

# **PROBLEM SUMMARY**

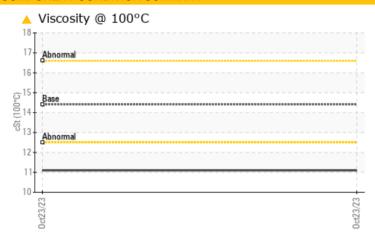
# OKLAHOMA/102/EG - MOTOR GRADER Machine Id 78.264 [OKLAHOMA^102^EG - MOTOR GRADER]

Diesel Engine

**DIESEL ENGINE OIL SAE 15W40 (--- GAL)** 

# Sample Rating Trend VISCOSITY Octor

# COMPONENT CONDITION SUMMARY



# RECOMMENDATION

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

PROBLEMATIC TEST RESULTS									
Sample Status				ATTENTION					
Visc @ 100°C	cSt	ASTM D445	14.4	<u>▲</u> 11.1					

Customer Id: SHEWIC
Sample No.: WC0862653
Lab Number: 05994198
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

# RECOMMENDED ACTIONS

There are no recommended actions for this sample.

# HISTORICAL DIAGNOSIS

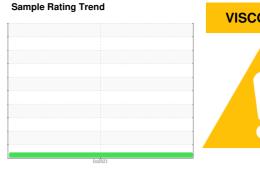


# **OIL ANALYSIS REPORT**

# OKLAHOMA/102/EG - MOTOR GRADER 78.264 [OKLAHOMA^102^EG - MOTOR GRADER]

**Diesel Engine** 

**DIESEL ENGINE OIL SAE 15W40 (--- GAL)** 





# **DIAGNOSIS**

# Recommendation

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

Metal levels are typical for a new component breaking in.

# Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

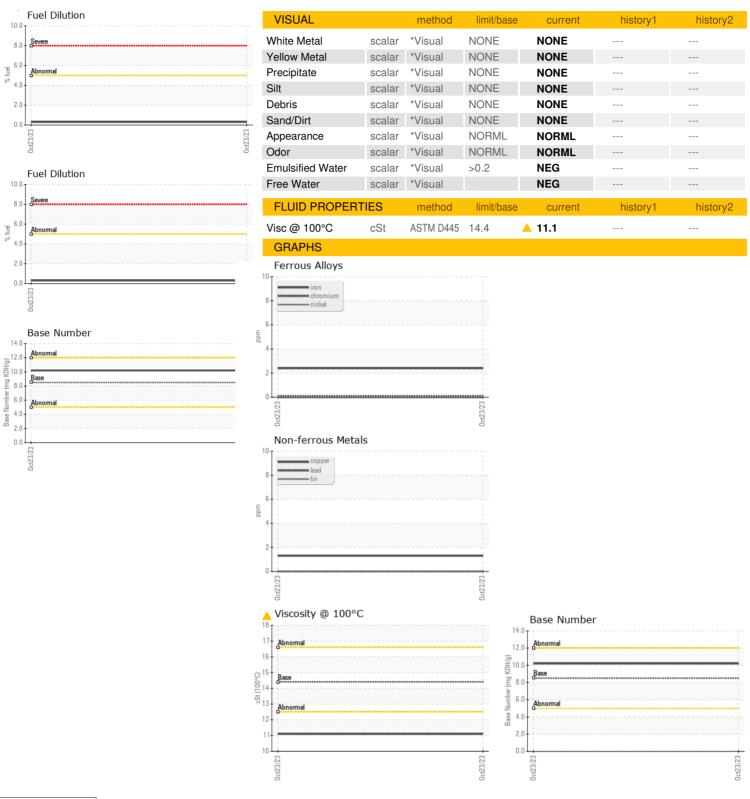
# Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION					Oct2023		
Sample Date   Client Info   1916	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         1916             Oil Changed         Client Info         1916             Oil Changed         Client Info         Not Changed            Sample Status         Image: Control of Modern of Mode	Sample Number		Client Info		WC0862653		
Oil Age Oil Changed         hrs         Client Info         Not Changd	Sample Date		Client Info		23 Oct 2023		
Oil Changed Sample Status         Client Info         Not Changd ATTENTION	Machine Age	hrs	Client Info		1916		
CONTAMINATION         method         limit/base         current         history1         history2           Glycol         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2             Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >2         <1	Oil Age	hrs	Client Info		1916		
CONTAMINATION         method         limit/base         current         history1         history2           Glycol         WC Method         NEG	Oil Changed		Client Info		Not Changd		
WEAR METALS         method         limit/base         current         history1         history2           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >= 20         0             Chromium         ppm         ASTM D5185m         >2         <1             Nickel         ppm         ASTM D5185m         >2         <1             Titanium         ppm         ASTM D5185m         >2         <1             Aluminum         ppm         ASTM D5185m         >2         <1             Lead         ppm         ASTM D5185m         >2         <1             Lead         ppm         ASTM D5185m         >330         1             Copper         ppm         ASTM D5185m         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m </td <td>Sample Status</td> <td></td> <td></td> <td></td> <td>ATTENTION</td> <td></td> <td></td>	Sample Status				ATTENTION		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2             Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >2         <1             Titanium         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         1             Lead         ppm         ASTM D5185m         >40         0             Lead         ppm         ASTM D5185m         >40         0             Copper         ppm         ASTM D5185m         >40         0             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >50         53             ADDITIVES         method         limit/base         current	CONTAMINATION		method	limit/base	current	history1	history2
Iron	Glycol		WC Method		NEG		
Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >2         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	2		
Titanium	Chromium	ppm	ASTM D5185m	>20	0		
Silver	Nickel	ppm	ASTM D5185m	>2	<1		
Aluminum         ppm         ASTM D5185m         >25         2             Lead         ppm         ASTM D5185m         >40         0             Copper         ppm         ASTM D5185m         >330         1             Tin         ppm         ASTM D5185m         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             Barium         ppm         ASTM D5185m         10         0             Barium         ppm         ASTM D5185m         10         0             Magnesium         ppm         ASTM D5185m         10         520             Magnesium         ppm         ASTM D5185m         3000         1630	Titanium	ppm	ASTM D5185m	>2	0		
Lead         ppm         ASTM D5185m         >40         0             Copper         ppm         ASTM D5185m         >330         1             Tin         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         10         0             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         38             Manganese         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         450         520             Calcium         ppm         ASTM D5185m         1150         970	Silver	ppm	ASTM D5185m	>2	<1		
Copper         ppm         ASTM D5185m         >330         1             Tin         ppm         ASTM D5185m         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         10         0             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         38             Manganese         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         450         520             Calcium         ppm         ASTM D5185m         1150         970             Phosphorus         ppm         ASTM D5185m         1350         1166	Aluminum	ppm	ASTM D5185m	>25	2		
Tin         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         250         53             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         38             Manganese         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         450         520             Calcium         ppm         ASTM D5185m         1150         970             Phosphorus         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         >25         5	Lead	ppm	ASTM D5185m	>40	0		
Vanadium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         250         53             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         38             Manganese         ppm         ASTM D5185m         450         520             Magnesium         ppm         ASTM D5185m         3000         1630             Calcium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1150         970             Zinc         ppm         ASTM D5185m         4250         3044             Sulfur         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158	Copper	ppm	ASTM D5185m	>330	1		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         250         53             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         450         520             Magnesium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base	Tin	ppm	ASTM D5185m	>15	0		
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         250         53             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         100         38             Magnesium         ppm         ASTM D5185m         450         520             Magnesium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1350         1166             Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m	Vanadium	ppm	ASTM D5185m		0		
Boron	Cadmium	ppm	ASTM D5185m		0		
Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         38             Manganese         ppm         ASTM D5185m         450         520             Magnesium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1150         970             Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >20         <1             Fuel         %         ASTM D5185m         >20         <1             Fuel         %         ASTM D5185m         <	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         100         38             Manganese         ppm         ASTM D5185m         450         520             Magnesium         ppm         ASTM D5185m         450         520             Calcium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1150         970             Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >20         <1             Fuel         %         ASTM D5185m         >20         <1             INFRA-RED         method         limit/base </td <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>250</td> <td>53</td> <td></td> <td></td>	Boron	ppm	ASTM D5185m	250	53		
Manganese         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         450         520             Calcium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1150         970             Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1	Barium	ppm	ASTM D5185m	10	0		
Magnesium         ppm         ASTM D5185m         450         520             Calcium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1150         970             Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1	Molybdenum	ppm	ASTM D5185m	100	38		
Calcium         ppm         ASTM D5185m         3000         1630             Phosphorus         ppm         ASTM D5185m         1150         970             Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1	Manganese	ppm	ASTM D5185m		<1		
Phosphorus         ppm         ASTM D5185m         1150         970             Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1	Magnesium	ppm	ASTM D5185m	450	520		
Zinc         ppm         ASTM D5185m         1350         1166             Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1             Fuel         %         ASTM D3524         >5         0.3             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >3         0.1             Nitration         Abs/.1mm         *ASTM D7624         >20         5.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414	Calcium	ppm	ASTM D5185m	3000	1630		
Sulfur         ppm         ASTM D5185m         4250         3044             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1	Phosphorus	ppm	ASTM D5185m	1150	970		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1	Zinc	ppm	ASTM D5185m	1350	1166		
Silicon         ppm         ASTM D5185m         >25         5             Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1             Fuel         %         ASTM D3524         >5         0.3             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.4             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	Sulfur	ppm	ASTM D5185m	4250	3044		
Sodium         ppm         ASTM D5185m         >158         3             Potassium         ppm         ASTM D5185m         >20         <1             Fuel         %         ASTM D3524         >5         0.3             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.4             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         <1             Fuel         %         ASTM D3524         >5         0.3             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.4             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9		ppm					
Fuel         %         ASTM D3524         >5         0.3             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.4             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	Sodium	ppm	ASTM D5185m	>158	3		
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.4             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	Potassium	ppm	ASTM D5185m	>20	<1		
Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.4             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	Fuel	%	ASTM D3524	>5	0.3		
Nitration         Abs/cm         *ASTM D7624         >20         5.4             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	Soot %	%	*ASTM D7844	>3	0.1		
Sulfation         Abs/.1mm         *ASTM D7415         >30         21.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9	Nitration	Abs/cm	*ASTM D7624	>20	5.4		
Oxidation							
	FLUID DEGRADAT	ΓΙΟΝ	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.9		



# **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number Unique Number

le No. : WC086265 lumber : 05994198 e Number : 10722558

Unique Number : 10722558 Diagnostician : Jonathan Hester

Test Package : CONST ( Additional Tests: FuelDilution, PercentFuel, 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.

SHERWOOD CONSTRUCTION CO INC

3219 WEST MAY ST WICHITA, KS US 67213

Contact: BILL ORCUTT william.orcutt@wildcat.net

illiam.orcutt@wildcat.net T:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)