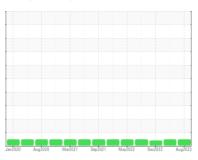


# **OIL ANALYSIS REPORT**

# SULLUBE 32 **SULLAIR 5509/VA 201009290026 - KS LARGE BORE**

Component Compressor



Sample Rating Trend



### 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

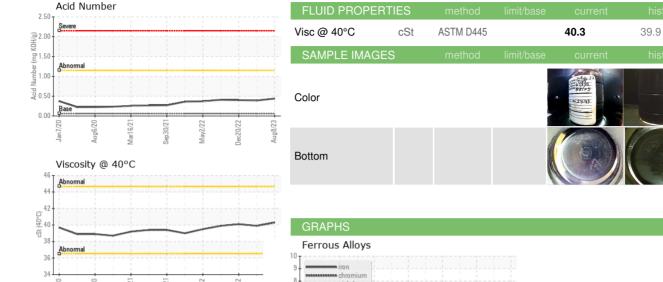
### **Fluid Condition**

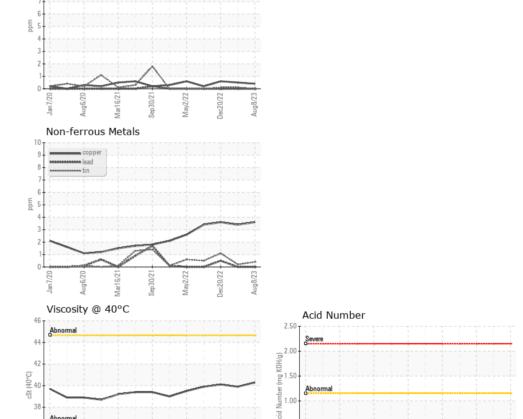
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION   method   limit/base   current   mistory1   mistory2			Jan2020	Aug2020 Mar2021	Sep2021 May2022 Dec2022	Aug2023		
Sample Date         Client Info         08 Aug 2023         20 May 2023         20 Dec 2022           Machine Age         hrs         Client Info         64979         64489         65360           Oil Age         hrs         Client Info         9144         2000         7000           Oil Ohanged         Client Info         N/A         N/A         N/A         N/A           Sample Status         method         limit/base         current         history1         history2           Iron         ppm         ASTM 05185m         >50         <1	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age         hrs         Client Info         64879         64489         65360           Oil Age         hrs         Client Info         9144         2000         7000           Oil Changel         Client Info         N/A         N/A         N/A           Sample Status         Client Info         N/A         N/A         N/A           WEAR METALS         method         Imilibase         current         Inistory1         history2           Iron         ppm         ASTM D5185m         >50         <1         <1         <1           Chromium         ppm         ASTM D5185m         >50         0         0         0           Nickel         ppm         ASTM D5185m         0         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0         0           Aluminum         ppm         ASTM D5185m         >15         <1         0         <1         <1         1           Lead         ppm         ASTM D5185m         >10         <1         <1         1         1           Copper         ppm         ASTM D5185m         >10         <1         <1         1	Sample Number		Client Info		UCZ05932163	UCZ05842690	UCZ05736272	
Oil Age         nrs         Client Info         9144         2000         7000           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Client Info         N/A         N/A         N/A         N/A         N/A           WEAR METALS         method         limit/base         current         history2         history2           Iron         ppm         ASTM D5185m         >50         <1	Sample Date		Client Info		08 Aug 2023	02 May 2023	20 Dec 2022	
Oil Changed Sample Status         Client Info         N/A         N/A         N/A         ATTENTION           WEAR METALS         method         limit/base         current         history2         history2           Iron         ppm         ASTM D5185m         >50         <1         <1         <1           Chromium         ppm         ASTM D5185m         >50         0         0         0           Nickel         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         0         0         0         0           Alluminum         ppm         ASTM D5185m         >65         0         0         <1           Lead         ppm         ASTM D5185m         >65         0         0         <1           Lead         ppm         ASTM D5185m         >10         <1         <1         1           Lead         ppm         ASTM D5185m         >10         <1         <1         1         1           Vanadium         ppm         ASTM D5185m         >10         <1         0         0         <0           Cadmium         ppm         ASTM D5185m         745 <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>64979</th> <th>64489</th> <th>65360</th>	Machine Age	hrs	Client Info		64979	64489	65360	
NORMAL   NORMAL   NORMAL   NORMAL	Oil Age	hrs	Client Info		9144	2000	7000	
Iron	Oil Changed		Client Info		N/A	N/A	N/A	
Iron	Sample Status				NORMAL	NORMAL	ATTENTION	
Chromium	WEAR METALS		method	limit/base	current	history1	history2	
Nickel         ppm         ASTM D5185m         0         <1	Iron	ppm	ASTM D5185m	>50	<1	<1	<1	
Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         0         0         0         0           Aluminum         ppm         ASTM D5185m         >15         <1         0         <1           Lead         ppm         ASTM D5185m         >65         4         3         4           Tin         ppm         ASTM D5185m         >65         4         3         4           Tin         ppm         ASTM D5185m         >10         <1         <1         1           Vanadium         ppm         ASTM D5185m         >10         <1         <1         1           Vanadium         ppm         ASTM D5185m         0         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         1         0         0           Abolybdenum         ppm         ASTM D5185m         0         0         0         0           Magneseum         ppm         ASTM D5185m         <1         0         2         0	Chromium	ppm	ASTM D5185m	>5	0	0	0	
Stilver	Nickel	ppm	ASTM D5185m		0	<1	<1	
Aluminum         ppm         ASTM D5185m         >15         <1	Titanium	ppm	ASTM D5185m		0	0	0	
Lead         ppm         ASTM D5185m         >65         0         0         <1	Silver	ppm	ASTM D5185m		0	0	0	
Copper         ppm         ASTM D5185m         >65         4         3         4           Tin         ppm         ASTM D5185m         >10         <1         <1         1           Vanadium         ppm         ASTM D5185m         <1         0         0           Cadmium         ppm         ASTM D5185m         0         <1         0           Boron         ppm         ASTM D5185m         0         1         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1         0         0           Magnesium         ppm         ASTM D5185m         <1         2         0           Calcium         ppm         ASTM D5185m         <1         2         0           Magnesium         ppm         ASTM D5185m         3         8         5         27           Zinc         ppm         ASTM D5185m         3         8         5         27           Zinc         ppm         ASTM D5185m         305         292         179	Aluminum	ppm	ASTM D5185m	>15	<1	0	<1	
Copper         ppm         ASTM D5185m         >65         4         3         4           Tin         ppm         ASTM D5185m         >10         <1         <1         1           Vanadium         ppm         ASTM D5185m         <1         0         0         0           Cadmium         ppm         ASTM D5185m         0         <1         0         0           Boron         ppm         ASTM D5185m         0         1         0	Lead		ASTM D5185m	>65	0	0	<1	
Tin         ppm         ASTM D5185m         >10         <1								
Vanadium         ppm         ASTM D5185m         <1	<th></th> <th></th> <th></th> <th></th> <th>&lt;1</th> <th>&lt;1</th> <th>1</th>					<1	<1	1
Cadmium         ppm         ASTM D5185m         0         <1	Vanadium		ASTM D5185m			0	0	
ADDITIVES								
Boron		РР						
Barium         ppm         ASTM D5185m         745         105         204         ▲ 96           Molybdenum         ppm         ASTM D5185m         0         0         0           Magnesium         ppm         ASTM D5185m         <1         0         0           Magnesium         ppm         ASTM D5185m         <1         2         0           Calcium         ppm         ASTM D5185m         1         0         2         0           Phosphorus         ppm         ASTM D5185m         3         8         5         27           Zinc         ppm         ASTM D5185m         305         292         179           CONTAMINANTS         method         limit/base         current         history1         history2           Soliticon         ppm         ASTM D5185m         >35         1         2         2           Sodium         ppm         ASTM D5185m         >35         1         2         2           Sodium         ppm         ASTM D5185m         >20         8         4         5           FLUID DEGRADATION         method         limit/base         current         history1	ADDITIVES			limit/base		•	•	
Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         <1	Boron	ppm	ASTM D5185m					
Manganese         ppm         ASTM D5185m         <1	Barium	ppm	ASTM D5185m	745	105	204	<u></u> 96	
Magnesium         ppm         ASTM D5185m         <1	Molybdenum	ppm	ASTM D5185m		0	0		
Calcium         ppm         ASTM D5185m         1         0         2         0           Phosphorus         ppm         ASTM D5185m         3         8         5         27           Zinc         ppm         ASTM D5185m         19         29         12           Sulfur         ppm         ASTM D5185m         305         292         179           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >35         1         2         2           Sodium         ppm         ASTM D5185m         >20         8         4         5           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHlg         ASTM D8045         0.06         0.44         0.39         0.40           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar	•	ppm	ASTM D5185m		<1		0	
Phosphorus         ppm         ASTM D5185m         3         8         5         27           Zinc         ppm         ASTM D5185m         19         29         12           Sulfur         ppm         ASTM D5185m         305         292         179           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >35         1         2         2           Sodium         ppm         ASTM D5185m         >35         4         48         61           Potassium         ppm         ASTM D5185m         >20         8         4         5           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHlg         ASTM D8045         0.06         0.44         0.39         0.40           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         <	Magnesium	ppm	ASTM D5185m				0	
Zinc         ppm         ASTM D5185m         19         29         12           Sulfur         ppm         ASTM D5185m         305         292         179           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >35         1         2         2           Sodium         ppm         ASTM D5185m         >20         8         4         5           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHlg         ASTM D8045         0.06         0.44         0.39         0.40           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Vellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *	Calcium	ppm	ASTM D5185m	1	0		0	
Sulfur         ppm         ASTM D5185m         305         292         179           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >35         1         2         2           Sodium         ppm         ASTM D5185m         >20         8         4         5           Potassium         ppm         ASTM D5185m         >20         8         4         5           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOHlg         ASTM D8045         0.06         0.44         0.39         0.40           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Vellow Metal         scalar         *Visual         NONE         NONE         NONE           Vellow Metal         scalar         *Visual         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE	Phosphorus	ppm	ASTM D5185m	3	8	5		
CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m >35 1 2 2  Sodium ppm ASTM D5185m >20 8 4 61  Potassium ppm ASTM D5185m >20 8 4 5  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.06 0.44 0.39 0.40  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  Silt scalar *Visual NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML  Codor scalar *Visual NORML NORML NORML NORML  Emulsified Water scalar *Visual NORML NORML NORML  NORML	Zinc	ppm	ASTM D5185m		19	29	12	
Silicon ppm ASTM D5185m >35 1 2 2 Sodium ppm ASTM D5185m 54 48 61 Potassium ppm ASTM D5185m >20 8 4 5  FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.06 0.44 0.39 0.40  VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE NONE Appearance scalar *Visual NONE NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NORML	Sulfur	ppm	ASTM D5185m		305	292	179	
SodiumppmASTM D5185m544861PotassiumppmASTM D5185m>20845FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2Acid Number (AN)mg KOH/gASTM D80450.060.440.390.40VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEG	CONTAMINANTS	3	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 <b>8</b> 4 5  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.06 <b>0.44</b> 0.39 0.40  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE NONE NONE NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE NONE  Debris scalar *Visual NONE 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 >0.1 NEG NEG NEG	Silicon	ppm	ASTM D5185m	>35	1	2	2	
FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.06 0.44 0.39 0.40  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE NONE NONE NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE NONE  Debris scalar *Visual NONE 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 >0.1 NEG NEG NEG	Sodium	ppm	ASTM D5185m		54	48	61	
Acid Number (AN) mg KOH/g ASTM D8045 0.06 0.44 0.39 0.40  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE NONE NONE NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE 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 >0.1 NEG NEG NEG	Potassium	ppm	ASTM D5185m	>20	8	4	5	
White Metal scalar *Visual NONE 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 NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.1 NEG NEG NEG	FLUID DEGRADA	NOITA	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 >0.1 NEG NEG NEG	Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	0.44	0.39	0.40	
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEG	VISUAL		method	limit/base	current	history1	history2	
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 >0.1 NEG NEG NEG	White Metal	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 >0.1 NEG NEG NEG	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEG	Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEG	Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
Odor scalar *Visual NORML	Appearance	scalar	*Visual	NORML		NORML	NORML	
Emulsified Water scalar *Visual >0.1 NEG NEG NEG				NORML			NORML	
	Emulsified Water							
	Free Water	scalar	*Visual		NEG	NEG	NEG	



## **OIL ANALYSIS REPORT**





0.00





Certificate L2367

Laboratory Sample No.

Lab Number

: 05932163 Unique Number : 10617434 Test Package : IND 2

To discuss this sample report, contact Customer Service at 1-800-237-1369.

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: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : UCZ05932163 Received : 23 Aug 2023 Diagnosed

: 24 Aug 2023 Diagnostician : Don Baldridge **ZORN COMP & EQUIPMENT CO (GB)** 

733 POTTS AVE GREEN BAY, WI US 54304 Contact: DEAN SCHAD

F: (920)499-1168

40.1

dean.schad@zornair.com T: (920)391-8121

\* - 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)