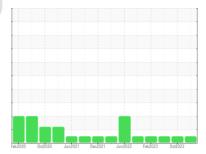


OIL ANALYSIS REPORT







Machine Id **1926725** Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (35 QTS)

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.

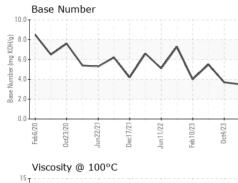
Fluid Condition

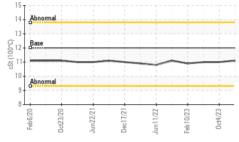
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0115456	PCA0107395	PCA0101694
Sample Date		Client Info		31 Dec 2023	04 Oct 2023	16 Jul 2023
Machine Age	mls	Client Info		362350	0	321709
Oil Age	mls	Client Info		40641	20000	321709
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<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	66	62	48
Chromium	ppm	ASTM D5185m	>20	1	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m		3	3	4
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>25	6	6	5
Lead	ppm	ASTM D5185m	>40	4	1	2
Copper	ppm	ASTM D5185m	>330	7	9	8
Tin	ppm	ASTM D5185m	>15	2	2	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current		history2 0
	ppm ppm	ASTM D5185m			history1	
Boron		ASTM D5185m	2	<1	history1 0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	<1 0	history1 0 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	<1 0 50	history1 0 0 55	0 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	<1 0 50 1	history1 0 0 55 <1	0 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	<1 0 50 1 826	history1 0 0 55 <1 893	0 0 60 <1 915
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	<1 0 50 1 826 1044	history1 0 0 55 <1 893 1066	0 0 60 <1 915 1190
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	2 0 50 950 1050 995	<1 0 50 1 826 1044 940	history1 0 55 <1 893 1066 1004	0 0 60 <1 915 1190 1022
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	2 0 50 0 950 1050 995 1180	<1 0 50 1 826 1044 940 1113	history1 0 0 55 <1 893 1066 1004 1220	0 0 60 <1 915 1190 1022 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	2 0 50 950 1050 995 1180 2600	<1 0 50 1 826 1044 940 1113 2646	history1 0 55 <1 893 1066 1004 1220 2516	0 0 60 <1 915 1190 1022 1260 2981
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	2 0 50 950 1050 995 1180 2600	<1 0 50 1 826 1044 940 1113 2646 current	history1 0 55 <1 893 1066 1004 1220 2516 history1	0 0 60 <1 915 1190 1022 1260 2981 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	2 0 50 950 1050 995 1180 2600 Limit/base >25	<1 0 50 1 826 1044 940 11113 2646 <i>current</i> 6	history1 0 55 <1 893 1066 1004 1220 2516 history1 6	0 0 60 <1 915 1190 1022 1260 2981 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	2 0 50 950 1050 995 1180 2600 Limit/base >25	<1 0 50 1 826 1044 940 1113 2646 <u>current</u> 6 25	history1 0 0 55 <1 893 1066 1004 1220 2516 history1 6 25	0 0 60 <1 915 1190 1022 1260 2981 history2 6 14
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	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 50 1 826 1044 940 1113 2646 <i>current</i> 6 25 8	history1 0 0 55 <1 893 1066 1004 1220 2516 history1 6 25 9	0 0 60 <1 915 1190 1022 1260 2981 history2 6 14 9
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	2 0 50 0 950 1050 995 1180 2600 imit/base >25 -20 imit/base	<1 0 50 1 826 1044 940 1113 2646 current 6 25 8	history1 0 0 55 <1 893 1066 1004 1220 2516 history1 6 25 9 history1	0 0 60 <1 915 1190 1022 1260 2981 history2 6 14 9 y
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	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	<1 0 50 1 826 1044 940 1113 2646 <i>current</i> 6 25 8 <i>current</i> 0.8	history1 0 0 55 <1 893 1066 1004 1220 2516 history1 6 25 9 history1 0.7	0 0 60 <1 915 1190 1022 1260 2981 history2 6 14 9 history2 0.5
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	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	<1 0 50 1 826 1044 940 1113 2646 <i>current</i> 6 25 8 <i>current</i> 0.8 13.7	history1 0 0 55 <1 893 1066 1004 1220 2516 history1 6 25 9 history1 0.7 12.8	0 0 60 <1 915 1190 1022 1260 2981 history2 6 14 9 history2 0.5 10.8
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	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20 >3 >20	<1 0 50 1 826 1044 940 1113 2646 <i>current</i> 6 25 8 <i>current</i> 0.8 13.7 26.2	history1 0 0 55 <1 893 1066 1004 1220 2516 history1 6 25 9 history1 0.7 12.8 25.8	0 0 60 <1 915 1190 1022 1260 2981 history2 6 14 9 <u>history2</u> 0.5 10.8 22.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	<1 0 50 1 826 1044 940 1113 2646 Current 6 25 8 Current 0.8 13.7 26.2 Current	history1 0 0 55 <1 893 1066 1004 1220 2516 history1 6 255 9 history1 0.7 12.8 25.8 history1	0 0 60 <1 915 1190 1022 1260 2981 history2 6 14 9 history2 0.5 10.8 22.6 history2

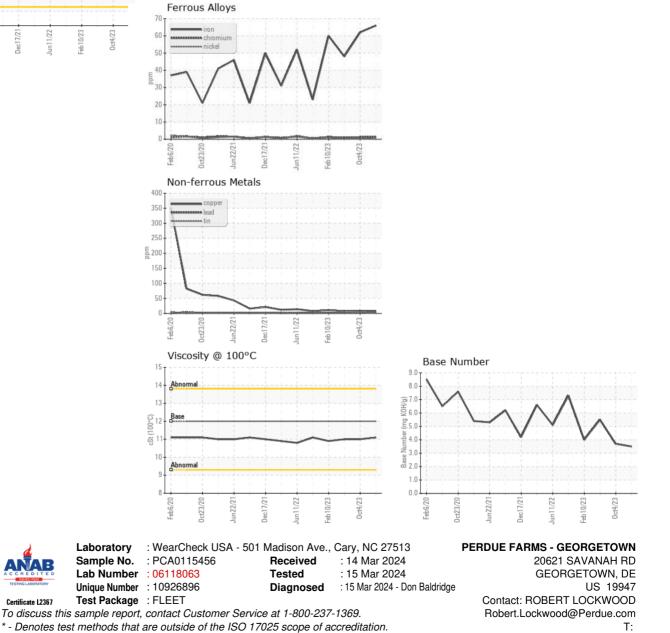


OIL ANALYSIS REPORT





VISUAL		method				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	12.00	11.1	11.0	11.0
GRAPHS						



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

Certificate L2367

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