

## Area (68535Z) Walgreens - Tractor [Walgreens - Tractor] 136A624232

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

### DIAGNOSIS

#### Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

#### Wear

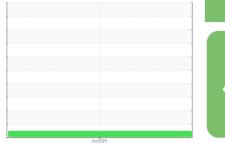
Metal levels are typical for a new component breaking in.

#### 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 acceptable for the time in service.



Sample Rating Trend



NORMAL

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0127132		
Sample Date		Client Info		19 Jun 2024		
Machine Age	mls	Client Info		52970		
Oil Age	mls	Client Info		52970		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	98		
Chromium	ppm	ASTM D5185m	>5	3		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m	_	0		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>30	91		
Lead	ppm	ASTM D5185m	>30	0		
Copper	ppm	ASTM D5185m	>150	209		
Tin	ppm	ASTM D5185m	>5	6		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 24	history1	history2
	ppm ppm					history2 
Boron		ASTM D5185m	2	24		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	24 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	24 0 42		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	24 0 42 3		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	24 0 42 3 529		
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	24 0 42 3 529 1767	  	
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	24 0 42 3 529 1767 730	  	
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 50 950 1050 995 1180	24 0 42 3 529 1767 730 876	   	
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	24 0 42 3 529 1767 730 876 1936		
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	24 0 42 3 529 1767 730 876 1936 current	     history1	     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 <b>method</b> ASTM D5185m	2 0 50 950 1050 995 1180 2600	24 0 42 3 529 1767 730 876 1936 current 8	     history1 	    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 <b>method</b> ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base >20	24 0 42 3 529 1767 730 876 1936 current 8 7	      history1	      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	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >20	24 0 42 3 529 1767 730 876 1936 current 8 7 228	     history1  	     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 ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >20 <b>S</b> 20	24 0 42 3 529 1767 730 876 1936 current 8 7 228 current	     history1   history1	     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 ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >20 20 <b>limit/base</b>	24 0 42 3 529 1767 730 876 1936 current 8 7 228 228 current 1.3	     history1   history1 	    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	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >20 <i>imit/base</i> >3 >20	24 0 42 3 529 1767 730 876 1936 current 8 7 228 current 1.3 12.3	     history1   history1  history1	     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	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >3	24 0 42 3 529 1767 730 876 1936 <b>current</b> 8 7 228 <b>current</b> 1.3 12.3 24.9	      history1  history1  history1	     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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7615	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >20 >20 <b>imit/base</b> >3 >20 >30	24 0 42 3 529 1767 730 876 1936 current 8 7 228 current 1.3 12.3 24.9 current	      history1   history1   history1	     history2  history2  history2  history2



# OIL ANALYSIS REPORT

ppm

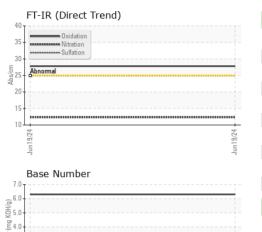
Ē

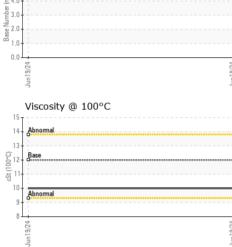
14

13

cSt (100°C)

Viscosity @ 100°C





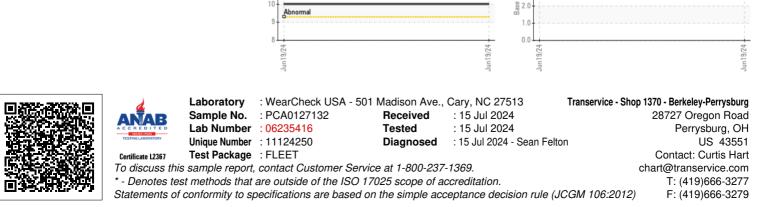
Non-ferrous Metals							
Yellow Metal scalar *Visual NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual NORML NORML Free Water scalar *Visual NORML NORML	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE	White Metal	scalar	*Visual	NONE	NONE		
Silt scalar Visual NONE NONE Debris scalar Visual NONE NONE Sand/Dirt scalar Visual NONE NONE Appearance scalar Visual NORML NORML Gradent scalar Visual >0.2 NEG Free Water scalar Visual >0.2 NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys 	Yellow Metal	scalar	*Visual	NONE	NONE		
Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual NORML NORML FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys	Precipitate	scalar	*Visual	NONE	NONE		
Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys 	Silt	scalar	*Visual	NONE	NONE		
Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NORML NORML Free Water scalar *Visual NORML NORML FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys Non-ferrous Metals	Debris	scalar	*Visual	NONE	NONE		
Odor scalar "Visual NORML NORML Emulsified Water scalar "Visual >0.2 NEG Free Water scalar "Visual NEG Free Water scalar "Visual NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys	Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG FLUID PROPERTIES method imit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys Non-ferrous Metals	Appearance	scalar	*Visual	NORML	NORML		
Free Water scalar *Visual NEG   FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys Ferrous Alloys Non-ferrous Metals Non-ferrous Metals	Odor	scalar	*Visual	NORML	NORML		
FLUID PROPERTIES method limit/base current history1 history2   Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys	Emulsified Water	scalar	*Visual	>0.2	NEG		
Visc @ 100°C cSt ASTM D445 12.00 10.0 GRAPHS Ferrous Alloys	Free Water	scalar	*Visual		NEG		
Ferrous Alloys	FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
Ferrous Alloys	Visc @ 100°C	cSt	ASTM D445	12.00	10.0		
Ferrous Alloys	GRAPHS						
Non-ferrous Metals							
Non-ferrous Metals	<sup>00</sup> T						
Non-ferrous Metals	chromium						
Non-ferrous Metals	nickel						
Non-ferrous Metals	60 -						
Non-ferrous Metals							
Non-ferrous Metals	40 +						
Non-ferrous Metals	20 -						
Non-ferrous Metals							
Non-ferrous Metals	0 +++++++++++++++++++++++++++++++++++++						
Non-ferrous Metals	/61nu			un19/			
Copper copper tin tin		als		Ϋ́,			
0 +	50 T						
	name lead						
10 -	tin tin						
	50						
	DO						
	50 -						

Jun 19/24

7.0

6.0 (B/HO)

 Base Number



Report Id: TSV1370 [WUSCAR] 06235416 (Generated: 07/15/2024 17:01:49) Rev: 1

Submitted By: Curtis Hart