

### **OIL ANALYSIS REPORT**

Sample Rating Trend

12014 Feb2015 Aug2015 Jul2016 Jul2017 May2019 Jan2021 Aug2021 Dec2022 Jun20

### VISCOSITY

Machine Id

# 10432 KENWORTH T300

Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (26 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0117430	GFL0103239	GFL0094686
Sample Date		Client Info		04 Jun 2024	28 Dec 2023	02 Oct 2023
Machine Age	hrs	Client Info		0	22765	22600
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	Not Changd
Sample Status				ATTENTION	ATTENTION	ATTENTION
CONTAMINAT	ION	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	15	5
Chromium	ppm	ASTM D5185m	>20	0	1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	1	<1
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m		<1	2	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m	210	0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ouumum	pp			•	0	0
ADDITIVES		method	limit/base	current	historv1	historv2
ADDITIVES	00m	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	12	4	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	12 <1	4	3 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	12 <1 59	4 0 61	3 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	12 <1 59 <1	4 0 61 <1	3 0 65 <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	12 <1 59 <1 880	4 0 61 <1 975	3 0 65 <1 1075
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	12 <1 59 <1 880 1168	4 0 61 <1 975 1140	3 0 65 <1 1075 1199
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	12 <1 59 <1 880 1168 1097	4 0 61 <1 975 1140 1011	3 0 65 <1 1075 1199 1131
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	12 <1 59 <1 880 1168 1097 1228	4 0 61 <1 975 1140	3 0 65 <1 1075 1199
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	12 <1 59 <1 880 1168 1097	4 0 61 <1 975 1140 1011 1316	3 0 65 <1 1075 1199 1131 1361
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	12 <1 59 <1 880 1168 1097 1228 3493 current	4 0 61 <1 975 1140 1011 1316 3098 history1	3 0 65 <1 1075 1199 1131 1361 3289 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	12 <1 59 <1 880 1168 1097 1228 3493 current 4	4 0 61 <1 975 1140 1011 1316 3098 history1 4	3 0 65 <1 1075 1199 1131 1361 3289 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	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 >25	12 <1 59 <1 880 1168 1097 1228 3493 current 4 3	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	12 <1 59 <1 880 1168 1097 1228 3493 current 4 3 2	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4 4 5	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	12 <1 59 <1 880 1168 1097 1228 3493 current 4 3 2 2 current	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4 4 <1 kistory1	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	12 <1 59 <1 880 1168 1097 1228 3493 <b>current</b> 4 3 2 <b>current</b> 0.7	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4 4 <1 history1 0.8	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6 <1 history2 0.3
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	12 <1 59 <1 880 1168 1097 1228 3493 current 4 3 2 current 0.7 5.9	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4 4 <1 history1 0.8 6.5	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6 <1 6 <1 history2 0.3 5.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	12 <1 59 <1 880 1168 1097 1228 3493 <b>current</b> 4 3 2 <b>current</b> 0.7	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4 4 <1 history1 0.8	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6 <1 history2 0.3
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>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	12 <1 59 <1 880 1168 1097 1228 3493 current 4 3 2 current 0.7 5.9	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4 4 <1 history1 0.8 6.5	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6 <1 6 <1 history2 0.3 5.2
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 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >3	12 <1 59 <1 880 1168 1097 1228 3493 <b>current</b> 4 3 2 <b>current</b> 0.7 5.9 19.1	4 0 61 <1 975 1140 1011 1316 3098 history1 4 4 4 <1 kistory1 0.8 6.5 19.0	3 0 65 <1 1075 1199 1131 1361 3289 history2 4 6 <1 kistory2 0.3 5.2 17.8



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0.0

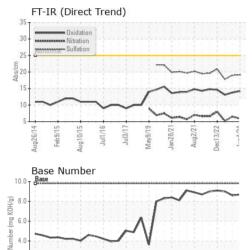
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Base

## **OIL ANALYSIS REPORT**





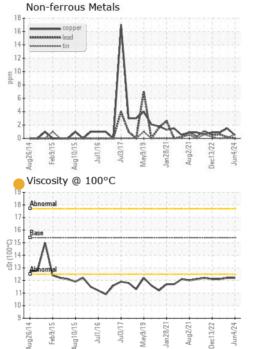
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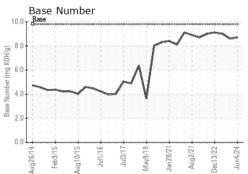
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	<b>12.2</b>	12.2	12.1
GRAPHS						

Ferrous Alloys 60 50 40 Hd 30 20 10 ug26/14 Feb9/15 ull'





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 001 - Raleigh(CNG) Sample No. : GFL0117430 Received : 05 Jun 2024 3741 Conquest Drive Lab Number : 06199809 Tested : 05 Jun 2024 Garner, NC US 27529 Unique Number : 11061932 Diagnosed : 07 Jun 2024 - Sean Felton Test Package : FLEET Contact: Ronald Gregory Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. rgregory@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F: (919)662-1730

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

Report Id: GFL001 [WUSCAR] 06199809 (Generated: 06/07/2024 18:36:12) Rev: 1

Submitted By: Craig Johnson

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