

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

PETERBILT 1441

Component Diesel Engine

Fluid GIBRALTAR 15W/40 SUPER S-3 LX (11 GAL)

DIAGNOSIS

A Recommendation

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

A Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). 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.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0900044	WC0900039	WC0864893
Sample Date		Client Info		27 Apr 2024	06 Apr 2024	02 Nov 2023
Machine Age	hrs	Client Info		0	1309	295
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	N/A	Not Changd
Sample Status				ABNORMAL	ABNORMAL	NORMAL
CONTAMINATION	١	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 METALS		method	limit/base	current	historv1	historv2
Iron			. 110		10	14
Chromium	ppm	ASTM DE105m	>110	- 11	10	14
Chromium	ррп	ASTM DE105m	>4	<1	< 1	0
NICKEI	ppm	ACTM DE105m	>2	0	1	0
Cilver	ppm	ACTM DE105m	0	<1	<	0
Silver	ppm	ASTM D5185m	>2	<1	<	0
Aluminum	ppm	ASTM D5185m	>25	2	1	
Lead	ppm	ASTM D5185m	>45	<1	1	<1
Copper	ppm	ASTM D5185m	>85	<u> </u>	A 139	11
lin	ppm	ASTM D5185m	>4	<1	1	0
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		10	13	35
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	66	54	58	67
Manganese	ppm	ASTM D5185m		0	1	<1
Magnesium	ppm	ASTM D5185m	1000	769	748	489
Calcium	ppm	ASTM D5185m	1050	1170	1197	1553
Phosphorus	ppm	ASTM D5185m	1150	1107	1044	964
Zinc	ppm	ASTM D5185m	1270	1169	1138	1140
Sulfur	ppm	ASTM D5185m		3537	3442	3333
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	3	4	3
Sodium	ppm	ASTM D5185m		<1	<1	1
Potassium	ppm	ASTM D5185m	>20	2	2	<1
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	6.6	5.5	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.2	17.8	17.1
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.4	12.7	12.1
Base Number (BN)	mg KOH/a	ASTM D2896	10.1	10.0	9.0	7.1
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Report Id: INTBER [WUSCAR] 06185501 (Generated: 05/23/2024 07:33:09) Rev: 1

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OIL ANALYSIS REPORT









		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 PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	13.3	13.4	12.8
GRAPHS						
Iron (ppm)				Lead (ppm)		
Severe			80	Severe		
Abnormal			61	Abnormal		
00-			E 41) - ¹		1 1
50-				D .		
						_
27/17 27/17 41/18 55/19	y8/19	14/20 v2/23	27/24	27/17 27/17 ±1/18	b5/19 y8/19 17/19	v2/23 in6/24
Jul Do	Ma	Sep No Ar	Apr	Jul 0	Rep Rep Sep	AF
Aluminum (ppm)			10	Chromium (p	opm)	
40				Severe		i i i i
20				5		
JUT Abnormal						
20			mqq	Abnormal		
20			E E	Abnormal		
20 10 0				Abnormal		
	ay8/19 +	p14/20 lov2/23	or27/24	Apnormal LICI7/17	eb5/19 Jay8/19 p17/19 p14/20 +	lov2/23 upr6/24
Abnormal	May8/19 +	Sep14/20	Api27/24	Abnomal	Feb5/19 May6/19 + Sep17/19 +	Nov2/23
Copper (ppm)	May8/19 +	Sep14/20 Nov2/23 Aor6/24	Apr27/24	Abnomal Abnomal LUV2INF Silicon (ppm)	Feb5/19 May6/19 Sep17/19 Sep14/20	Nov2223
Abnormal 20 0 0 0 0 0 0 0 0 0 0 0 0 0	May6/19 +	Sep14/20	udd +72/12/dY 51	Abnomal LUgady Silicon (ppm)	Feb5/19 May0A19 - Sep117/19 - Sep14/20 -	Apr6/24
Abnormal 20 10 0 LIV22mn EV/22mn Copper (ppm) 00 Severe	May8/19	Sep 14/20	Api277.24	Abnomal LU/U2017 Silicon (ppm) Severe Abnomal	Feb5/19 May8/19 + Sep11/19 +	Nov2/23 Apr6/24
Abnormal 20 10 0 10 0 10 0 10 10 10 10	May8/19	Sep14/20	44 44 44 44 44 44 44 44	Abnormal L/L/2016 Silicon (ppm) Severe Abnormal	Feb5/19 May6/19 + Sep11/19 +	Nov2/23 Apr6/24
Abnormal 20 10 0 LUL2017 Copper (ppm) 0 50 Abnormal 50 Abnormal 50	May8/19 +)	Sep14/20 Nov/2/23 Auf6/24	Apr27/24	Abnomal LV/LZmr Silicon (ppm) Severe Abnomal	Feb5/19 May8/13 Sep17/19 Sep14/20	Nov2/23
Copper (ppm)	819	20	Part Part Part Part Part Part Part Part	Abnormal 	13 Feb5/13 Feb5/13 13 14 14 14 14 14 14 14 14 14 14 14 14 14	23
Copper (ppm)	May6/19 8r6/19 8r6/17	Sep 14/20	Apr27724	Abnomal Abnomal 400 41/12017 Silicon (ppm) Severe Abnomal 41/12017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2017 CU2	Feb5/19 - Feb5/19 - May0A19 - May0A1	Nov2/23 Nov2/23 Apr6/24 Apr6/24
Copper (ppm) Copper (ppm) Ulugudy Ulugudy Viscosity @ 100°	C May6/19 Sap 17/19 Sap 17/19 Sap 17/19	Sep14/20	Apr27/24	Abnomal C V V V V V V V V V V V V V V V V V V V	L Feb5/19 + Feb5/19 + May8/19 + May8/19 + May8/19 + May8/19 + May8/19 + May8/19 + Sep117/19 + Sep117/1	Nov2/23
Abnormal 20 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 1	C May8/19 Sep17/19 Sep17/19 Sep17/19	Sep 14/20	(g) (g) (g) (g) (g) (g) (g) (g) (g) (g)	Abnomal Abnomal Abnomal FLV/ZJnn Silicon (ppm) Severe Abnomal LV/ZJnn Base Numbe Base	L Feb5/19 + Feb5/19 + May8/19 + May8/19 + Sep11/19 + Sep11/20 + Se	Nov2/23
Abnormal 20 20 20 20 20 20 20 20 20 20	C May8/19 89/17/19 Sep17/19 Sep17/19	Sep14/20 - Sep14/20 - Nov2/23 - Nov2/23 - Nov2/23 - Nov2/23 - Nov2/24 - Nov2	40 40 40 10 10 10 10 10 10 10 10 10 1	Abnormal LUgudy Silicon (ppm) Severe LU/ZINF Base Numbe	L Feb5/19 Feb5/19 May6/19 Sep11/19 Sep11/10 Sep1	Nov2/23
Abnormal 20 4 20 4 20 4 20 4 4 4 4 4 4 4 4 4 4 4 4 4	May8/19 8ep17/19 8ep17/19 8ep17/19	Sep14/20 Nov2/23 Aur6/24 Aur6/24	44 44 10 10 10 10 10 10 10 10 10 10	Abnomal LUgdy Silicon (ppm) Severe Abnomal LUgdy Base Numbe	Feb5/19 May8/19 Sep117/19 Sep14/20 Sep14/20	Nov2233 - Nov2223 - Nov2223 - Apr624 - Apr626 -
Abnormal Copper (ppm) Copper (ppm) Copper (ppm) Viscosity @ 100° Abnormal Severe Abnormal Copper (ppm)	C	Sep14/20 Sep14/20 Sep14/20 Nov2/23 Nov2/23 Aur6/24 Aur6/24 Aur6/24	Apri21/24	Abnomal LUgudy Silicon (ppm) Severe Abnomal LUgudy Base Numbe	Feb5/19 May0/19 Sep11/19 Sep14/20 Sep14/20	Apr6/24
Abnormal 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Amay6/19 - May6/19 - Sep17/19 - Sep17/19 -	Sep14/20 Sep14/20 Sep14/20 Nov223 Ann6/24 Ann6	Participation (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,00) (10,00,0	Abnomal LUIZINF Silicon (ppm) Severe Abnomal LUIZINF Base Numbe Base	Feb5/19 - Feb5/19 - May0/19 - May0/19 - Sep12/19 - Sep1	Nov2/23
Abnormal 20 4 4 4 4 4 4 4 4 4 4 4 4 4	C May6/19 Sep17/19	20 Sep14/20 Sep14/20 Sep14/20 Sep14/20	24 10 11 12 11 12 12 11 12 12 12 12	Abnomal LUUZINF Silicon (ppm) Severe Annomal LUUZINF Base Numbe Base Numbe	113	23 Nov2/23 Nov2/23 Apr6/24 Apr6/24

INTERSTATE WASTE-BERNARDSVILLE 33 OLD QUARRY ROAD BERNARDSVILLE, NJ

US 07924

T:

F:

Contact: Thomas Deluca

tdeluca@interstatewaste.com

: 23 May 2024 : 23 May 2024 - Jonathan Hester

: 20 May 2024

- Unique Number : 11036827 Diagnosed Test Package : MOB 1 (Additional Tests: TBN)
- To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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)

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

Received

Tested

Report Id: INTBER [WUSCAR] 06185501 (Generated: 05/23/2024 07:33:09) Rev: 1

Laboratory

Sample No. : WC0900044

Lab Number : 06185501

Contact/Location: Thomas Deluca - INTBER Page 2 of 2









Certificate 12367