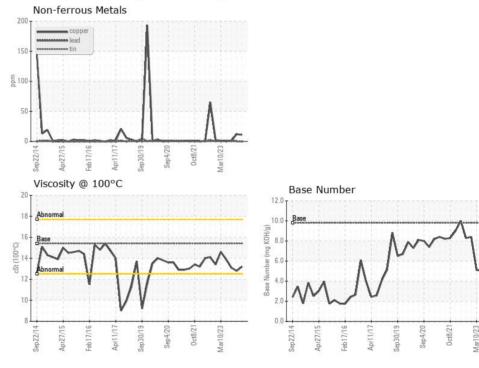
OIL ANALYSIS REPORT

Base Number 12.0 Base Number (mg KOH/g) 9.8 7.9 8 Bas 0.0 Mar10/23 en4/20 0ct8/21 Sep22/14 nr11/1 an 30/1 eh1



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	13.2	12.8	13.1
GRAPHS						

Ferrous Alloys 70 60 50 40 20 10 n Sep4/20 Mar10/23 Feb17/1 Apr11/1 Sep 30/1 PU27/1



: 18 Mar 2024

: 19 Mar 2024

: 19 Mar 2024 - Wes Davis

Test Package : FLEET Contact: Darrell Welch Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. darrell.welch@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (800)207-6618 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

Diagnosed

Tested

Laboratory

Sample No.

Lab Number : 06120499

Unique Number : 10929332

: GFL0103428

2699 Cochran Industrial Blvd

Douglasville, GA

US 30127-1332

GFL Environmental - 095 - Atlanta West

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