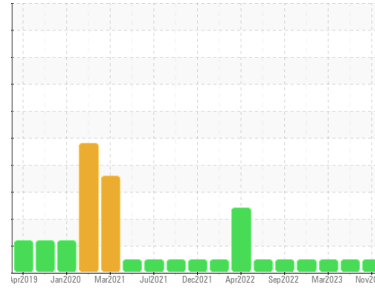




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
PETERBILT TK9745

Component
Diesel Engine

Fluid
SHELL ROTELLA T 15W40 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

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 INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0857792	WC0793354	WC0779705
Sample Date	Client Info		15 Nov 2023	02 Aug 2023	07 Mar 2023
Machine Age	hrs	Client Info	10445	9937	9203
Oil Age	hrs	Client Info	2039	1531	2089
Oil Changed	Client Info		Not Chngd	Changed	Changed
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	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	history1	history2
Iron	ppm	ASTM D5185m >110	7	6	19
Chromium	ppm	ASTM D5185m >4	0	<1	<1
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >25	<1	0	2
Lead	ppm	ASTM D5185m >45	1	<1	4
Copper	ppm	ASTM D5185m >85	1	<1	3
Tin	ppm	ASTM D5185m >4	0	<1	<1
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 316	4	4	23
Barium	ppm	ASTM D5185m 0.0	0	0	0
Molybdenum	ppm	ASTM D5185m 1.2	57	58	20
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m 24	949	950	263
Calcium	ppm	ASTM D5185m 2292	1206	1246	2027
Phosphorus	ppm	ASTM D5185m 1064	1035	1074	930
Zinc	ppm	ASTM D5185m 1160	1318	1329	1132
Sulfur	ppm	ASTM D5185m 4996	3233	4244	4004

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >30	5	4	7
Sodium	ppm	ASTM D5185m	3	2	3
Potassium	ppm	ASTM D5185m >20	0	<1	4

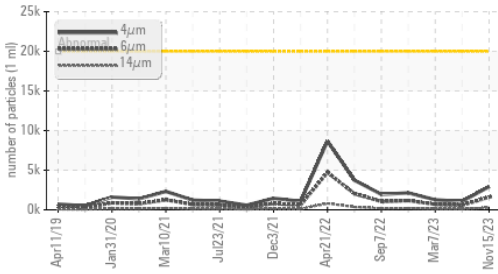
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.1	0.1	0.2
Nitration	Abs/cm	*ASTM D7624 >20	9.9	8.0	10.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	21.6	19.7	25.9

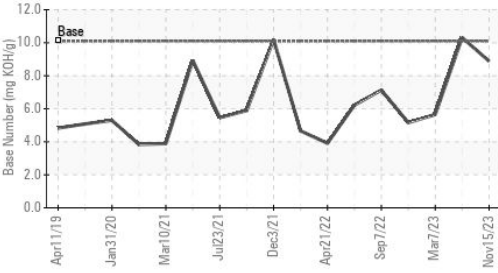


OIL ANALYSIS REPORT

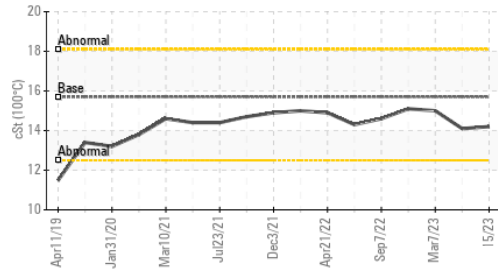
Particle Trend



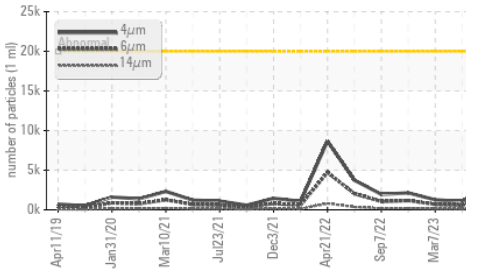
Base Number



Viscosity @ 100°C



Particle Trend



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	2923	1061	1262
Particles >6µm	ASTM D7647	>5000	1592	578	687
Particles >14µm	ASTM D7647	>640	271	98	117
Particles >21µm	ASTM D7647	>160	91	33	39
Particles >38µm	ASTM D7647	>40	14	5	6
Particles >71µm	ASTM D7647	>10	1	1	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	19/18/15	17/16/14	17/17/14

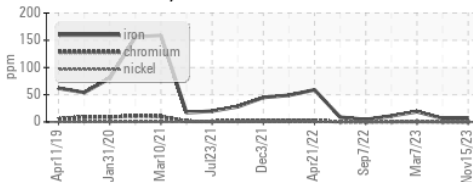
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	16.0	22.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	8.88	10.31	5.65

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	LIGHT	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

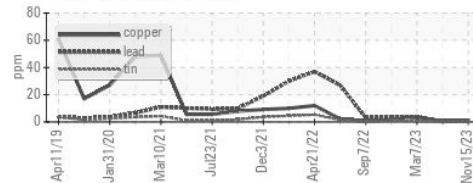
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.7	14.2	14.1	15.0

GRAPHS

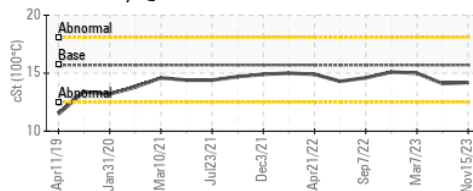
Ferrous Alloys



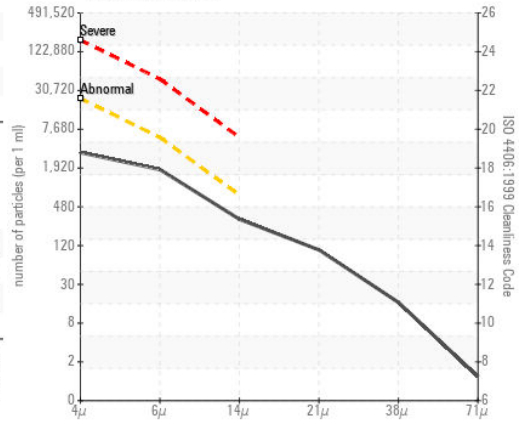
Non-ferrous Metals



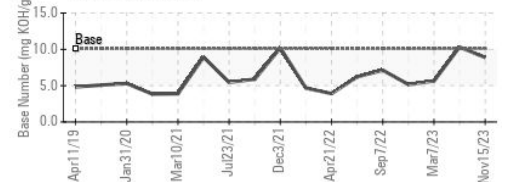
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0857792 **Received** : 07 Dec 2023
Lab Number : **06028802** **Diagnosed** : 13 Dec 2023
Unique Number : 10778593 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: PrtCount)

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 269 US HWY 183 SOUTH
 CUERO, TX
 US 77954
 Contact: BILL FOJTIK
 info@mcmahanservices.com
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 F: (361)275-0110

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)