

4794 - DIESEL ENGINE

Sample No: GFL0111774

Oil Type: PETRO CANADA DURON SHP 10W30

SAMPLE INFORMATION

Sample Number	GFL0111774	GFL0063214	GFL0020201	GFL11997286
Sample Date	12 Apr 2024	22 Jan 2023	12 Mar 2021	20 Feb 2019
Machine Hours	22552	20777	18435	16503
Oil Hours	480	650	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	SEVERE

GFL Environmental - 557 - Edson

6615 - 4th Ave,

Edson, AB

CA T7E 1M5

Contact: GFL Tech

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F:

OIL CONDITION

Visc @ 40°C	cSt	---	---	---	■ 96.3
Visc @ 100°C	cSt	■ 11.9	■ 12.2	■ 14.6	■ 13.88
Viscosity Index (VI)	Scale	---	---	---	146
Oxidation (PA)	%	■ 81	79	92	---

CONTAMINATION

Water	%	■ NEG	NEG	NEG	■ NEG
Soot %	%	■ 1.6	■ 0.6	■ 0.9	▲ 1.75
Nitration (PA)	%	■ 130	93	110	---
Sulfation (PA)	%	■ 69	62	70	---
Glycol	%	■ 0.0	NEG	NEG	▲ 0.147
Fuel	%	■ <1.0	<1.0	<1.0	■ <1.0
Silicon	ppm	■ 14	■ 8	■ 12	■ 12
Sodium	ppm	● 1799	■ 7	■ 8	▲ 95
Potassium	ppm	■ 7	■ <1	■ 3	■ 6

Diagnosis

Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear. The condition of the oil is acceptable for the time in service (see recommendation).

WEAR METALS

Iron	ppm	▲ 101	■ 55	■ 75	■ 74
Copper	ppm	■ 6	■ 2	■ 11	■ 4
Lead	ppm	■ 6	■ 4	■ 5	■ 2
Tin	ppm	■ <1	■ 1	■ 3	■ 1
Aluminum	ppm	■ 12	■ 4	■ 6	■ 5
Chromium	ppm	■ 7	■ 6	■ 4	■ 3
Molybdenum	ppm	■ 145	■ 61	■ 52	■ 72
Nickel	ppm	■ <1	■ 1	■ 2	■ 2
Titanium	ppm	■ 0	<1	<1	■ 0
Silver	ppm	■ 0	■ 0	■ <1	■ 0
Manganese	ppm	■ 1	■ <1	■ 2	---
Vanadium	ppm	■ 0	0	<1	■ 0

ADDITIVES

Calcium	ppm	■ 1049	■ 1126	■ 1274	■ 1220
Magnesium	ppm	■ 917	■ 969	■ 926	■ 1080
Zinc	ppm	■ 1137	■ 1189	■ 1292	■ 1300
Phosphorus	ppm	■ 863	■ 1066	■ 973	■ 1120
Barium	ppm	■ <1	2:24(21) Rev. 1	■ 2	■ 0
Boron	ppm	■ 4	■ 2	■ 3	■ 11

Depot: GFL557

Unique No: 5773879

Signed: Kevin Marson

Report Date: 02 May 2024

Contact/Location: GFL Tech - GFL557

GRAPHS

