

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine

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

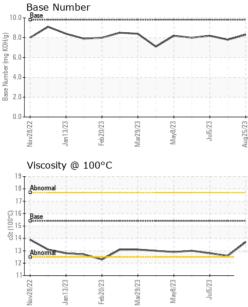
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		mathad	limit/booo	ourropt	biotomit	history 0
SAMPLE INFOR			limit/base	current	history1	history2
Sample Number		Client Info		GFL0087030	GFL0087056	GFL0083664
Sample Date		Client Info		25 Aug 2023	31 Jul 2023	05 Jul 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	9	25	16
Chromium	ppm	ASTM D5185m		1	3	2
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	~ L	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	3	8	4
Lead	ppm	ASTM D5185m		0	1	4 0
Copper	ppm	ASTM D5185m	>85	<1	<1	0
Tin	ppm	ASTM D5185m	>4	<1	1	<1
Vanadium	ppm	ASTM D5185m	24	<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ррпі			Ū	-	-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	o current	3	2
Boron Barium	ppm ppm		0	0 0	3 0	2 0
Boron		ASTM D5185m	0 0 60	0 0 62	3 0 55	2 0 54
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0	0 0	3 0 55 <1	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 62	3 0 55 <1 890	2 0 54 <1 893
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 0 62 <1 988 1229	3 0 55 <1 890 1172	2 0 54 <1 893 1212
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	0 0 62 <1 988 1229 1080	3 0 55 <1 890 1172 992	2 0 54 <1 893 1212 989
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	0 0 62 <1 988 1229	3 0 55 <1 890 1172 992 1256	2 0 54 <1 893 1212 989 1260
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	0 0 60 0 1010 1070 1150	0 0 62 <1 988 1229 1080	3 0 55 <1 890 1172 992	2 0 54 <1 893 1212 989
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	0 0 62 <1 988 1229 1080 1286	3 0 55 <1 890 1172 992 1256	2 0 54 <1 893 1212 989 1260
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 0 60 0 1010 1070 1150 1270 2060	0 0 62 <1 988 1229 1080 1286 3856	3 0 55 <1 890 1172 992 1256 3630	2 0 54 <1 893 1212 989 1260 3634
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 method ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >30	0 0 62 <1 988 1229 1080 1286 3856 current	3 0 55 <1 890 1172 992 1256 3630 history1	2 0 54 <1 893 1212 989 1260 3634 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 method	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >30	0 0 62 <1 988 1229 1080 1286 3856 current 5	3 0 55 <1 890 1172 992 1256 3630 history1 11	2 0 54 <1 893 1212 989 1260 3634 history2 8
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 method ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >30	0 0 62 <1 988 1229 1080 1286 3856 <u>current</u> 5 4	3 0 55 <1 890 1172 992 1256 3630 history1 11 5	2 0 54 <1 893 1212 989 1260 3634 history2 8 4
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 limit/base >30	0 0 62 <1 988 1229 1080 1286 3856 current 5 4 4	3 0 55 <1 890 1172 992 1256 3630 history1 11 5 11	2 0 54 <1 893 1212 989 1260 3634 history2 8 4 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base	0 0 62 <1 988 1229 1080 1286 3856 current 5 4 4 4	3 0 55 <1 890 1172 992 1256 3630 history1 11 5 11 5 11 1 <i>h</i> istory1	2 0 54 <1 893 1212 989 1260 3634 history2 8 4 6 kistory2
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	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >33	0 0 62 <1 988 1229 1080 1286 3856 <u>current</u> 5 4 4 4 <u>current</u>	3 0 55 <1 890 1172 992 1256 3630 history1 11 5 11 5 11 0.3	2 0 54 <1 893 1212 989 1260 3634 history2 8 4 6 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 imit/base >30 220 imit/base >3 >20	0 0 62 <1 988 1229 1080 1286 3856 <i>current</i> 5 4 4 4 <i>current</i> 0.2 5.7	3 0 55 <1 890 1172 992 1256 3630 history1 11 5 11 5 11 0.3 7.7	2 0 54 <1 893 1212 989 1260 3634 history2 8 4 6 history2 0.3 7.0
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 imit/base >30 imit/base >3 >20	0 0 62 <1 988 1229 1080 1286 3856 <i>current</i> 5 4 4 4 <i>current</i> 0.2 5.7 18.7	3 0 55 <1 890 1172 992 1256 3630 history1 11 5 11 5 11 0.3 7.7 19.4	2 0 54 <1 893 1212 989 1260 3634 history2 8 4 6 6 history2 0.3 7.0 18.5
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 D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 200 200 200 200 20	0 0 62 <1 988 1229 1080 1286 3856 <u>current</u> 5 4 4 4 <u>current</u> 0.2 5.7 18.7	3 0 55 <1 890 1172 992 1256 3630 history1 11 5 11 5 11 0.3 7.7 19.4 history1	2 0 54 <1 893 1212 989 1260 3634 history2 8 4 6 history2 0.3 7.0 18.5 history2



OIL ANALYSIS REPORT

VISUAL



aboratory ample No. ab Number nique Number est Package	: WearCheck USA - 5 : GFL0087030 : 05941782 : 10632394	501 Madis Received Diagnose Diagnosti	on Ave., Ca : 05 \$ ed : 05 \$ ician : We	ry, NC 27513 Sep 2023 Sep 2023 s Davis	-	ironmental - 846 3426 Conta	- Mayfield Haulin 6 State Route 4 Mayfield, K' US 4206 act: Jack Lindse sey@gflenv.cor
	Copper a a b c c c c c c c c c c c c c	Mar29/23	Mark023	10.0 9880 Juneac June Color 9880 June Color 98		~~	May8/23 Jul5/23 Jul5/2
Julis 23	GRAPHS Ferrous Alloys	cZ/GZ/PM S	CZJGNeW	Aug25/23 /			
	FLUID PROPE Visc @ 100°C	RTIES cSt	method ASTM D445	limit/base 15.4	current 13.7	history1 12.6	history2 12.8
Jul5/23 Aug25/23	Appearance Odor Emulsified Water Free Water	scalar scalar scalar scalar	*Visual *Visual *Visual	NORML >0.2	NORML NEG NEG	NORML NEG NEG	NORML NEG NEG
23	Silt Debris Sand/Dirt	scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NONE NONE NORML	NONE NONE NONE NORML	NONE NONE NORE	NONE NONE NORML
	Yellow Metal Precipitate	scalar scalar	*Visual *Visual *Visual	NONE NONE	NONE NONE NONE	NONE NONE NONE	NONE

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