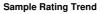


OIL ANALYSIS REPORT





Machine Id **311161** Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

A Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

🔺 Wear

The aluminum level is abnormal. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

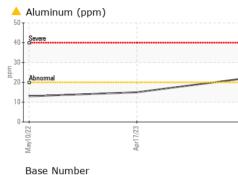
Fluid Condition

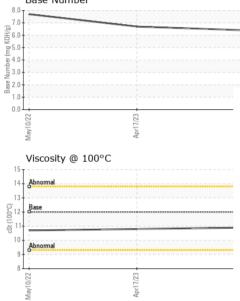
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

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SAMPLE INFORI		method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0113380	PCA0095914	PCA0072457
Sample Date		Client Info		01 Dec 2023	17 Apr 2023	10 May 2022
Machine Age	mls	Client Info		0	85238	38931
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Changd	Changed
Sample Status				ABNORMAL	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	46	33	32
Chromium	ppm		>20	2	1	2
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m	- T	0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm		>20	▲ 22	15	13
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm		>330	4	3	5
Tin	ppm	ASTM D5185m	>15	1	<1	1
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
o dan marin						
		mothod	limit/bass			history2
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	current 10	history1 15	20
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2	current 10 0	<mark>history1</mark> 15 2	20 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 10 0 93	history1 15 2 93	20 0 52
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 10 0 93 1	history1 15 2 93 1	20 0 52 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	current 10 0 93 1 922	history1 15 2 93 1 885	20 0 52 1 945
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current 10 0 93 1 922 1103	history1 15 2 93 1 885 1043	20 0 52 1 945 1167
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 0 950 1050 995	Current 10 0 93 1 922 1103 948	history1 15 2 93 1 885 1043 922	20 0 52 1 945 1167 974
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	2 0 50 0 950 1050 995 1180	current 10 0 93 1 922 1103 948 1240	history1 15 2 93 1 885 1043 922 1156	20 0 52 1 945 1167 974 1119
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	2 0 50 950 1050 995 1180 2600	Current 10 0 93 1 922 1103 948	history1 15 2 93 1 885 1043 922 1156 3066	20 0 52 1 945 1167 974 1119 2752
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	current 10 0 93 1 922 1103 948 1240 2945 current	history1 15 2 93 1 885 1043 922 1156 3066 history1	20 0 52 1 945 1167 974 1119 2752 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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 10 0 93 1 922 1103 948 1240 2945 current 6	history1 15 2 93 1 885 1043 922 1156 3066 history1 6	20 0 52 1 945 1167 974 1119 2752 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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	current 10 0 93 1 922 1103 948 1240 2945 current 6 3	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2	20 0 52 1 945 1167 974 1119 2752 history2 5 < 1
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 10 0 93 1 922 1103 948 1240 2945 current 6	history1 15 2 93 1 885 1043 922 1156 3066 history1 6	20 0 52 1 945 1167 974 1119 2752 history2 5
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	2 0 50 950 1050 995 1180 2600 limit/base >25	current 10 0 93 1 922 1103 948 1240 2945 current 6 3 36	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2	20 0 52 1 945 1167 974 1119 2752 history2 5 < 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	2 0 50 0 950 1050 995 1180 2600 limit/base >25	current 10 0 93 1 922 1103 948 1240 2945 current 6 3 36	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2 28	20 0 52 1 945 1167 974 1119 2752 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	current 10 0 93 1 922 1103 948 1240 2945 current 6 3 36 current	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2 28 history1	20 0 52 1 945 1167 974 1119 2752 history2 5 <1 12 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	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current 10 0 93 1 922 1103 948 1240 2945 current 6 3 36 current 0.7	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2 28 history1 0.4	20 0 52 1 945 1167 974 1119 2752 history2 5 <1 12 12 history2 0.4
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 limit/base >25 20 limit/base >3 >20	current 10 0 93 1 922 1103 948 1240 2945 current 6 3 36 current 0.7 11.2	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2 28 history1 0.4 9.2	20 0 52 1 945 1167 974 1119 2752 history2 5 <1 12 12 history2 0.4 9.1
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 limit/base >25 20 limit/base >3 >20 >30 limit/base	current 10 0 93 1 922 1103 948 1240 2945 current 6 3 36 current 0.7 11.2 22.5	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2 28 history1 0.4 9.2 17.9	20 0 52 1 945 1167 974 1119 2752 history2 5 <1 12 history2 0.4 9.1 18.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 limit/base >25 20 limit/base >3 >20 >30 limit/base	current 10 0 93 1 922 1103 948 1240 2945 current 6 3 0.7 11.2 22.5 current	history1 15 2 93 1 885 1043 922 1156 3066 history1 6 2 28 history1 0.4 9.2 17.9 history1	20 0 52 1 945 1167 974 1119 2752 history2 5 <1 12 5 <1 12 0.4 9.1 18.7 history2



OIL ANALYSIS REPORT





Vhite Metal Vellow Metal Vecipitate Silt Debris Sand/Dirt Appearance Odor Simulsified Water Vece Water FLUID PROPEI Visc @ 100°C GRAPHS Iron (ppm) Severe	scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D445	NONE NONE NONE NONE NORML NORML >0.2 limit/base 12.00	NONE NONE NONE NONE NORML NORML NORML NEG NEG NEG 10.9	NONE NONE NONE NONE NORML NORML NEG NEG history1 10.8	NONE NONE NONE NONE NONE NORML NORML NEG NEG history2 10.7
Precipitate Silt Debris Sand/Dirt Sand/Dirt Spearance Door Smulsified Water FLUID PROPEI Visc @ 100°C GRAPHS Iron (ppm) Severe	scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual method	NONE NONE NONE NORML NORML >0.2 Iimit/base 12.00	NONE NONE NORML NORML NEG NEG NEG Current 10.9	NONE NONE NONE NORML NORML NEG NEG history1	NONE NONE NONE NORML NORML NEG NEG history2
Silt Debris Sand/Dirt Spearance Door Smulsified Water Stree Water Study of Control Street Str	scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual method	NONE NONE NORML NORML >0.2 limit/base 12.00	NONE NONE NORML NORML NEG NEG Current 10.9	NONE NONE NORML NORML NEG NEG history1	NONE NONE NORML NORML NEG NEG history2
Debris Band/Dirt Uppearance Door Emulsified Water FLUID PROPEI Visc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar scalar scalar RTIES	*Visual *Visual *Visual *Visual *Visual method	NONE NORML NORML >0.2 limit/base 12.00	NONE NORML NORML NEG NEG Current 10.9	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
and/Dirt ppearance Door Emulsified Water FLUID PROPEI Fisc @ 100°C GRAPHS Iron (ppm) Severe Abnormal	scalar scalar scalar scalar scalar RTIES	*Visual *Visual *Visual *Visual *Visual method	NONE NORML >0.2 limit/base 12.00	NONE NORML NORML NEG NEG Current 10.9	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
Appearance Door imulsified Water free Water FLUID PROPEI Visc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar RTIES	*Visual *Visual *Visual *Visual method	NORML NORML >0.2 limit/base 12.00	NORML NORML NEG NEG Current 10.9 Lead (ppm)	NORML NORML NEG NEG history1	NORML NORML NEG NEG history2
odor Emulsified Water FLUID PROPEI Visc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar RTIES	*Visual *Visual *Visual method	NORML >0.2 limit/base 12.00	NORML NEG NEG current 10.9 Lead (ppm)	NORML NEG NEG history1	NORML NEG NEG history2
imulsified Water iree Water FLUID PROPEI isc @ 100°C GRAPHS Iron (ppm) Severe	scalar scalar RTIES	*Visual *Visual method	>0.2 limit/base 12.00	NEG NEG current 10.9 Lead (ppm)	NEG NEG history1	NEG NEG history2
ree Water FLUID PROPEI risc @ 100°C GRAPHS Iron (ppm) Severe	scalar RTIES	*Visual method	limit/base 12.00	NEG current 10.9 Lead (ppm)	NEG history1	NEG history2
FLUID PROPEI fisc @ 100°C GRAPHS Iron (ppm)	RTIES	method	12.00	current 10.9 Lead (ppm)	history1	history2
risc @ 100°C GRAPHS Iron (ppm) Severe			12.00	10.9 Lead (ppm)		
GRAPHS Iron (ppm)	cSt	ASTM D445	100	Lead (ppm)	10.8	10.7
Iron (ppm)			80	Savara		
e ^{Severe}			80	Savara		
e ^{Abnormal}			80	Severe		
			60			
22			40	Abnormal		
22			20			
22			0			
/01	17/23		c1/23	10/22	17/23	
May	Apr		De	May	Apr	
Aluminum (ppm)			50		om)	
Severe				Severe		
Abnormal			E 30	Abnormal		
- 0						
0/22	7/23 -				7/23 -	
May1	Aprl		Dec	May1	Apr1	
Copper (ppm)				Silicon (ppm)		
			80			
			60	-		
			Ē.40			
				Abnormal		****************
			20			
22	23		23	22		
lay10,	Apr17/		Dec1/	lay10,	Apr17/	
	4				4	
			8.0 P			
Abnormal			- Q 6.0 2			
Base			a 4.0	-		
Abnormal				-		
				L		
10/22	17/23		sc1/23	10/22	17/23	
May	Apr		De	May	Apr	
PCA0113380 F 06034052 E 10789281 E MOB 1 (Additional T	Recieved Diagnose Diagnost Tests: TB		MILLER TRUCK LEASING #1 39 INDUSTRIAL A HASBROUCK HEIGHTS, US 076 Contact: MIKE LONGET mlongette@millertransgroup.cd			
	Severe Abnormal Copper (ppm) Severe Botomal Base Abnormal Abnormal Base Abnormal Abnormal Base Abnormal Abnormal Base Abnormal Abnormal Base Abnormal A	Aluminum (ppm)	Aluminum (ppm)	Aluminum (ppm) Aluminum (ppm)	Aluminum (ppm) Aluminum (ppm)	Aluminum (ppm) Aluminum (ppm) Aluminum (ppm) Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Base Number Aluminum (ppm) MILLER TRUCK L South Silicon (ppm) Chromian Ch