

OIL ANALYSIS REPORT

OKLAHOMA/102 05.73 [OKLAHOMA^102]

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

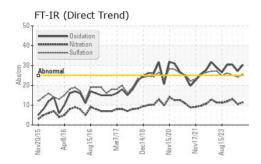
Fluid Condition

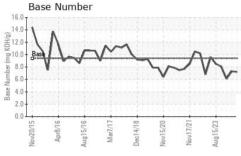
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

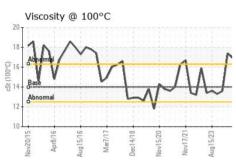
Sample Date	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 23227 22757 22542 Oil Age hrs Client Info 288 301 289 Oil Changed Chient Info Changed Changed Changed Changed Sample Status NORMAL ATTENTION NORMAL ATTENTION NORMAL Fuel WC Method >5 <1.0	Sample Number		Client Info		WC0848871	WC0886935	WC0857369
Oil Age hrs Client Info 298 301 289 Oil Changed Client Info Changed Changed<	Sample Date		Client Info		04 Apr 2024	06 Feb 2024	03 Jan 2024
Oil Changed Sample Status Client Info Changed NORMAL Changed ATTENTION Changed NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Machine Age	hrs	Client Info		23227	22757	22542
NORMAL ATTENTION NORMAL	Oil Age	hrs	Client Info		298	301	289
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	ATTENTION	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Image NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 29 21 28 Chromium ppm ASTM D5185m >4 <1	CONTAMINATION	J	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 1 2 2 Lead ppm ASTM D5185m >45 5 2 2 2 Copper ppm ASTM D5185m >4 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	29	21	28
Description	Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	Nickel	ppm	ASTM D5185m	>2	0	0	0
Silver	Titanium		ASTM D5185m		0	0	<1
Aluminum	Silver		ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >85 1 1 2 Tin ppm ASTM D5185m >4 0 <1	Aluminum	ppm	ASTM D5185m	>25	1	2	2
Copper ppm ASTM D5185m >85 1 1 2 Tin ppm ASTM D5185m >4 0 <1	Lead	ppm	ASTM D5185m	>45	5	2	2
Tin	Copper		ASTM D5185m	>85	1	1	2
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 54 47 57 Barium ppm ASTM D5185m 0 0 0 <1 Molybdenum ppm ASTM D5185m 0 44 45 96 Manganese ppm ASTM D5185m 0 <1 0 <1 0 Magnesium ppm ASTM D5185m 0 533 462 607 Calcium ppm ASTM D5185m 1825 1391 1514 Phosphorus ppm ASTM D5185m 747 615 798 Zinc ppm ASTM D5185m 933 770 918 Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS				>4	0	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 54 47 57 Barium ppm ASTM D5185m 0 0 0 <1	Vanadium		ASTM D5185m		0	0	0
Boron	Cadmium		ASTM D5185m			0	0
Barium ppm ASTM D5185m 0 0 0 <1 Molybdenum ppm ASTM D5185m 0 44 45 96 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 44 45 96 Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 0 533 462 607 Calcium ppm ASTM D5185m 1825 1391 1514 Phosphorus ppm ASTM D5185m 747 615 798 Zinc ppm ASTM D5185m 933 770 918 Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>54</th> <td>47</td> <td>57</td>	Boron	ppm	ASTM D5185m	0	54	47	57
Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 0 533 462 607 Calcium ppm ASTM D5185m 1825 1391 1514 Phosphorus ppm ASTM D5185m 747 615 798 Zinc ppm ASTM D5185m 933 770 918 Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Su	Barium	ppm	ASTM D5185m	0	0	0	<1
Magnesium ppm ASTM D5185m 0 533 462 607 Calcium ppm ASTM D5185m 1825 1391 1514 Phosphorus ppm ASTM D5185m 747 615 798 Zinc ppm ASTM D5185m 933 770 918 Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2	Molybdenum	ppm	ASTM D5185m	0	44	45	96
Calcium ppm ASTM D5185m 1825 1391 1514 Phosphorus ppm ASTM D5185m 747 615 798 Zinc ppm ASTM D5185m 933 770 918 Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1	Manganese	ppm	ASTM D5185m		0	<1	0
Phosphorus ppm ASTM D5185m 747 615 798 Zinc ppm ASTM D5185m 933 770 918 Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m 20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4	Magnesium	ppm	ASTM D5185m	0	533	462	607
Zinc ppm ASTM D5185m 933 770 918 Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m 20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Calcium	ppm	ASTM D5185m		1825	1391	1514
Sulfur ppm ASTM D5185m 2955 2160 2995 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m 4 4 0 Potassium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Phosphorus	ppm	ASTM D5185m		747	615	798
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m 4 4 0 Potassium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Zinc	ppm	ASTM D5185m		933	770	918
Silicon ppm ASTM D5185m >30 4 4 4 Sodium ppm ASTM D5185m 4 4 0 Potassium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Sulfur	ppm	ASTM D5185m		2955	2160	2995
Sodium ppm ASTM D5185m 4 4 0 Potassium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Silicon	ppm	ASTM D5185m	>30	4	4	4
INFRA-RED	Sodium	ppm	ASTM D5185m		4	4	0
Soot % % *ASTM D7844 >3 0.2 0.2 0.3 Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Potassium	ppm	ASTM D5185m	>20	0	1	2
Nitration Abs/cm *ASTM D7624 >20 11.4 10.5 13.1 Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Soot %	%	*ASTM D7844	>3	0.2	0.2	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 25.5 24.2 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Nitration	Abs/cm	*ASTM D7624	>20	11.4	10.5	13.1
Oxidation Abs/.1mm *ASTM D7414 >25 30.4 27.2 30.4	Sulfation						
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	30.4	27.2	30.4
- COUNTY 1. COUN	Base Number (BN)	mg KOH/g	ASTM D2896		7.2	7.3	6.1



OIL ANALYSIS REPORT



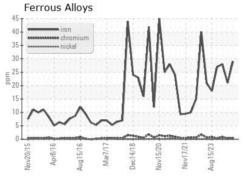


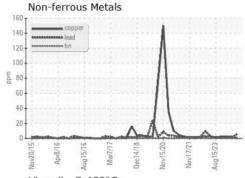


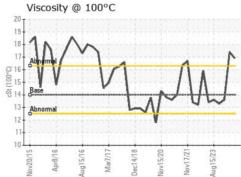
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

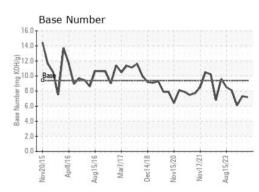
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	14	16.9	17.4	13.6

GRAPHS













Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0848871 Lab Number : 06160081 Unique Number : 10995504

Received **Tested** Diagnosed

: 25 Apr 2024 : 25 Apr 2024

: 26 Apr 2024 - Don Baldridge

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

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

Test Package : CONST (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)

F: x: