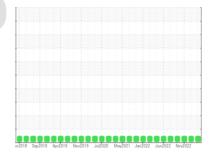


OIL ANALYSIS REPORT

OKLAHOMA/105/EG - TRUCK-ON-HWY-HEAVY DUTY 08.115 [OKLAHOMA^105^EG - TRUCK-ON-HWY-HEAVY DUTY]

Diesel Engine

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)



Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

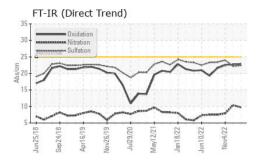
Fluid Condition

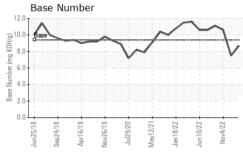
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

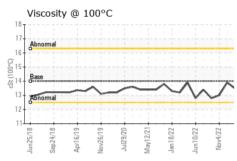
Sample Date Cilient Info 10 Apr 2024 17 Oct 2023 04 Nov 20	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2			
Machine Age hrs Client Info 1865 7636 7636 Oil Age hrs Client Info 700 500 288 Oil Changed Changed <t< td=""><td>Sample Number</td><td></td><td>Client Info</td><td></td><th>WC0914585</th><td>WC0857298</td><td>WC0746367</td></t<>	Sample Number		Client Info		WC0914585	WC0857298	WC0746367			
Oil Age hrs Client Info 700 500 288 Oil Changed Client Info Changed Change Changea Changea Changea Changea </td <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <th>10 Apr 2024</th> <td>17 Oct 2023</td> <td>04 Nov 2022</td>	Sample Date		Client Info		10 Apr 2024	17 Oct 2023	04 Nov 2022			
Oil Changed Sample Status Client Info Changed NORMAL NORMAL <th< td=""><td>Machine Age</td><td>hrs</td><td>Client Info</td><td></td><th>1865</th><td>7636</td><td>7636</td></th<>	Machine Age	hrs	Client Info		1865	7636	7636			
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL NORMAL <th< td=""><td>Oil Age</td><td>hrs</td><td>Client Info</td><td></td><th>700</th><td>500</td><td>288</td></th<>	Oil Age	hrs	Client Info		700	500	288			
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 history1 water wc Method o.2. NEG Ne			Client Info		Changed	Changed	Changed			
Fuel							NORMAL			
Water Glycol WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >90 7 12 3 Chromium ppm ASTM D5185m >20 <1	CONTAMINATION	1	method	limit/base	current	history1	history2			
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0			
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >90 7 12 3 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG			
Iron	Glycol		WC Method		NEG	NEG	NEG			
Chromium ppm ASTM D5185m >20 <1 <1 0 Nickel ppm ASTM D5185m >2 <1 0 0 Titanium ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >20 3 2 <1 Aluminum ppm ASTM D5185m >20 3 2 <1 Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 <1 <1 0 Vanadium ppm ASTM D5185m >15 <1 <1 0 Cadmium ppm ASTM D5185m <1 <1 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 29 26 <td>WEAR METALS</td> <td></td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	WEAR METALS		method	limit/base	current	history1	history2			
Nickel	Iron	ppm	ASTM D5185m	>90	7	12	3			
Titanium ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >20 3 2 <1 Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 <1 1 0 Vanadium ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 29 26 43 Barium ppm ASTM D5185m 0 44 46 41 Mangaesium ppm ASTM D5185m <1 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	0			
Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >20 3 2 <1 Lead ppm ASTM D5185m >20 3 2 <1 Copper ppm ASTM D5185m >330 <1 1 0 Vanadium ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 29 26 43 Barium ppm ASTM D5185m 0 44 46 41 Manganesium ppm ASTM D5185m <1 0 <1 <1 Calcium ppm ASTM D5185m 1699 1729 159	Nickel	ppm	ASTM D5185m	>2	<1	0	0			
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	0	0			
Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 <1 1 0 Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 29 26 43 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 44 46 41 Manganese ppm ASTM D5185m <1 0 <1 0 <1 Magnesium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 7777 852 703 </td <td>Silver</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>2</td> <th><1</th> <td>0</td> <td>0</td>	Silver	ppm	ASTM D5185m	>2	<1	0	0			
Lead	Aluminum	ppm	ASTM D5185m	>20	3	2	<1			
Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 29 26 43 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 44 46 41 Manganese ppm ASTM D5185m <1 0 <1 0 <1 Magnesium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 1699 1729 1591 Phosphorus ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 INFRA-RED method limit/base current history1 history1 Nistory1 history1	Lead		ASTM D5185m	>40	<1	<1	0			
Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 29 26 43 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 44 46 41 Manganese ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS metho	Copper		ASTM D5185m	>330	<1	1	0			
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 29 26 43 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 44 46 41 Mangaese ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 7777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon			ASTM D5185m	>15	<1	<1	0			
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 29 26 43 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 44 46 41 Manganese ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 1699 1729 1591 Phosphorus ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon	Vanadium	ppm	ASTM D5185m			0	0			
Boron	Cadmium		ASTM D5185m		<1		0			
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 44 46 41 Manganese ppm ASTM D5185m - 1 0 - Magnesium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 1699 1729 1591 Phosphorus ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 <td< td=""><td>ADDITIVES</td><td></td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></td<>	ADDITIVES		method	limit/base	current	history1	history2			
Molybdenum ppm ASTM D5185m 0 44 46 41 Manganese ppm ASTM D5185m <1 0 <1 Magnesium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 1699 1729 1591 Phosphorus ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m 20 3 3 0 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot %	Boron	ppm	ASTM D5185m	0	29	26	43			
Manganese ppm ASTM D5185m <1 0 <1 Magnesium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 1699 1729 1591 Phosphorus ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m >20 3 3 0 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7624 >20 9.7 10.4 7.9 Sulfation </td <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>0</th> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m	0	0	0	0			
Magnesium ppm ASTM D5185m 0 490 535 494 Calcium ppm ASTM D5185m 1699 1729 1591 Phosphorus ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24	Molybdenum	ppm	ASTM D5185m	0	44	46	41			
Calcium ppm ASTM D5185m 1699 1729 1591 Phosphorus ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m >20 3 3 0 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th><1</th> <td>0</td> <td><1</td>	Manganese	ppm	ASTM D5185m		<1	0	<1			
Phosphorus ppm ASTM D5185m 777 852 703 Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m >20 3 3 0 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current	Magnesium	ppm	ASTM D5185m	0	490	535	494			
Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m >20 3 3 0 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 <td< td=""><td>Calcium</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>1699</th><td>1729</td><td>1591</td></td<>	Calcium	ppm	ASTM D5185m		1699	1729	1591			
Zinc ppm ASTM D5185m 913 995 864 Sulfur ppm ASTM D5185m 2684 3276 2620 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m 13 0 2 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25	Phosphorus	ppm	ASTM D5185m		777	852	703			
CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m 13 0 2 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5		ppm	ASTM D5185m		913	995	864			
Silicon ppm ASTM D5185m >25 5 4 3 Sodium ppm ASTM D5185m 13 0 2 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	Sulfur	ppm	ASTM D5185m		2684	3276	2620			
Sodium ppm ASTM D5185m 13 0 2 Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	CONTAMINANTS		method	limit/base	current	history1	history2			
Potassium ppm ASTM D5185m >20 3 3 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	Silicon	ppm	ASTM D5185m	>25	5	4	3			
INFRA-RED	Sodium	ppm	ASTM D5185m		13	0	2			
Soot % % *ASTM D7844 >6 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	Potassium	ppm	ASTM D5185m	>20	3	3	0			
Nitration Abs/cm *ASTM D7624 >20 9.7 10.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	INFRA-RED		method	limit/base	current	history1	history2			
Sulfation Abs/.1mm *ASTM D7415 >30 22.4 22.2 24 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	Soot %	%	*ASTM D7844	>6	0.3	0.4	0.2			
FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	Nitration	Abs/cm	*ASTM D7624	>20	9.7	10.4	7.9			
Oxidation Abs/.1mm *ASTM D7414 >25 22.9 22.7 22.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.4	22.2	24			
	FLUID DEGRADATION method limit/base current history1 history2									
	Oxidation	Abs/.1mm	*ASTM D7414	>25	22.9	22.7	22.5			
	Base Number (BN)	mg KOH/g		9.4	8.7					

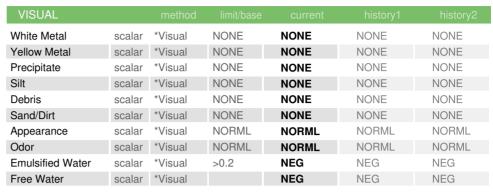


OIL ANALYSIS REPORT



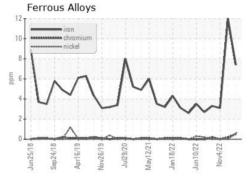


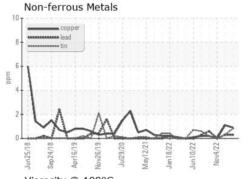


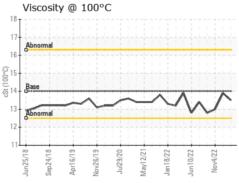


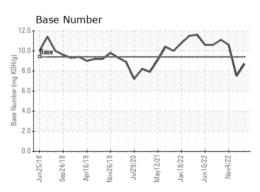
FLUID PROPER	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14	13.5	13.9	13.0

GRAPHS













Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Lab Number : 06156668 Unique Number : 10992091

: WC0914585

Received **Tested** Diagnosed

: 22 Apr 2024 : 23 Apr 2024

: 23 Apr 2024 - Wes Davis

SHERWOOD CONSTRUCTION CO INC 3219 WEST MAY ST WICHITA, KS US 67213

Contact: DOUG KING doug.king@sherwood.net T: (316)617-3161

Submitted By: SHAWN SOUTH

Test Package : CONST (Additional Tests: TBN) To discuss this sample report, contact Customer Service at 1-800-237-1369. st - 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)

F: x: