

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

LINE 10 (S/N 18707311)

Hydraulic System Fluid SUNOCO SUNVIS 846 ISO 46 (50 GAL)

DIAGNOSIS

A Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the fluid.

Fluid Condition

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

SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info 06 May 2024 09 Jan 2023 19 Oct 2021 Machine Age mths Client Info 0 0 0 Oil Age mths Client Info 0 0 0 Oil Age mths Client Info 0 0 0 Oil Age mths Client Info 0 0 0 Sample Status method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05165m >40 0 <1 Nickel ppm ASTM 05165m >44 0 0 <1 Aluminum ppm ASTM 05165m >4 <1 0 <1 Aluminum ppm			Sep2014	Oct2015 Nov2016	Feb2019 Nov2020	lan2023	
Sample Date Client Info 08 May 2024 09 Jan 2023 19 Oct 2011 Machine Age mths Client Info 0 0 0 Oil Age mths Client Info 0 0 0 Oil Changed Client Info N/A N/A NA NA CONTAMINATION method imit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method imit/base current history1 rhistory2 Iron ppm ASTM 05185m >40 0 <1 <1 Chromium ppm ASTM 05185m >40 0 <0 0 Nickel ppm ASTM 05185m >40 0 <1 0 0 Silver ppm ASTM 05185m >4 <1 0 <1 0 <1 Auminum ppm ASTM 05185m >4 <1 0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age Oil AgemthsClient Info000Oil ChangedClient InfoN/AN/ANot ContandSample StatusClient InfoN/AABNORMALABNORMALCONTAMINATIONmethodlimit/basecurrenthistory1WaterWC Method>00<1WaterWC Methodsolornetsory1history2WaterWC Methodimit/basecurrenthistory1history2InonppmASTM D5185m>400<1<1ChromiumppmASTM D5185m>40000NickelppmASTM D5185m>2000<1AluminumppmASTM D5185m>4000<1AluminumppmASTM D5185m>4000<1AdminumppmASTM D5185m>1000<1AdminumppmASTM D5185m>100<10CopperppmASTM D5185m>4<10<1AdminumppmASTM D5185m>00<10AdminumppmASTM D5185m>00<10AdminumppmASTM D5185m00<10AdminumppmASTM D5185m00<10AdminumppmASTM D5185m00<11AdminumppmASTM D5185m00<1<	Sample Number		Client Info		WC0827129	WC0760814	WC0560295
Oil AgemthsClient InfoN/AN/ANot ChangdSample StatusIClient InfoN/AABNORMALABNORMALABNORMALABNORMALCONTAMINATIONmethodlimil/basecurrenthistory1history2WaterWC Method>0.05NEGNEGNEGWEAR METALSmethodlimil/basecurrenthistory1history2IronppmASTM D5185m>400<1	Sample Date		Client Info		08 May 2024	09 Jan 2023	19 Oct 2021
Oil Changed Sample Status Client Info N/A ABNORMAL N/A ABNORMAL N/A ABNORMAL Not Changd ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >40 0 <1 <1 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 <1 Itanium ppm ASTM D5185m >44 <1 0 0 Copper ppm ASTM D5185m >44 <1 0 0 Itaaium ppm ASTM D5185m >44 <1 0 0 Copper ppm ASTM D5185m >44 <1 0 0 Cadamium ppm ASTM D5185m >44 <1 0 0 Cadamium ppm ASTM D5185m 0 0 0 0 Astmony ppm ASTM D5185m 0 0 0 1 Baron	Machine Age	mths	Client Info		0	0	0
Sample Status Image of the status ABNORMAL ABNORMAL ABNORMAL ABNORMAL ABNORMAL ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG Iron ppm ASTM D5185m >40 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m 0 0 0 1 0 Lead ppm ASTM D5185m >10 0 0 0 0 Autimony ppm ASTM D5185m >10 0	Oil Age	mths	Client Info		0	0	0
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >40 0 <1	Oil Changed		Client Info		N/A	N/A	Not Changd
Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >40 0 <1 <1 Chromium ppm ASTM D5185m >44 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m 0 0 <1 0 Aluminum ppm ASTM D5185m >44 <1 0 0 Lead ppm ASTM D5185m >44 <1 0 <1 Copper ppm ASTM D5185m >44 <1 0 <1 Antimony ppm ASTM D5185m >44 <1 0 <1 Cadmium ppm ASTM D5185m >4 <1 0 <1 Antimony ppm ASTM D5185m 0 0 0 <1 Antimony ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 0 0 <1	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
WEAK METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >40 0 <1 <1 Chromium ppm ASTM D5185m >40 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 <1 Aluminum ppm ASTM D5185m >4 <1 0 0 Lead ppm ASTM D5185m >4 <1 0 <1 Copper ppm ASTM D5185m >4 <1 0 <1 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Addium ppm ASTM D5185m 0 0 0 <1 Barium ppm ASTM D5185m 0 0 0 1	CONTAMINATION	N	method	limit/base	current	history1	history2
Iron ppm ASTM D5185m >40 0 <1	Water		WC Method	>0.05	NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m 0 0 0 11 Aluminum ppm ASTM D5185m >4 <1 0 0 Lead ppm ASTM D5185m >4 <1 0 <1 Copper ppm ASTM D5185m >60 11 10 7 Tin ppm ASTM D5185m >60 11 0 <1 Attmony ppm ASTM D5185m >0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 <1 1 Magaese ppm ASTM D5185m 0 0 <1 1 Magaesium ppm ASTM D5185m 0 2173 967 <	WEAR METALS		method	limit/base	current	history1	history2
NickelppmASTM D5185m>20000TitaniumppmASTM D5185m0000SilverppmASTM D5185m>4<1	Iron	ppm	ASTM D5185m	>40	0	<1	<1
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >4 <1	Chromium	ppm	ASTM D5185m	>4	0	0	0
SilverppmASTM D5185m00<1AluminumppmASTM D5185m>4<1	Nickel	ppm	ASTM D5185m	>20	0	0	0
Aluminum ppm ASTM D5185m >4 <1 0 0 Lead ppm ASTM D5185m >10 0 0 <1	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >10 0 0 <1 Copper ppm ASTM D5185m >60 11 10 7 Tin ppm ASTM D5185m >4 <1	Silver	ppm	ASTM D5185m		0	0	<1
Copper ppm ASTM D5185m >60 11 10 7 Tin ppm ASTM D5185m >4 <1	Aluminum	ppm	ASTM D5185m	>4	<1	0	0
Tin ppm ASTM D5185m >4 <1 0 <1 Antimony ppm ASTM D5185m 0 0 0 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 <1	Lead	ppm	ASTM D5185m	>10	0	0	<1
Antimony ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 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 Barium ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 1 Manganese ppm ASTM D5185m 0 2 2 2 Calcium ppm ASTM D5185m 0 2 2 2 Calcium ppm ASTM D5185m 0 600 69 58 Phosphorus ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 20 c1 0 0 Sulfur ppm <th>Copper</th> <td>ppm</td> <td>ASTM D5185m</td> <td>>60</td> <th>11</th> <td>10</td> <td>7</td>	Copper	ppm	ASTM D5185m	>60	11	10	7
VanadiumppmASTM D5185m000CadmiumppmASTM D5185mImit/basecurrenthistory1history2BoronppmASTM D5185m000<1BariumppmASTM D5185m000<1BariumppmASTM D5185m000<1ManganeseppmASTM D5185m000<1ManganeseppmASTM D5185m000<1ManganeseppmASTM D5185m0222CalciumppmASTM D5185m0222CalciumppmASTM D5185m0222SulfurppmASTM D5185m0222SulfurppmASTM D5185m323349303303ZincppmASTM D5185m20 <ff>67632173967SulfurppmASTM D5185m>20<f1< th="">00PotassiumppmASTM D5185m>20<f1< th="">00FLUID CLEANLINESSmethodlimit/basecurrenthistory1history2Particles >4µmpmASTM D7647>320350A 855926Particles >4µmASTM D7647>320350A 855926Particles >1µmASTM D7647>80102216Particles >2µmMMT07647>2025350</f1<></f1<></ff>	Tin	ppm	ASTM D5185m	>4	<1	0	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1	Antimony	ppm	ASTM D5185m				0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1 Manganese ppm ASTM D5185m 1 0 0 Magnesium ppm ASTM D5185m 0 2 2 Calcium ppm ASTM D5185m 0 2 2 Calcium ppm ASTM D5185m 60 69 58 Phosphorus ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 323 2173 967 Sulfur ppm ASTM D5185m 20 <1 <1 0 Sulfur ppm ASTM D5185m >20 <1 <1 0 Sodium ppm ASTM D5185m >20 <1 <1 0 Potassium ppm ASTM D5185m >20 0 0 0 FLUID CLEANLINESS method limit/base current <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 <1 Manganese ppm ASTM D5185m 1 0 0 Magnesium ppm ASTM D5185m 0 2 2 Calcium ppm ASTM D5185m 0 60 69 58 Phosphorus ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 6763 2173 967 Sulfur ppm ASTM D5185m >20 <1	Boron	ppm	ASTM D5185m		0	0	<1
Magganese ppm ASTM D5185m 1 0 0 Maggnesium ppm ASTM D5185m 0 2 2 Calcium ppm ASTM D5185m 0 60 69 58 Phosphorus ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 6763 2173 967 Sulfur ppm ASTM D5185m >20 <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 0 2 2 Calcium ppm ASTM D5185m 60 69 58 Phosphorus ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 419 460 429 Sulfur ppm ASTM D5185m 6763 2173 967 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m		0	0	<1
Calcium ppm ASTM D5185m 60 69 58 Phosphorus ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 419 460 429 Sulfur ppm ASTM D5185m 6763 2173 967 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m		1	0	0
Phosphorus ppm ASTM D5185m 323 349 303 Zinc ppm ASTM D5185m 419 460 429 Sulfur ppm ASTM D5185m 6763 2173 967 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m		0	2	2
Zinc ppm ASTM D5185m 419 460 429 Sulfur ppm ASTM D5185m 6763 2173 967 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1	Calcium	ppm	ASTM D5185m		60	69	58
SulfurppmASTM D5185m67632173967CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>20<1	Phosphorus	ppm	ASTM D5185m		323	349	303
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1	Zinc		ASTM D5185m		419	460	429
Silicon ppm ASTM D5185m >20 <1	Sulfur	ppm	ASTM D5185m		6763	2173	967
Sodium ppm ASTM D5185m 1 0 0 Potassium ppm ASTM D5185m >20 0 0 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 ▲ 6695 ▲ 7339 ▲ 11033 Particles >6µm ASTM D7647 >320 350 ▲ 855 ▲ 926 Particles >14µm ASTM D7647 >80 10 22 16 Particles >21µm ASTM D7647 >20 2 5 3	CONTAMINANTS		method	limit/base	current	history1	history2
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FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 ▲ 6695 ▲ 7339 ▲ 11033 Particles >6µm ASTM D7647 >320 ● 350 ▲ 855 ▲ 926 Particles >14µm ASTM D7647 >80 10 22 16 Particles >21µm ASTM D7647 >20 2 5 3	Sodium	ppm	ASTM D5185m		1	0	0
Particles >4μm ASTM D7647 >1300 6695 7339 11033 Particles >6μm ASTM D7647 >320 350 855 926 Particles >14μm ASTM D7647 >80 10 22 16 Particles >21μm ASTM D7647 >20 2 5 3	Potassium	ppm	ASTM D5185m	>20	0	0	0
Particles >6µm ASTM D7647 >320 350 ▲ 855 ▲ 926 Particles >14µm ASTM D7647 >80 10 22 16 Particles >21µm ASTM D7647 >20 2 5 3	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >80 10 22 16 Particles >21μm ASTM D7647 >20 2 5 3	Particles >4µm		ASTM D7647	>1300	🔺 6695	A 7339	🔺 11033
Particles >21μm ASTM D7647 >20 2 5 3	Particles >6µm		ASTM D7647	>320	<mark> </mark> 350	▲ 855	9 26
	Particles >14µm		ASTM D7647	>80	10	22	16
Particles >38μm ASTM D7647 >4 0 1 0	Particles >21µm		ASTM D7647	>20	2	5	3
	Particles >38µm		ASTM D7647	>4	0	1	0

ASTM D7647 >3

Particles >71µm

Oil Cleanliness

0

ISO 4406 (c) >17/15/13 **20/16/10**

▲ 20/17/12

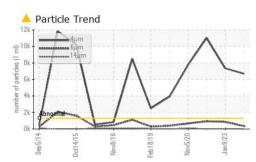
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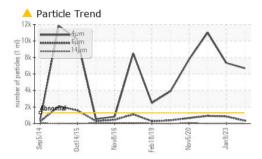
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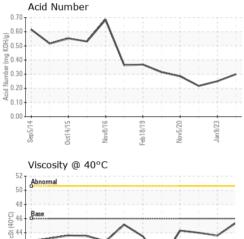
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OIL ANALYSIS REPORT







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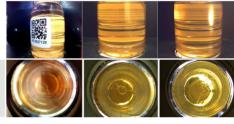
38

Sep5/14

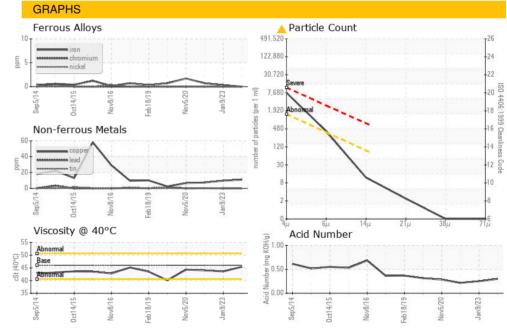
Abnorma 40

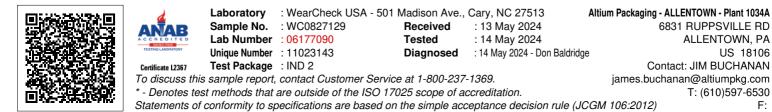
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.30	0.25	0.217
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	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	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46.0	45.4	43.6	44.0
SAMPLE IMAGES	6	method	limit/base	current	history1	history2

Color



Bottom





Report Id: CONALL [WUSCAR] 06177090 (Generated: 05/14/2024 19:11:44) Rev: 1

Nov5/20 -

Jan9/23

Feb 18/19

Nov8/16

Contact/Location: JIM BUCHANAN - CONALL

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