

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 215007

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.

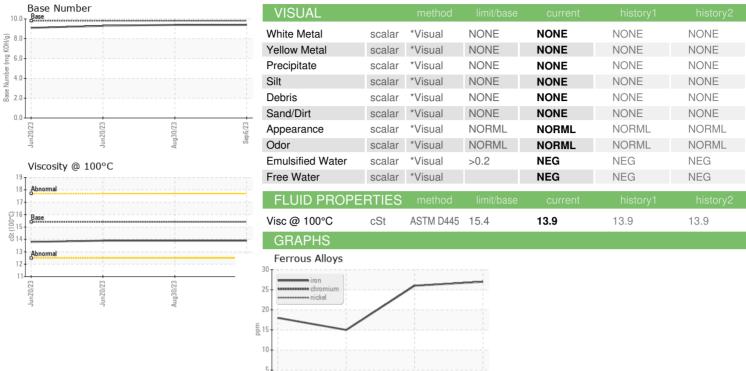
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086844	GFL0072543	GFL0072559
Sample Date		Client Info		06 Sep 2023	30 Aug 2023	20 Jun 2023
Machine Age	hrs	Client Info		7742	7822	7742
Oil Age	hrs	Client Info		7742	7822	0
Oil Changed		Client Info		Not Changd	Not Changd	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	>100	27	26	18
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m	- T	0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	4	3
Lead	ppm	ASTM D5185m	>40	1	2	<1
Copper	ppm	ASTM D5185m	>330	2	2	2
Tin	ppm		>15	= <1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
	1-1-		11 1.0		-	
		method	limit/hase		history1	history2
ADDITIVES Boron	mag	method ASTM D5185m	limit/base	current	history1 6	history2 9
Boron	ppm	ASTM D5185m	0	7	6	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	7 0	6 0	9 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	7 0 59	6 0 57	9 0 57
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60	7 0	6 0 57 <1	9 0
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	7 0 59 <1	6 0 57	9 0 57 <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	7 0 59 <1 983	6 0 57 <1 932	9 0 57 <1 933
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	7 0 59 <1 983 1183	6 0 57 <1 932 1149	9 0 57 <1 933 1111
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	7 0 59 <1 983 1183 1018	6 0 57 <1 932 1149 970	9 0 57 <1 933 1111 1020
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	7 0 59 <1 983 1183 1018 1261	6 0 57 <1 932 1149 970 1222	9 0 57 <1 933 1111 1020 1272
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	7 0 59 <1 983 1183 1018 1261 3761	6 0 57 <1 932 1149 970 1222 3589	9 0 57 <1 933 1111 1020 1272 3894
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	7 0 59 <1 983 1183 1018 1261 3761 current	6 0 57 <1 932 1149 970 1222 3589 history1	9 0 57 <1 933 1111 1020 1272 3894 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	7 0 59 <1 983 1183 1018 1261 3761 <i>current</i> 4	6 0 57 <1 932 1149 970 1222 3589 history1 5	9 0 57 <1 933 1111 1020 1272 3894 history2 2
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 0 1010 1070 1150 1270 2060 limit/base >25	7 0 59 <1 983 1183 1018 1261 3761 <u>current</u> 4 1	6 0 57 <1 932 1149 970 1222 3589 history1 5 2	9 0 57 <1 933 1111 1020 1272 3894 history2 2 1
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 >25 >20	7 0 59 <1 983 1183 1018 1261 3761 current 4 1 1 <1	6 0 57 <1 932 1149 970 1222 3589 history1 5 2 2 <1	9 0 57 <1 933 1111 1020 1272 3894 history2 2 1 2 1 2
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 limit/base >25	7 0 59 <1 983 1183 1018 1261 3761 current 4 1 <1 <1	6 0 57 <1 932 1149 970 1222 3589 history1 5 2 <1 5	9 0 57 <1 933 1111 1020 1272 3894 history2 2 1 2 1 2 1 2 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	7 0 59 <1 983 1183 1018 1261 3761 <i>current</i> 4 1 <1 <1 <i>current</i> 1.2	6 0 57 <1 932 1149 970 1222 3589 history1 5 2 <1 5 2 <1 history1 1.2	9 0 57 <1 933 1111 1020 1272 3894 history2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2
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	7 0 59 <1 983 1183 1018 1261 3761 <i>current</i> 4 1 <1 <1 <i>current</i> 1.2 9.3	6 0 57 <1 932 1149 970 1222 3589 history1 5 2 <1 5 2 <1 history1 1.2 9.1	9 0 57 <1 933 1111 1020 1272 3894 history2 2 2 1 2 2 1 2 <i>history2</i> 0.9 7.6
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 >25 imit/base >3 >20	7 0 59 <1 983 1183 1018 1261 3761 <i>current</i> 4 1 <1 <1 <i>current</i> 1.2 9.3 19.9	6 0 57 <1 932 1149 970 1222 3589 history1 5 2 <1 5 2 <1 history1 1.2 9.1 20.4	9 0 57 <1 933 1111 1020 1272 3894 history2 2 1 2 1 2 1 2 history2 0.9 7.6 20.2
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 TS 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 20 20 20 20 20 20 20 20 20 20 20 20	7 0 59 <1 983 1183 1018 1261 3761 <i>current</i> 4 1 <1 <1 <i>current</i> 1.2 9.3 19.9 <i>current</i>	6 0 57 <1 932 1149 970 1222 3589 history1 5 2 <1 5 2 <1 1.2 9.1 20.4 history1	9 0 57 <1 933 1111 1020 1272 3894 history2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2



OIL ANALYSIS REPORT



		VISUAL		method	limit/base	current	history1	history2
		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Aug30/23 -		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
	ug30/23 - Sep6/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
13(Sept	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
					11 1. 1			
		FLUID PROPE		method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.9	13.9
		GRAPHS						
		Ferrous Alloys						
561		25						
J2 Priv	Aug 30/23	nickel						
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		Viscosity @ 100°C				Base Number		
		19			10.0			
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		Jun20/23 Jun20/23		Aug30/23	Sep6/23	Jun20/23	Jun 20/23 Aug 30/23	
		un2 un2		Aug3	Sep	Jun2	Aug3	5

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