

## **OIL ANALYSIS REPORT**

### Area MINING Machine Id ME-586 JOHN DEERE 944K 1DW944KXPNL703686

Front Left Final Drive

Fluid SHELL Spirax S4 CX 30 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

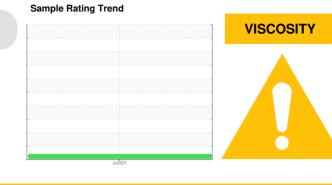
All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

## Fluid Condition

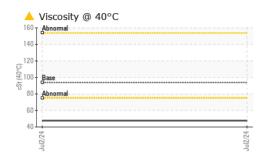
Viscosity of sample indicates oil is within SAE 10W range, advise investigate. The condition of the oil is acceptable for the time in service.



Sample Date         Client Info         02 Jul 2024             Machine Age         hrs         Client Info         3191             Oil Age         hrs         Client Info         S191             Oil Anaged         Client Info         Not Changed             Sample Status         Client Info         Not Changed             ZontAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.075         NEG             Chromium         ppm         ASTM D5185(m)         >750         12             Chromium         ppm         ASTM D5185(m)         >10         <1             Nickel         ppm         ASTM D5185(m)         >10         <1             Aluminum         ppm         ASTM D5185(m)         >10         0             Aluminum         ppm         ASTM D5185(m)         >10         0             Auminum         p	SAMPLE INFORMA	ATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         3191             Oil Age         hrs         Client Info         3191             Oil Changed         Client Info         Not Changd             Sample Status         Client Info         Not Changd             CONTAMINATION         method         imit/base         current         history1         history2           Water         WC Method         >0.075         NEG             WEAR METALS         method         imit/base         current         history1         history2           Iron         ppm         ASTMD5185(m)         >9         0             Nickel         ppm         ASTMD5185(m)         >10         <1	Sample Number		Client Info		WC0942057		
Oil Age         hrs         Client Info         3191             Oil Changed         Client Info         Not Changd             Sample Status         Imit/base         current         history1         history2           Water         WC Method         >0.075         NEG             WEAR METALS         method         imit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >750         12             Chromium         ppm         ASTM D5185(m)         >9         0             Silver         ppm         ASTM D5185(m)         >10         <1	Sample Date		Client Info		02 Jul 2024		
Oli Changed     Client Info     Not Changd         Sample Status     Image of the status     Method     Imit/base     current     history1     history2       CONTAMINATION     method     Imit/base     current     history1     history2       Water     WC Method     >0.075     NEG         WEAR METALS     method     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185(m)     >9     0         Chromium     ppm     ASTM D5185(m)     >10     <11         Nickel     ppm     ASTM D5185(m)     >10     <11         Silver     ppm     ASTM D5185(m)     >10     <11         Copper     ppm     ASTM D5185(m)     >10     <11         Lead     ppm     ASTM D5185(m)     >10     0         Antimony     ppm     ASTM D5185(m)     >5     0         Antimony     ppm     ASTM D5185(m)     >5     0         Cardmium     ppm     ASTM D5185(m)     5     0	Machine Age	hrs	Client Info		3191		
Sample Status         Image         ABNORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.075         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >750         12             Chromium         ppm         ASTM D5185(m)         >10         <1	Oil Age	hrs	Client Info		3191		
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.075         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >750         12             Chromium         ppm         ASTM D5185(m)         >9         0             Nickel         ppm         ASTM D5185(m)         >10         <1	Oil Changed		Client Info		Not Changd		
Water         WC Method         >0.075         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >750         12             Chromium         ppm         ASTM D5185(m)         >9         0             Nickel         ppm         ASTM D5185(m)         >10         <1             Silver         ppm         ASTM D5185(m)         >10         <1             Aluminum         ppm         ASTM D5185(m)         >40         <1             Aluminum         ppm         ASTM D5185(m)         >10         0             Aluminum         ppm         ASTM D5185(m)         >10         0             Astm Dpm         ASTM D5185(m)         >5         0              Astm Dpm         ASTM D5185(m)         0               Vanadium         ppm         ASTM D5185(m)         0	Sample Status				ABNORMAL		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >750         12             Chromium         ppm         ASTM D5185(m)         >9         0             Nickel         ppm         ASTM D5185(m)         >10         <1             Titanium         ppm         ASTM D5185(m)         <1              Aluminum         ppm         ASTM D5185(m)         >40         <1             Lead         ppm         ASTM D5185(m)         >40         38             Copper         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         >5         0             Antimony         ppm         ASTM D5185(m)         >6              Cadmium         ppm         ASTM D5185(m)         0              ADDITIVES         method         limit/base	CONTAMINATION		method	limit/base	current	history1	history2
Iron         ppm         ASTM D5185(m)         >750         12             Chromium         ppm         ASTM D5185(m)         >9         0             Nickel         ppm         ASTM D5185(m)         >10         <1             Titanium         ppm         ASTM D5185(m)         <1             Aluminum         ppm         ASTM D5185(m)         >40         <1             Aluminum         ppm         ASTM D5185(m)         >40         38             Lead         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         0             Vanadium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             Boron         ppm         ASTM D5185(m)         <1	Water		WC Method	>0.075	NEG		
Chromium         ppm         ASTM D5185(m)         >9         0             Nickel         ppm         ASTM D5185(m)         >10         <1             Titanium         ppm         ASTM D5185(m)         <1             Silver         ppm         ASTM D5185(m)         >40         <1             Aluminum         ppm         ASTM D5185(m)         >40         <1             Lead         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         0	WEAR METALS		method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185(m)         >10         <1            Titanium         ppm         ASTM D5185(m)         <1	Iron	ppm	ASTM D5185(m)	>750	12		
Internation         ppm         ASTM D5185(m)         <1             Silver         ppm         ASTM D5185(m)         <1	Chromium	ppm	ASTM D5185(m)	>9	0		
Silver         ppm         ASTM D5185(m)         <1             Aluminum         ppm         ASTM D5185(m)         >40         <1	Nickel	ppm	ASTM D5185(m)	>10	<1		
Aluminum       ppm       ASTM D5185(m)       >40       <1	Titanium	ppm	ASTM D5185(m)		0		
Lead         ppm         ASTM D5185(m)         >15         <1             Copper         ppm         ASTM D5185(m)         >40         38             Tin         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         >5         0             Vanadium         ppm         ASTM D5185(m)         0              Beryllium         ppm         ASTM D5185(m)         0              Cadmium         ppm         ASTM D5185(m)         0              Beryllium         ppm         ASTM D5185(m)         0              Cadmium         ppm         ASTM D5185(m)         3              Boron         ppm         ASTM D5185(m)         <1	Silver	ppm	ASTM D5185(m)		<1		
Copper         ppm         ASTM D5185(m)         >40         38             Tin         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         >5         0             Vanadium         ppm         ASTM D5185(m)         0              Beryllium         ppm         ASTM D5185(m)         0              ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         3             Molybdenum         ppm         ASTM D5185(m)         <1	Aluminum	ppm	ASTM D5185(m)	>40	<1		
Tin         ppm         ASTM D5185(m)         >10         0             Antimony         ppm         ASTM D5185(m)         >5         0             Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         3             Molybdenum         ppm         ASTM D5185(m)         <1	Lead	ppm	ASTM D5185(m)	>15	<1		
Antimony         ppm         ASTM D5185(m)         >5         0             Vanadium         ppm         ASTM D5185(m)         0              Beryllium         ppm         ASTM D5185(m)         0              Cadmium         ppm         ASTM D5185(m)         0              ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         3             Molybdenum         ppm         ASTM D5185(m)         <1	Copper	ppm	ASTM D5185(m)	>40	38		
Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         3             Barium         ppm         ASTM D5185(m)         <1	Tin	ppm	ASTM D5185(m)	>10	0		
Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         3             Barium         ppm         ASTM D5185(m)         <1             Molybdenum         ppm         ASTM D5185(m)         <1             Manganese         ppm         ASTM D5185(m)         <1             Magnesium         ppm         ASTM D5185(m)         52             Calcium         ppm         ASTM D5185(m)         1082             Phosphorus         ppm         ASTM D5185(m)         1082             Zinc         ppm         ASTM D5185(m)         1082             Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)         <	Antimony	ppm	ASTM D5185(m)	>5	0		
CadmiumppmASTM D5185(m)0ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185(m)3BariumppmASTM D5185(m)<1	Vanadium	ppm	ASTM D5185(m)		0		
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185(m)3BariumppmASTM D5185(m)<1	Beryllium	ppm	ASTM D5185(m)		0		
Boron         ppm         ASTM D5185(m)         3             Barium         ppm         ASTM D5185(m)         <1	Cadmium	ppm	ASTM D5185(m)		0		
Barium         ppm         ASTM D5185(m)         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185(m)         <1             Manganese         ppm         ASTM D5185(m)         <1             Magnesium         ppm         ASTM D5185(m)         52             Calcium         ppm         ASTM D5185(m)         3229             Calcium         ppm         ASTM D5185(m)         1082             Phosphorus         ppm         ASTM D5185(m)         1082             Zinc         ppm         ASTM D5185(m)         3303             Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)         <1             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Boron	ppm	ASTM D5185(m)		3		
Manganese         ppm         ASTM D5185(m)         <1             Magnesium         ppm         ASTM D5185(m)         52             Calcium         ppm         ASTM D5185(m)         3229             Phosphorus         ppm         ASTM D5185(m)         1082             Zinc         ppm         ASTM D5185(m)         1082             Sulfur         ppm         ASTM D5185(m)         1228             Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Barium	ppm	ASTM D5185(m)		<1		
Magnesium         ppm         ASTM D5185(m)         52             Calcium         ppm         ASTM D5185(m)         3229             Phosphorus         ppm         ASTM D5185(m)         1082             Zinc         ppm         ASTM D5185(m)         1228             Sulfur         ppm         ASTM D5185(m)         3303             Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Molybdenum	ppm	ASTM D5185(m)		<1		
Calcium         ppm         ASTM D5185(m)         3229             Phosphorus         ppm         ASTM D5185(m)         1082             Zinc         ppm         ASTM D5185(m)         1228             Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)         3303             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Manganese	ppm	ASTM D5185(m)		<1		
Phosphorus         ppm         ASTM D5185(m)         1082             Zinc         ppm         ASTM D5185(m)         1228             Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)         <1	Magnesium	ppm	ASTM D5185(m)		52		
Zinc         ppm         ASTM D5185(m)         1228             Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)          current         history1         history2           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Calcium	ppm	ASTM D5185(m)		3229		
Sulfur         ppm         ASTM D5185(m)         3303             Lithium         ppm         ASTM D5185(m)         <1             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Phosphorus	ppm	ASTM D5185(m)		1082		
Lithium         ppm         ASTM D5185(m)         <1             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Zinc	ppm	ASTM D5185(m)		1228		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Sulfur	ppm	ASTM D5185(m)		3303		
Silicon         ppm         ASTM D5185(m)         >75         24             Sodium         ppm         ASTM D5185(m)         >51         2	Lithium	ppm	ASTM D5185(m)		<1		
Sodium         ppm         ASTM D5185(m)         >51         2	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185(m) >51 2	Silicon	ppm	ASTM D5185(m)	>75	24		
			( )		2		
			( )	>20	<1		



# **OIL ANALYSIS REPORT**



		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
Emulsified Water	scalar	Visual*	>0.075	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPERT		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)		▲ 47.7		
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color					no image	no image
Bottom					no image	no image
GRAPHS						1
Ferrous Alloys						
5 iron 1						
0 - chromium						
IIICKEI						
5						
0						
0			2/24			
			Jul2/24			
0	s		Jul2/24			
Non-ferrous Metals	5		Jul2/24			
Non-ferrous Metals	5		Jul224			
Non-ferrous Metals	s		Jui2/24			
Non-ferrous Metals	5		Jui224			
Non-ferrous Metals	5		Jui224			
Non-ferrous Metals	5		24			
Non-ferrous Metals	5		Jui2/24			
Non-ferrous Metals	5		24			
Non-ferrous Metals	5		24			
Non-ferrous Metals	5		24			
Non-ferrous Metals	5		24			
Non-ferrous Metals	5		24			
Non-ferrous Metals	5		24			
Non-ferrous Metals	5		24			



Laboratory CALA Sample No. : WC0942057 Lab Number : 02646356 ISO 17025:2017 Accredited Laboratory Unique Number : 5811908 Test Package : CONST

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received : 08 Jul 2024 Tested : 08 Jul 2024 : 09 Jul 2024 - Kevin Marson Diagnosed

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

Covia Canada Ltd. 260 Unimin Road, County Rd. #46 Havelock, ON CA KOL 1Z0 Contact: Dan Lyon dan.lyon@coviacorp.com T: (705)632-8904 F:

Report Id: COVHAV [WCAMIS] 02646356 (Generated: 07/09/2024 08:33:52) Rev: 1

Submitted By: Paul Laneville Page 2 of 2