

OIL ANALYSIS REPORT

Sample Rating Trend



Area (TB6648) 920012

Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- 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

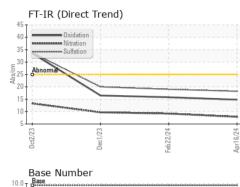
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

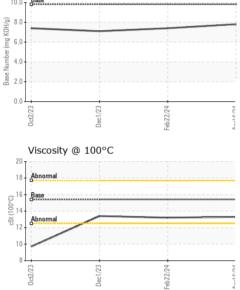
	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0113073	GFL0113030	GFL0059655
Sample Date		Client Info		16 Apr 2024	22 Feb 2024	01 Dec 2023
Machine Age	hrs	Client Info		11360	10727	9819
Oil Age	hrs	Client Info		606	9819	9819
Oil Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	0.3
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	5	9	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	3
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	2	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 6	history1 9	history2 4
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	6	9	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	6 0	9 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6 0 63	9 0 66	4 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	6 0 63 0	9 0 66 <1	4 0 63 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 0 63 0 925	9 0 66 <1 939	4 0 63 0 941
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	6 0 63 0 925 1094	9 0 66 <1 939 1112	4 0 63 0 941 1141
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	6 0 63 0 925 1094 1027	9 0 66 <1 939 1112 957	4 0 63 0 941 1141 1062
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	6 0 63 0 925 1094 1027 1217	9 0 66 <1 939 1112 957 1182	4 0 63 0 941 1141 1062 1275
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	6 0 63 0 925 1094 1027 1217 3133	9 0 66 <1 939 1112 957 1182 2966	4 0 63 0 941 1141 1062 1275 3012
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	0 00 00 1010 1070 1150 1270 2060	6 0 63 0 925 1094 1027 1217 3133 current	9 0 66 <1 939 1112 957 1182 2966 history1	4 0 63 0 941 1141 1062 1275 3012 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	6 0 63 0 925 1094 1027 1217 3133 current 4	9 0 66 <1 939 1112 957 1182 2966 history1 3	4 0 63 0 941 1141 1062 1275 3012 history2 3
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	0 0 60 1010 1070 1150 1270 2060 kimit/base	6 0 63 0 925 1094 1027 1217 3133 current 4 1	9 0 66 <1 939 1112 957 1182 2966 history1 3 2	4 0 63 0 941 1141 1062 1275 3012 history2 3 2
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 0 1010 1070 1150 1270 2060 limit/base >25	6 0 63 0 925 1094 1027 1217 3133 current 4 1 2	9 0 66 <1 939 1112 957 1182 2966 history1 3 2 0	4 0 63 0 941 1141 1062 1275 3012 history2 3 2 2 <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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	6 0 63 0 925 1094 1027 1217 3133 current 4 1 2 2	9 0 66 <1 939 1112 957 1182 2966 history1 3 2 0 0 history1	4 0 63 0 941 1141 1062 1275 3012 history2 3 2 <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 2060 225 >25 >20 Limit/base >20	6 0 63 0 925 1094 1027 1217 3133 <u>current</u> 4 1 2 <u>current</u> 0.3	9 0 66 <1 939 1112 957 1182 2966 history1 3 2 0 history1 0.3	4 0 63 0 941 1141 1062 1275 3012 history2 3 2 <1 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm t 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	6 0 63 0 925 1094 1027 1217 3133 <i>current</i> 4 1 2 <i>current</i> 0.3 7.9	9 0 66 <1 939 1112 957 1182 2966 history1 3 2 0 history1 0.3 9.2	4 0 63 0 941 1141 1062 1275 3012 history2 3 2 <1 history2 0.5 9.7
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20 >3 >20	6 0 63 0 925 1094 1027 1217 3133 current 4 1 2 current 0.3 7.9 18.2	9 0 66 <1 939 1112 957 1182 2966 history1 3 2 0 history1 0.3 9.2 19.0	4 0 63 0 941 1141 1062 1275 3012 history2 3 2 <1 history2 0.5 9.7 20.0

Submitted By: GFL912,GFL921,GFL924 - LEONARD KOZLEUCHAR Page 1 of 2



OIL ANALYSIS REPORT





IE NONE NONE NO	limit/base	method		VISUAL
	NONE	*Visual	scalar	White Metal
	NONE	*Visual	scalar	Yellow Metal
IE NONE NONE NO	NONE	*Visual	scalar	Precipitate
IE NONE NONE NO	NONE	*Visual	scalar	Silt
	NONE	*Visual	scalar	Debris
	NONE	*Visual	scalar	Sand/Dirt
	NORML	*Visual	scalar	Appearance
ML NORML NORML NC	NORML	*Visual	scalar	Odor
	>0.2	*Visual	scalar	Emulsified Water
NEG NEG NE		*Visual	scalar	Free Water
	limit/base	method		FLUID PROP
13.3 13.2 13.	15.4	ASTM D445	cSt	Visc @ 100°C
				GRAPHS
				Ferrous Alloys
				50 - iron 50 - iron
				40
				<u>۾</u> 30
				20
				10
				0
	Apr16/24	Feb 22/24		0ct2/23
	Api	Feit		
			etals	Non-ferrous Meta
				copper
				8 - encourse lead
				6 -
				Шdd
				2
			-	
	524	124		133 133 133 133
	Apr16/24	Feb22/24		0ct2/23
Base Number		Feb22/24		Viscosity @ 100°
Base Number		Feb22/24		Viscosity @ 100°
10.0 Base	1	Feb 22/24		Viscosity @ 100°
10.0 Base	1	Feb22/24		Viscosity @ 100°
10.0 Base	1	Feb22/24		Viscosity @ 100°
10.0 Base	1	Feb22/24		Viscosity @ 100°
10.0 Base (5)HOX Bull Jaquing 4.0	ase Number (mg KOH(g)	Feb22/24		Viscosity @ 100° ²⁰ ¹⁸ ⁴⁰ ¹⁶ ^{Base} ¹⁴ ⁴⁰ ¹⁴ ⁴⁰ ¹⁶ ¹⁴ ⁴⁰
10.0 Base	ase Number (mg KOH(g)	Feb22/24		Viscosity @ 100°
10.0 Base (5)HOX Bull Jaquing 4.0	Base Number (mg KOH/g)	Feb.22/24	0°C	Viscosity @ 100° ²⁰ ¹⁸ ⁴⁰ ¹⁶ ^{Base} ¹⁴ ⁴⁰ ¹⁴ ⁴⁰ ¹⁶ ¹⁴ ⁴⁰

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

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Certificate 12367

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