

OIL ANALYSIS REPORT

Sample Rating Trend





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.

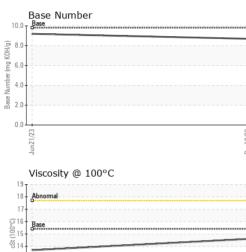
		and the second	Provide Review		In the transmission	la la tra ma O
SAMPLE INFORI	VIATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0098408	GFL0076890	
Sample Date		Client Info		18 Dec 2023	21 Jun 2023	
Machine Age	hrs	Client Info		29893	29760	
Oil Age	hrs	Client Info		0	600	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>120	12	10	
Chromium	ppm ppm	ASTM D5185m	>20	<1	0	
Nickel	ppm	ASTM D5185m	>5	0	0	
Titanium	ppm	ASTM D5185m		۰ <1	0	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m		3	2	
Lead	ppm	ASTM D5185m	>40	۲ ۲	0	
Copper	ppm	ASTM D5185m		2	2	
Tin	ppm	ASTM D5185m	>15	= <1	0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current		historv2
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	10	history1 38	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	10 9	history1 38 4	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	10 9 60	history1 38 4 56	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	10 9 60 0	history1 38 4 56 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	10 9 60 0 892	history1 38 4 56 0 734	
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	10 9 60 0 892 1065	history1 38 4 56 0 734 953	
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	10 9 60 0 892 1065 995	history1 38 4 56 0 734 953 791	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	10 9 60 0 892 1065 995 1142	history1 38 4 56 0 734 953 791 984	
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	10 9 60 0 892 1065 995 1142 3187	history1 38 4 56 0 734 953 791 984 2963	
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 0 60 1010 1070 1150 1270 2060	10 9 60 0 892 1065 995 1142 3187 current	history1 38 4 56 0 734 953 791 984 2963 history1	
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	10 9 60 0 892 1065 995 1142 3187 current 3	history1 38 4 56 0 734 953 791 984 2963 history1 7	 history2
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 kimit/base >25	10 9 60 0 892 1065 995 1142 3187 current 3 0	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1	 history2
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	10 9 60 0 892 1065 995 1142 3187 current 3 0 2	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1 1	 history2
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	10 9 60 0 892 1065 995 1142 3187 current 3 0 2	history1 38 4 56 0 734 953 791 984 2963 history1 7 1 history1	 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	10 9 60 0 892 1065 995 1142 3187 current 3 0 2 2 current 2.9	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1 1 history1 1.6	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	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> >4 >20	10 9 60 0 892 1065 995 1142 3187 <i>current</i> 3 0 2 <i>current</i> 2.9 7.2	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1 1 history1 1.6 7.3	 history2 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	10 9 60 0 892 1065 995 1142 3187 current 3 0 2 2 current 2.9	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1 1 history1 1.6	 history2 history2 history2
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> >4 >20	10 9 60 0 892 1065 995 1142 3187 <i>current</i> 3 0 2 <i>current</i> 2.9 7.2	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1 1 history1 1.6 7.3	 history2 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 D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	10 9 60 0 892 1065 995 1142 3187 current 3 0 2 2 current 2.9 7.2 21.6	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1 1 history1 1.6 7.3 20.8	 history2 history2 history2 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 D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	10 9 60 0 892 1065 995 1142 3187 <i>current</i> 3 0 2 <i>current</i> 2.9 7.2 21.6	history1 38 4 56 0 734 953 791 984 2963 history1 7 <1 1 history1 1.6 7.3 20.8 history1	 history2 history2 history2 history2



Base

13 Abnormal 12 11 Jun21/23

OIL ANALYSIS REPORT



	VISUAL		method				history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
8 2 2 2	Appearance Odor	scalar	*Visual	NORML	NORML	NORML	
c	0001	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.6	13.7	
	GRAPHS						
	Ferrous Alloys						
	12 iron						
	10- chromium						
	8						
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	Non-ferrous Meta				Base Number		
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	Non-ferrous Meta			Ber19/33	Base		
	Non-ferrous Meta			Ber19/33	Base		
	Non-ferrous Meta			Ber19/33	Base		
	Non-ferrous Meta			Ber19/33	Base		
	Non-ferrous Meta			Ber19/33	Base		
	Non-ferrous Meta			0.0 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Base		
	Non-ferrous Meta			10.0 (0)H0X but 4.0 (0)H0X but 4.0 (Base		
	Non-ferrous Meta			10.0 Dec 18/33 Peece 13/34 Peece 13/34 Pee	Base		
	Non-ferrous Meta			10.0 (0)H0X but 4.0 (0)H0X but 4.0 (Base		
Laboratory	Non-ferrous Meta		son Ave., Ca	EZ01913 EZ019 EZ019 EZ01913 EZ01913 EZ01913 EZ01913 EZ01913 EZ01913	Base	rironmental - 409	
Sample No.	Non-ferrous Meta	501 Madia	dd : 26 l	10.0 ())Hoy bu	Base		- Wood Island L State Hwy M2
Sample No. Lab Number	Non-ferrous Meta	501 Madia	d : 26 l ed : 27 l	10.0 () () () () () () () () () ()	Base		- Wood Island L State Hwy M2 Wetmore, N
Sample No. Lab Number Unique Number	Non-ferrous Meta	501 Madia	d : 26 l ed : 27 l	10.0 ())Hoy bu	Base	E10081	State Hwy M2 Wetmore, N US 4989
Sample No. Lab Number	Non-ferrous Meta	501 Madia Recieved Diagnost	d : 26 ed : 27 tician : We	10.0 10.0	Base	E10081	- Wood Island L State Hwy M2 Wetmore, N

Submitted By: TECHNICIAN ACCOUNT