

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 928093-260350

Component 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.

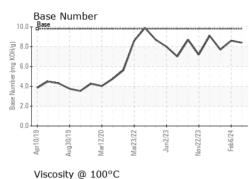
Fluid Condition

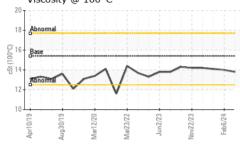
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		pr2019 Au	groto maroro m	ar2022 Jun2023 Nov2023	Feb2024	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0108042	GFL0108085	GFL0102423
Sample Date		Client Info		07 Mar 2024	06 Feb 2024	15 Dec 2023
Machine Age	hrs	Client Info		13835	13673	13500
Oil Age	hrs	Client Info		12919	12757	0
Oil Changed		Client Info		Not Changd	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
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	9	4	4
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	3
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	0	<1
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1 3	history2 3
	ppm	ASTM D5185m				
Boron Barium	ppm	ASTM D5185m	0	1	3	3
Boron		ASTM D5185m ASTM D5185m	0 0 60	1 0	3 0	3 <1
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 59	3 0 57	3 <1 62
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 59 0	3 0 57 <1	3 <1 62 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	1 0 59 0 997	3 0 57 <1 930	3 <1 62 <1 986
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	1 0 59 0 997 1118	3 0 57 <1 930 1005	3 <1 62 <1 986 1108
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	1 0 59 0 997 1118 1059	3 0 57 <1 930 1005 1078	3 <1 62 <1 986 1108 1159
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	1 0 59 0 997 1118 1059 1294	3 0 57 <1 930 1005 1078 1271	3 <1 62 <1 986 1108 1159 1343
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 1010 1070 1150 1270 2060	1 0 59 0 997 1118 1059 1294 3739	3 0 57 <1 930 1005 1078 1271 3206	3 <1 62 <1 986 1108 1159 1343 3296
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	1 0 59 0 997 1118 1059 1294 3739 current	3 0 57 <1 930 1005 1078 1271 3206 history1	3 <1 62 <1 986 1108 1159 1343 3296 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 1010 1070 1150 1270 2060 limit/base >25	1 0 59 0 997 1118 1059 1294 3739 current 5	3 0 57 <1 930 1005 1078 1271 3206 history1 5	3 <1 62 <1 986 1108 1159 1343 3296 history2 6
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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	1 0 59 0 997 1118 1059 1294 3739 current 5 2	3 0 57 <1 930 1005 1078 1271 3206 history1 5 2	3 <1 62 <1 986 1108 1159 1343 3296 history2 6 5
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	1 0 59 0 997 1118 1059 1294 3739 current 5 2 2 <1	3 0 57 <1 930 1005 1078 1271 3206 history1 5 2 2 <1	3 <1 62 <1 986 1108 1159 1343 3296 history2 6 5 5 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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	1 0 59 0 997 1118 1059 1294 3739 current 5 2 <1 current	3 0 57 <1 930 1005 1078 1271 3206 history1 5 2 <1 <1 history1	3 <1 62 <1 986 1108 1159 1343 3296 history2 6 5 <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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >20	1 0 59 0 997 1118 1059 1294 3739 current 5 2 <1 2 <1 0.3	3 0 57 <1 930 1005 1078 1271 3206 history1 5 2 <1 5 2 <1 history1 0.2	3 <1 62 <1 986 1108 1159 1343 3296 history2 6 5 <1 history2 0
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	1 0 59 0 997 1118 1059 1294 3739 <i>current</i> 5 2 <1 5 2 <1 <i>current</i> 0.3 6.1	3 0 57 <1 930 1005 1078 1271 3206 history1 5 2 2 <1 5 2 1 0.2 5.0	3 <1 62 <1 986 1108 1159 1343 3296 history2 6 5 <1 6 5 <1 history2 0 8.5
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 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 3 20 3 3 20 3 3 20 3 3 20 3 3 3 20 3 3 3 20 3 3 3 3	1 0 59 0 997 1118 1059 1294 3739 current 5 2 <1 5 2 <1 current 0.3 6.1 18.0 current	3 0 57 <1 930 1005 1078 1271 3206 history1 5 2 <1 5 2 <1 0.2 5.0 17.6 history1	3 <1 62 <1 986 1108 1159 1343 3296 history2 6 5 <1 history2 0 8.5 20.2 history2
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 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	1 0 59 0 997 1118 1059 1294 3739 <u>current</u> 5 2 <1 5 2 <1 0.3 6.1 18.0	3 0 57 <1 930 1005 1078 1271 3206 history1 5 2 <1 5 2 <1 history1 0.2 5.0 17.6	3 <1 62 <1 986 1108 1159 1343 3296 history2 6 5 <1 history2 0 8.5 20.2

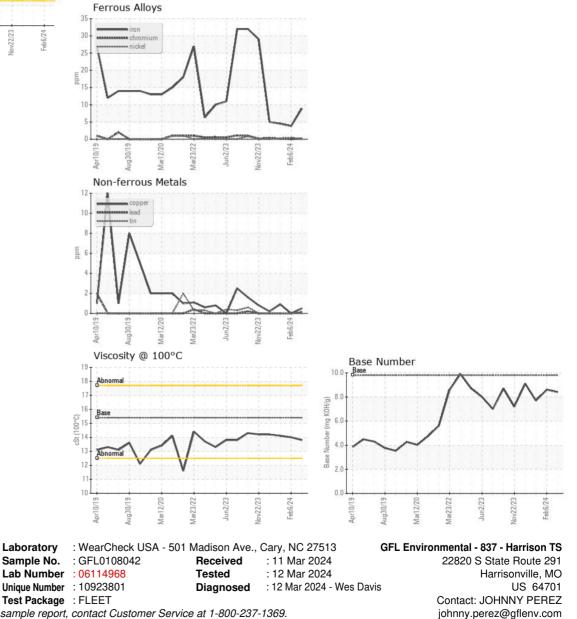


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.8	14.0	14.1
GRAPHS						





To discuss this sample report, contact Customer Service at 1-800-237-1369. job * - 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)

Certificate L2367

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