



**WEAR** CONTAMINATION **FLUID CONDITION** 

**NORMAL ABNORMAL ATTENTION** 

[43027406]

## PETERBILT 957-1987 Rental Unit

Diesel Engine							
MOBIL DELVAC MX 15W40 (42 QTS)							
RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next	Sample Number		Client Info		RPL0016418	RPL0013675	
	Sample Date		Client Info		06 Feb 2024	23 Oct 2023	18 Aug 2023
	Machine Age	mls	Client Info		37464	13455	4405
service interval to monitor.	Oil Age	mls	Client Info		37464	13455	4405
	Filter Age	mls	Client Info		37464	13455	4405
	Oil Changed		Client Info		Changed	Not Changd	Not Changd
	Filter Changed		Client Info		Changed	Not Changd	Not Changd
	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
WEAR	Iron	ppm	ASTM D5185m	>90	90	46	39
Metal levels are typical for a new component breaking in.	Chromium	ppm	ASTM D5185m	>20	3	2	1
	Nickel	ppm	ASTM D5185m		0	<1	<1
	Titanium	ppm	ASTM D5185m	>2	0	<1	<1
	Silver	ppm	ASTM D5185m	>2	<1	1	<1
	Aluminum	ppm	ASTM D5185m	>20	40	28	22
	Lead	ppm	ASTM D5185m	>40	5	4	2
	Copper	ppm	ASTM D5185m	>330	30	29	20
	Tin	ppm	ASTM D5185m	>15	3	3	2
	Vanadium	ppm	ASTM D5185m		0	<1	<1
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
CONTAMINATION	Silicon	ppm	ASTM D5185m	> 25	<b>4</b> 1	<u> </u>	<u>45</u>
	Silicon	ppiii	AO HVI DO TOOTII	<i>&gt;</i> _5	<b>7</b> 1		<del>-</del> +J
	Potassium	nnm	ASTM D5185m	>20	130		61
Elemental level of silicon (Si) above normal indicating ingress of seal	Potassium Fuel	ppm	ASTM D5185m WC Method		130 <1.0	91	61 0.4
material. Elevated aluminum (Al) and/or lead (Pb) and potassium (K)	Fuel	ppm	WC Method	>3.0	<1.0	91 <1.0	0.4
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water	ppm	WC Method WC Method	>3.0	<1.0 NEG	91 <1.0 NEG	0.4 NEG
material. Elevated aluminum (Al) and/or lead (Pb) and potassium (K)	Fuel Water Glycol		WC Method WC Method WC Method	>3.0 >0.2	<1.0 NEG NEG	91 <1.0 NEG NEG	0.4 NEG NEG
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot %	%	WC Method WC Method WC Method *ASTM D7844	>3.0 >0.2 >6	<1.0 NEG NEG 0.3	91 <1.0 NEG NEG 0.2	0.4 NEG NEG 0.1
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol	% Abs/cm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624	>3.0 >0.2 >6 >20	<1.0 NEG NEG 0.3 11.0	91 <1.0 NEG NEG	0.4 NEG NEG
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot % Nitration	%	WC Method WC Method WC Method *ASTM D7844	>3.0 >0.2 >6 >20	<1.0 NEG NEG 0.3	91 <1.0 NEG NEG 0.2 9.2	0.4 NEG NEG 0.1 7.2
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot % Nitration Sulfation	% Abs/cm Abs/.1mm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415	>3.0 >0.2 >6 >20 >30	<1.0 NEG NEG 0.3 11.0 23.4	91 <1.0 NEG NEG 0.2 9.2 19.2	0.4 NEG NEG 0.1 7.2 17.8
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot % Nitration Sulfation Silt	% Abs/cm Abs/.1mm scalar	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual	>3.0 >0.2 >6 >20 >30 NONE	<1.0 NEG NEG 0.3 11.0 23.4 NONE	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE	0.4 NEG NEG 0.1 7.2 17.8 NONE
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris	% Abs/cm Abs/.1mm scalar scalar	WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual	>3.0 >0.2 >6 >20 >30 NONE NONE	<1.0 NEG NEG 0.3 11.0 23.4 NONE	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE	0.4 NEG NEG 0.1 7.2 17.8 NONE
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt	% Abs/cm Abs/.1mm scalar scalar scalar	WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual	>3.0 >0.2 >6 >20 >30 NONE NONE NONE	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar	WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NONE	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML
material. Elevated aluminum (AI) 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.	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar scalar	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG
material. Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NORML NEG	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG
material. Elevated aluminum (AI) 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.	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron	% Abs/cm Abs/.nmm scalar scalar scalar scalar scalar scalar ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NORML NEG	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG 7 45	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG 6 106
material. Elevated aluminum (AI) 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.  FLUID CONDITION	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium	% Abs/cm Abs/.mm scalar scalar scalar scalar scalar ppm ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NORML NEG 2 32 12	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG 7 45 3	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG 6 106 0
material. Elevated aluminum (AI) 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.  FLUID CONDITION  The oil viscosity is lower than normal. The BN result indicates that	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum	% Abs/cm Abs/.mm scalar scalar scalar scalar scalar ppm ppm ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NORML NEG 2 32 12 23	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG 7 45 3 11	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG 6 106 0 11
material. Elevated aluminum (AI) 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.  FLUID CONDITION  The oil viscosity is lower than normal. The BN result indicates that	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum Manganese	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NEG 2 32 12 23 6	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG 7 45 3 11 6	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG 6 106 0 11
material. Elevated aluminum (AI) 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.  FLUID CONDITION  The oil viscosity is lower than normal. The BN result indicates that	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NEG 2 32 12 23 6 695	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG 7 45 3 11	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG 6 106 0 11
material. Elevated aluminum (AI) 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.  FLUID CONDITION  The oil viscosity is lower than normal. The BN result indicates that	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NEG 2 32 12 23 6	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NEG 7 45 3 11 6 710 1153	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG 6 106 0 11 6 787 1384
material. Elevated aluminum (AI) 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.  FLUID CONDITION  The oil viscosity is lower than normal. The BN result indicates that	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum Manganese Magnesium	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NEG 2 32 12 23 6 695 1171	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG 7 45 3 11 6 710	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML 0 1106 0 111 6 787
material. Elevated aluminum (AI) 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.  FLUID CONDITION  The oil viscosity is lower than normal. The BN result indicates that	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water  Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>3.0 >0.2 >6 >20 >30 NONE NONE NONE NORML	<1.0 NEG NEG 0.3 11.0 23.4 NONE NONE NONE NORML NEG 2 32 12 23 6 695 1171 658	91 <1.0 NEG NEG 0.2 9.2 19.2 NONE NONE NONE NORML NORML NEG 7 45 3 11 6 710 1153 705	0.4 NEG NEG 0.1 7.2 17.8 NONE NONE NONE NORML NORML NEG 6 106 0 11 6 787 1384 746

7.3

**11.6** 

5.0

**11.8** 

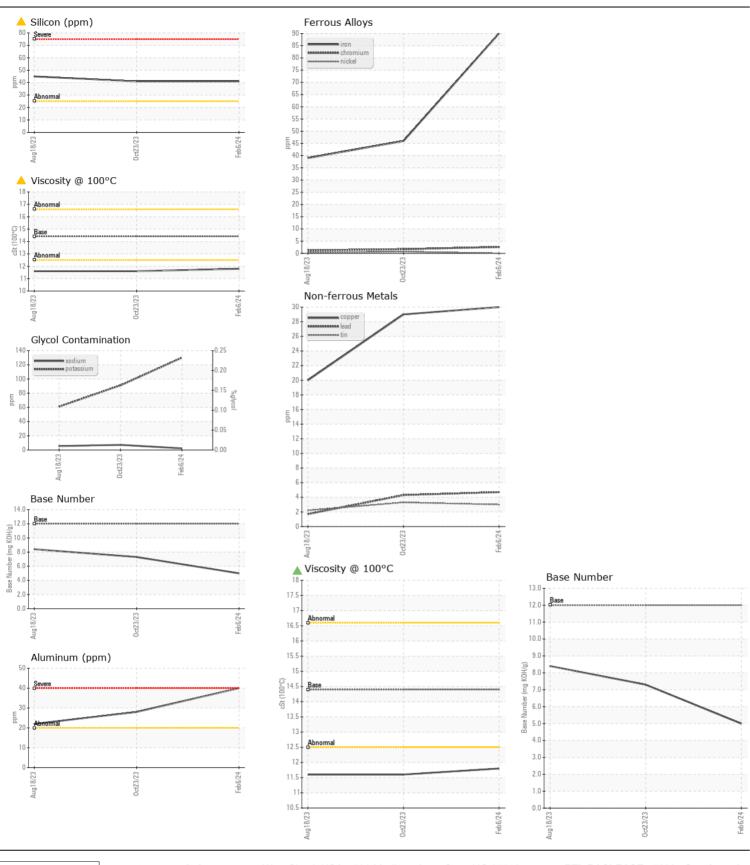
Base Number (BN) mg KOH/g ASTM D2896 12

Visc @ 100°C cSt

ASTM D445 14.4

8.4

**11.6** 





Laboratory Sample No.

: RPL0016418 Lab Number : 06088524 Unique Number: 10875969

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested** 

: 14 Feb 2024 : 15 Feb 2024 : 15 Feb 2024 - Don Baldridge Diagnosed

RTL PACLEASE - 7002 - San Antonio

8810 IH-10 Frontage Road Converse, TX US 78109

Contact: Mike Friel

FrielM@RushEnterprises.Com T: (210)901-7283

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

To discuss this sample report, contact Customer Service at 1-800-237-1369.