

## Area (71236Z) Walgreens - Tractor [Walgreens - Tractor] 136A624088

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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.

GAL)		Apr2024	4 Apr2024	Apr2024 Ju	12024	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0123070	PCA0123039	PCA0123042
Sample Date		Client Info		04 Jul 2024	12 Apr 2024	04 Apr 2024
Machine Age	mls	Client Info		64148	35908	31028
Oil Age	mls	Client Info		28240	35908	31194
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ON	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	>80	24	10	54
Chromium	ppm	ASTM D5185m	>5	2	<1	3
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		4	5	<1
Silver	ppm	ASTM D5185m	>3	1	<1	<1
Aluminum	ppm	ASTM D5185m	>30	36	10	45
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>150	116	80	<b>A</b> 305
Tin	ppm	ASTM D5185m	>5	3	3	<b>1</b> 3
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	10	24	37
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	50	58	50	44
Manganese					50	
Manganese	ppm	ASTM D5185m	0	<1	<1	5
Magnesium	ppm ppm	ASTM D5185m	0 950	<1 888		
-		ASTM D5185m ASTM D5185m		888 1258	<1 811 1226	5 496 1797
Magnesium	ppm	ASTM D5185m	950	888	<1 811	5 496 1797 735
Magnesium Calcium Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180	888 1258	<1 811 1226 977 1132	5 496 1797 735 875
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180	888 1258 919	<1 811 1226 977	5 496 1797 735
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	950 1050 995 1180 2600 limit/base	888 1258 919 1211 2434 current	<1 811 1226 977 1132 3395 history1	5 496 1797 735 875 2273 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	950 1050 995 1180 2600	888 1258 919 1211 2434 current 5	<1 811 1226 977 1132 3395 history1 4	5 496 1797 735 875 2273 history2 8
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >20	888 1258 919 1211 2434 current 5 0	<1 811 1226 977 1132 3395 history1 4 2	5 496 1797 735 875 2273 history2 8 5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	950 1050 995 1180 2600 limit/base >20	888 1258 919 1211 2434 current 5 0 95	<1 811 1226 977 1132 3395 history1 4 2 25	5 496 1797 735 875 2273 history2 8 5 121
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 <b>limit/base</b> >20 <b>limit/base</b>	888 1258 919 1211 2434 current 5 0 95 current	<1 811 1226 977 1132 3395 history1 4 2 25 history1	5 496 1797 735 875 2273 history2 8 5 121 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	950 1050 995 1180 2600 limit/base >20 s20 limit/base >3	888 1258 919 1211 2434 <u>current</u> 5 0 95 <u>current</u> 0.5	<1 <1 811 1226 977 1132 3395 history1 4 2 25 history1 0.1	5 496 1797 735 875 2273 history2 8 5 121 history2 0.5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844	950 1050 995 1180 2600 limit/base >20 limit/base >20 limit/base	888 1258 919 1211 2434 <i>current</i> 5 0 95 <i>current</i> 0.5 7.8	<1 <ul> <li>&lt;1</li> <li>811</li> <li>1226</li> <li>977</li> <li>1132</li> <li>3395</li> <li>history1</li> <li>4</li> <li>2</li> <li>25</li> <li>history1</li> <li>0.1</li> <li>5.5</li> </ul>	5 496 1797 735 875 2273 history2 8 5 121 history2 0.5 9.6
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	950 1050 995 1180 2600 limit/base >20 s20 limit/base >3	888 1258 919 1211 2434 <u>current</u> 5 0 95 <u>current</u> 0.5	<1 <1 811 1226 977 1132 3395 history1 4 2 25 history1 0.1	5 496 1797 735 875 2273 history2 8 5 121 history2 0.5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	950 1050 995 1180 2600 limit/base >20 limit/base >20 limit/base	888 1258 919 1211 2434 current 5 0 95 current 0.5 7.8 19.9	<1 <ul> <li>&lt;1</li> <li>811</li> <li>1226</li> <li>977</li> <li>1132</li> <li>3395</li> <li>history1</li> <li>4</li> <li>2</li> <li>25</li> <li>history1</li> <li>0.1</li> <li>5.5</li> </ul>	5 496 1797 735 875 2273 history2 8 5 121 history2 0.5 9.6
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	950 1050 995 1180 2600 <b>limit/base</b> >20 <b>limit/base</b> >3 >20 >30 <b>limit/base</b>	888 1258 919 1211 2434 current 5 0 95 current 0.5 7.8 19.9	<1 811 1226 977 1132 3395 history1 4 2 25 history1 0.1 5.5 18.1	5 496 1797 735 875 2273 history2 8 5 121 history2 0.5 9.6 22.1

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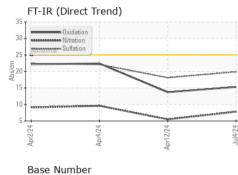
Sample Rating Trend

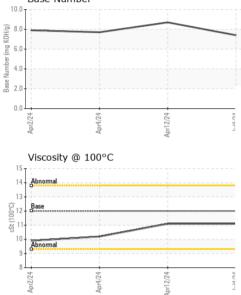


NORMAL

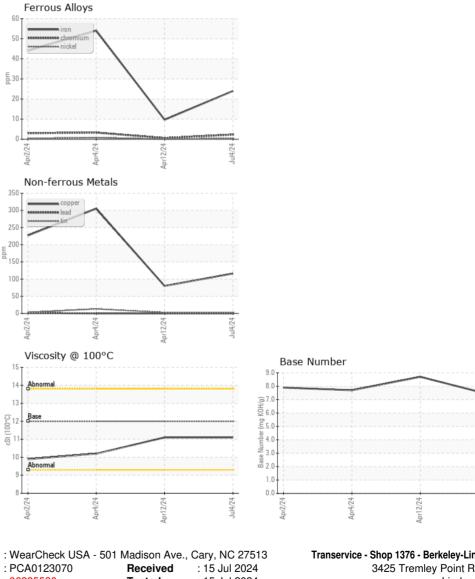


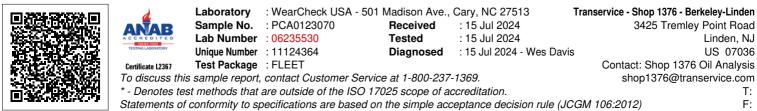
# **OIL ANALYSIS REPORT**





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
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	11.1	10.2
GRAPHS						





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