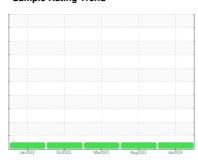


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id **021-0132** 

Component **Diesel Engine** 

SCHAEFFER SUPREME 7000 (--- GAL)

### DIAGNOSIS

# Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

All component wear rates are normal.

# Contamination

There is no indication of any contamination in the oil.

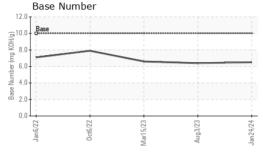
# **Fluid Condition**

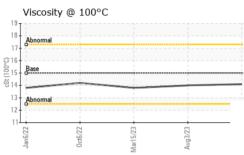
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date			Jan 2022	0ct2022	Mar2023 Aug2023	Jan2024	
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   0   0   0   0   0   0   0   0   0	Sample Number		Client Info		WC0868420	WC0814979	WC0750653
Dil Age	Sample Date		Client Info		24 Jan 2024	03 Aug 2023	15 Mar 2023
Contamped   Client Info   Changed   NORMAL   NORMAL   NORMAL	Machine Age	hrs	Client Info		7332	7082	6862
NORMAL   NORMAL   NORMAL   NORMAL	Oil Age	hrs	Client Info		0	0	0
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water         WC Melhod         0.2.         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2         4         4           Chromium         ppm         ASTM D5185m         >20         0         <1         0           Nickel         ppm         ASTM D5185m         >4         <1         0         0           Silver         ppm         ASTM D5185m         >4         <1         0         0           Silver         ppm         ASTM D5185m         >40         0         0         0           Aluminum         ppm         ASTM D5185m         >40         0         0         0           Copper         ppm         ASTM D5185m         >40         0         0         0           Cadadium         ppm         ASTM D5185m         >15         <1         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2	CONTAMINATION	N	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         >20         0         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	2	4	4
Titanium	Chromium	ppm	ASTM D5185m	>20	0	<1	0
Silver	Nickel	ppm		>4	<1	0	0
Aluminum         ppm         ASTM D5185m         >20         4         5         3           Lead         ppm         ASTM D5185m         >40         0         0         0           Copper         ppm         ASTM D5185m         >330         0         0         <1           Tin         ppm         ASTM D5185m         >15         <1         <1         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Magnesium         ppm         ASTM D5185m         1000         66         13         14         <1           Magnesium         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         1060 <td< th=""><th>Titanium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th>0</th><th>0</th></td<>	Titanium	ppm	ASTM D5185m		0	0	0
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper         ppm         ASTM D5185m         >330         0         0         <1	Aluminum	ppm	ASTM D5185m	>20	4	5	3
Tin	Lead	ppm	ASTM D5185m	>40	0	0	0
Vanadium         ppm         ASTM D5185m         <1	Copper	ppm	ASTM D5185m	>330	0	0	<1
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         87         92         87           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         50         73         80         77           Manganese         ppm         ASTM D5185m         50         73         80         77           Magnesium         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         985         1066         1117         1028           Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         >25         6         8         7 <th>Tin</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;15</th> <th>&lt;1</th> <th>&lt;1</th> <th>0</th>	Tin	ppm	ASTM D5185m	>15	<1	<1	0
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         87         92         87           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         50         73         80         77           Manganese         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         985         1066         1117         1028           Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         2         1 <t< th=""><th>Vanadium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>&lt;1</th><th>0</th><th>0</th></t<>	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         50         73         80         77           Manganese         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         985         1066         1117         1028           Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         >20         <1         0         <1           INFRA-RED         method         limit/base         cu	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         50         73         80         77           Manganese         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         985         1066         1117         1028           Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         2         1         0         <1	Boron	ppm	ASTM D5185m		87	92	87
Manganese         ppm         ASTM D5185m         <1	Barium	ppm	ASTM D5185m		_		
Magnesium         ppm         ASTM D5185m         1000         66         13         14           Calcium         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         985         1066         1117         1028           Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         20         <1	Molybdenum	ppm	ASTM D5185m	50	73	80	
Calcium         ppm         ASTM D5185m         1400         2137         2421         2295           Phosphorus         ppm         ASTM D5185m         985         1066         1117         1028           Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         2         1         0         0           Potassium         ppm         ASTM D5185m         >20         <1         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1         0.1         0.1           Nitration         Abs/.1mm         *ASTM D7415         >30         18.5         17.5         18.0           FLUID DEGRADATION         *ASTM	•	ppm					
Phosphorus         ppm         ASTM D5185m         985         1066         1117         1028           Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         <1         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         9.0         8.6         8.9           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.5         17.5         18.0           FLUID DEGRADATION         method		ppm					
Zinc         ppm         ASTM D5185m         1060         1270         1320         1228           Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         <1         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1         0.1         0.1           Nitration         Abs/cm         *ASTM D7624         >20         9.0         8.6         8.9           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.5         17.5         18.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D		ppm			-		
Sulfur         ppm         ASTM D5185m         4000         4877         6458         4861           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         <1         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.1         0.1         0.1           Nitration         Abs/.mm         *ASTM D7624         >20         9.0         8.6         8.9           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.5         17.5         18.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.9         13.6         13.9							
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         <1	-						
Silicon         ppm         ASTM D5185m         >25         6         8         7           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         <1			ASTM D5185m	4000	4877	6458	4861
Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         <1			method	limit/base	current	history1	
Potassium         ppm         ASTM D5185m         >20         <1	Silicon			>25			
INFRA-RED							
Soot %         %         *ASTM D7844 >3         0.1         0.1         0.1           Nitration         Abs/cm         *ASTM D7624 >20         9.0         8.6         8.9           Sulfation         Abs/.1mm         *ASTM D7415 >30         18.5         17.5         18.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 >25         14.9         13.6         13.9	Potassium	ppm	ASTM D5185m	>20	<1	0	<1
Nitration         Abs/cm         *ASTM D7624         >20         9.0         8.6         8.9           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.5         17.5         18.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.9         13.6         13.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         18.5         17.5         18.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.9         13.6         13.9							
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm 'ASTM D7414 >25 14.9 13.6 13.9	Nitration	Abs/cm	*ASTM D7624	>20			8.9
Oxidation Abs/.1mm *ASTM D7414 >25 <b>14.9</b> 13.6 13.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.5	17.5	18.0
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN)         mg KOH/g         ASTM D2896         10         6.5         6.4         6.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	13.6	13.9
	Base Number (BN)	mg KOH/g	ASTM D2896	10	6.5	6.4	6.6



# **OIL ANALYSIS REPORT**

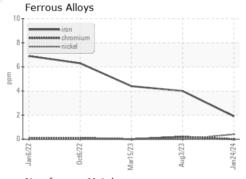


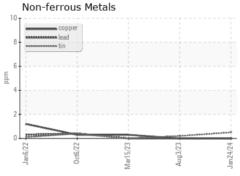


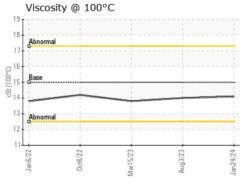
White Metal scal	ar *Visual	NONE			
		NONE	NONE	NONE	NONE
Yellow Metal sca	ar *Visual	NONE	NONE	NONE	NONE
Precipitate sca	ar *Visual	NONE	NONE	NONE	NONE
Silt sca	ar *Visual	NONE	NONE	NONE	NONE
Debris sca	ar *Visual	NONE	NONE	NONE	NONE
Sand/Dirt sca	ar *Visual	NONE	NONE	NONE	NONE
Appearance scal	ar *Visual	NORML	NORML	NORML	NORML
Odor sca	ar *Visual	NORML	NORML	NORML	NORML
Emulsified Water sca	ar *Visual	>0.2	NEG	NEG	NEG
Free Water sca	ar *Visual		NEG	NEG	NEG

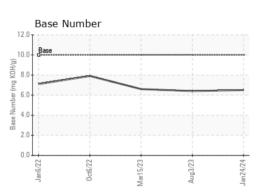
FLUID PROPERTIES		method			riistory i	Historyz	
Visc @ 100°C	cSt	ASTM D445	15	14.1	14.0	13.8	

# **GRAPHS**













Laboratory Sample No. Lab Number Unique Number : 10850273

: 06073596

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0868420

Recieved : 30 Jan 2024 Diagnosed

: 30 Jan 2024 Diagnostician : Wes Davis

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)

SHIMMICK CONSTRUCTION

5535 TRAILHEAD DRIVE CHATTANOOGA, TN US 37415

Contact: DANIEL LISELLA daniel.lisella@shimmick.com

T:

F: