

OIL ANALYSIS REPORT

Area KANSAS/44/EG - TRUCK-ON-HWY-HEAVY DUTY Machine Id 07.44 [KANSAS^44^EG - TRUCK-ON-HWY-HEAVY DUTY] Component Fed2016 Fed2018 Apr2019 Me2021 Fed2022 Nov2022

Sample Rating Trend



Resample at the next service interval to monitor.

There is no indication of any contamination in the

Metal levels are typical for a new component

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the

oil is suitable for further service.

DIAGNOSIS Recommendation

Wear

oil.

breaking in. Contamination

Fluid Condition

Diesel Engine Fluid MOBIL DELVAC 1300 SUPER15W40 (--- GAL)

Sample Number Client Info WC0833761 WC0584806 WC054405 Sample Date I Client Info 30 Nov 2023 03 Feb 2022 18 Mar 2021 Machine Age hrs Client Info 325 5290 564 Oil Age Client Info 325 54726 0 Oil Changed Client Info 325 4726 0 Sample Status Immethod Immit/base current history1 history2 Fuel WC Method >0.2 NEG NEG NEG Water WC Method >0.2 NEG NEG NEG Nickel ppm ASTM 05185m >80 25 14 35 Machinum ppm ASTM 05185m >30 0 <1 <1 Nickel ppm ASTM 05185m >30 0 <1 <1 Nickel ppm ASTM 05185m >30 0 <1 <1 Auminum ppm ASTM 05185m <th>·</th> <th></th> <th>Feb2016</th> <th>Feb2018 Apr2019</th> <th>Mar2021 Feb2022</th> <th>Nov2023</th> <th></th>	·		Feb2016	Feb2018 Apr2019	Mar2021 Feb2022	Nov2023	
Sample Date Client Info 30 Nov 2023 03 Feb 2022 18 Mar 2021 Machine Age hrs Client Info 5615 5290 564 Oil Age hrs Client Info 325 4726 0 Oil Changed Client Info Not Changed Changed Changed NoRMAL NORMAL NORMAL CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >5 <1.0	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 5615 5290 564 Oil Age hrs Client Info 325 4726 0 Oil Ghanged Client Info 325 4726 0 Sample Status Imit/base current NoRMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method >5 <1.0	Sample Number		Client Info		WC0833761	WC0584806	WC0543405
Oil Age hrs Client Info 325 4726 0 Oil Changed Client Info Not Changed VEAR VeX Method Sol<	Sample Date		Client Info		30 Nov 2023	03 Feb 2022	18 Mar 2021
Oli Changed Sample Status Client Info Not Changed NORMAL Changed NORMAL Changed NORMAL NoRMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5. <1.0	Machine Age	hrs	Client Info		5615	5290	564
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Age	hrs	Client Info		325	4726	0
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Not Changd	Changed	Changed
Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185n >5 <1	•				NORMAL		
Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185n >5 <1	CONTAMINATIO	N	method	limit/base	current	historv1	history2
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method linit/base current history1 history2 Iron ppm ASTM D5185m >5 <1		•					
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 25 14 35 Chromium ppm ASTM D5185m >5 <1							
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 25 14 35 Chromium ppm ASTM D5185m >5 <1				>0.2			
Iron ppm ASTM D5185m >80 25 14 35 Chromium ppm ASTM D5185m >5 <1	•		WC Wethod		NEG	NEG	NEG
Chromium ppm ASTM D5185m 55 c.1 1 2 Nickel ppm ASTM D5185m >2 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >2 0 <1 <1 Titanium ppm ASTM D5185m 0 <1	Iron	ppm	ASTM D5185m	>80	25	14	35
Titanium ppm ASTM D5185m 0 <1 <1 Silver ppm ASTM D5185m >3 0 <1	Chromium	ppm	ASTM D5185m	>5	<1	1	2
Silver ppm ASTM D5185m >3 0 <1 <1 Aluminum ppm ASTM D5185m >30 2 3 6 Lead ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >150 <1 <1 1 Tin ppm ASTM D5185m >5 0 <1 <1 1 Antimony ppm ASTM D5185m >5 0 <1 <1 0 Vanadium ppm ASTM D5185m 0 2 0 0 0 Cadmium ppm ASTM D5185m 0 41 70 43 Barium ppm ASTM D5185m 0 42 30 42 Molybdenum ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m	Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum ppm ASTM D5185m >30 2 3 6 Lead ppm ASTM D5185m >30 0 <1	Titanium	ppm	ASTM D5185m		0	<1	<1
Lead ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >150 <1	Silver	ppm	ASTM D5185m	>3	0	<1	<1
Lead ppm ASTM D5185m >30 0 <1 <1 Copper ppm ASTM D5185m >150 <1	Aluminum	ppm	ASTM D5185m	>30	2	3	6
Copper ppm ASTM D5185m >150 <1 <1 1 Tin ppm ASTM D5185m >5 0 <1	Lead			>30	0	<1	<1
Tin ppm ASTM D5185m >5 0 <1 <1 Antimony ppm ASTM D5185m <1	Copper		ASTM D5185m	>150	<1	<1	1
Antimony ppm ASTM D5185m <1 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 41 70 43 Barium ppm ASTM D5185m 0 42 0 0 Molybdenum ppm ASTM D5185m 0 42 30 42 Magnesium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 1585 1708 1640 Phosphorus ppm ASTM D5185m 2792 2586 2140 CONTAMINANTS method limit/base current history1 history2 Silicon	••				0		<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 41 70 43 Barium ppm ASTM D5185m 0 2 0 0 Magnese ppm ASTM D5185m 0 42 30 42 Magnesium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 2792 2586 2140 CONTAMINANTS method limit/base current history1 history2	Antimony		ASTM D5185m		-	<1	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 41 70 43 Barium ppm ASTM D5185m 0 2 0 0 Molybdenum ppm ASTM D5185m 0 42 30 42 Magnesium ppm ASTM D5185m 0 42 637 506 Calcium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 747 822 769 2 Zinc ppm ASTM D5185m 2792 2586 2140 2 Solium ppm ASTM D5185m 20 7 6	-				0		
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Molybdenum ppm ASTM D5185m 0 42 30 42 Manganese ppm ASTM D5185m 0 <1							
Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 0 542 637 506 Calcium ppm ASTM D5185m 0 542 637 506 Phosphorus ppm ASTM D5185m 1585 1708 1640 Phosphorus ppm ASTM D5185m 747 822 769 Zinc ppm ASTM D5185m 945 963 926 Sulfur ppm ASTM D5185m 2792 2586 2140 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >20 7 6 9 Sodium ppm ASTM D5185m >20 2 3 4 INFRA-RED method limit/base current history1 history2 Soot %					=	÷	÷
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Calcium ppm ASTM D5185m 1585 1708 1640 Phosphorus ppm ASTM D5185m 747 822 769 Zinc ppm ASTM D5185m 945 963 926 Sulfur ppm ASTM D5185m 2792 2586 2140 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 7 6 9 Sodium ppm ASTM D5185m >20 7 6 9 Sodium ppm ASTM D5185m >20 7 6 9 Sodium ppm ASTM D5185m >20 2 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.4 Nitration Abs/.mm<*ASTM D7415	•			0	-		
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Sulfur ppm ASTM D5185m 2792 2586 2140 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 7 6 9 Sodium ppm ASTM D5185m >20 7 6 9 Sodium ppm ASTM D5185m >20 2 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 8.9 8.2 10.5 Sulfation Abs/.tmm *ASTM D7415 >30 22.1 23.0 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.tmm *ASTM D7414 >25 21.7 20.6 24.7							
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Sodium ppm ASTM D5185m <1 3 2 Potassium ppm ASTM D5185m >20 2 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 8.9 8.2 10.5 Sulfation Abs/.imm *ASTM D7415 >30 22.1 23.0 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.imm *ASTM D7414 >25 21.7 20.6 24.7	CONTAMINANTS		method	limit/base	current	,	
Potassium ppm ASTM D5185m >20 2 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 8.9 8.2 10.5 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 23.0 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.7 20.6 24.7		ppm		>20			
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Soot % % *ASTM D7844 >3 0.3 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 8.9 8.2 10.5 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 23.0 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.7 20.6 24.7	Potassium	ppm	ASTM D5185m	>20	2	3	4
Nitration Abs/cm *ASTM D7624 >20 8.9 8.2 10.5 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 23.0 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.7 20.6 24.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.1 23.0 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.7 20.6 24.7	Soot %	%	*ASTM D7844	>3	0.3	0.2	0.4
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.7 20.6 24.7	Nitration	Abs/cm	*ASTM D7624	>20	8.9	8.2	10.5
Oxidation Abs/.1mm *ASTM D7414 >25 21.7 20.6 24.7	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.1		24.7
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Oxidation						
		Abs/.1mm	*ASIM D/414	>25	21.7	20.6	24.7

Submitted By: WENDY DUNSON



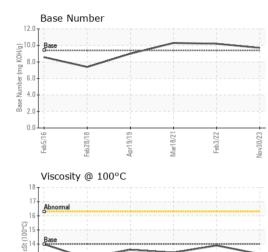
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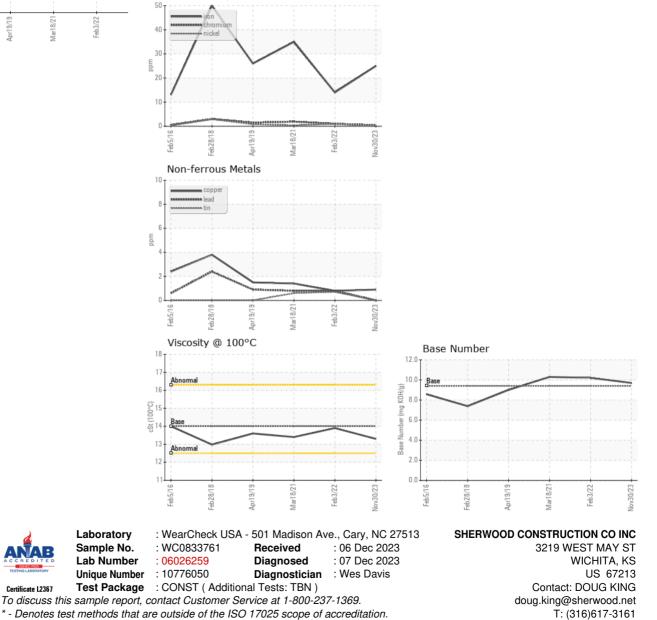
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OIL ANALYSIS REPORT



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 PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	13.3	13.9	13.4
GRAPHS						
Ferrous Alloys						



* - 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)

Submitted By: WENDY DUNSON

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