

OIL ANALYSIS REPORT

Sample Rating Trend

VIS DEBRIS

Machine Id

LINE 8 - 69622 (S/N 350RZ-3757)

Hydraulic System

RIDGELINE HYDRAULIC AW 46 (120 GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear

All component wear rates are normal.

Contamination

Moderate concentration of visible dirt/debris present in the oil.

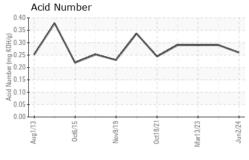
Fluid Condition

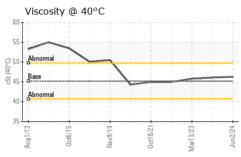
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

		Aug2013	Oct2015 Nov2019	0ct2021 Mar2023	Jun2024	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0937949	WC0880067	WC0790157
Sample Date		Client Info		02 Jun 2024	30 Nov 2023	13 Mar 2023
Machine Age	yrs	Client Info		0	25	0
Oil Age	yrs	Client Info		0	2	2
Oil Changed	7.0	Client Info		N/A	Changed	Filtered
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINATION		method	limit/base		la i a ta un ed	history.O
	V			current	history1	history2
Water		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	0	0	<1
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm	ASTM D5185m	>20	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	0	<1
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>20	6	5	6
Tin	ppm	ASTM D5185m	>20	0	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	<1
ADDITIVES		method	limit/base	current	la la La mud	history2
ADDITIVES		method	IIIIII Dase	Current	history1	HISTOLYZ
Boron	ppm	ASTM D5185m	IIIIII/Dase	0	<1	0
	ppm		IIIIII/Dase			
Boron	• •	ASTM D5185m	IIIIIVVase	0	<1	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	IIIIIIIIII	0 0	<1 0	0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	iiiiii(base	0 0 0	<1 0 0	0 0 <1
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	iiiiii(base	0 0 0 <1	<1 0 0 0	0 0 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	340	0 0 0 <1 <1	<1 0 0 0	0 0 <1 0 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 0 0 <1 <1 42	<1 0 0 0 1 47	0 0 <1 0 <1 44
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	340	0 0 0 <1 <1 42 358	<1 0 0 0 0 1 47 346	0 0 <1 0 <1 44 318
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	340	0 0 0 <1 <1 42 358 337	<1 0 0 0 0 1 47 346 353	0 0 <1 0 <1 44 318 300
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	340 430 710 limit/base	0 0 0 <1 <1 42 358 337 1987	<1 0 0 0 1 47 346 353 1683 history1	0 0 <1 0 <1 44 318 300 1496 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	340 430 710 limit/base	0 0 0 <1 <1 42 358 337 1987 current	<1 0 0 0 1 47 346 353 1683 history1 <1	0 0 <1 0 <1 44 318 300 1496 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	340 430 710 limit/base >15	0 0 0 <1 <1 42 358 337 1987	<1 0 0 0 1 47 346 353 1683 history1	0 0 <1 0 <1 44 318 300 1496 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	340 430 710 limit/base >15	0 0 0 <1 <1 42 358 337 1987 current 1	<1 0 0 0 1 47 346 353 1683 history1 <1 0	0 0 <1 0 <1 44 318 300 1496 history2 1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	340 430 710 limit/base >15 >20 limit/base	0 0 0 <1 <1 42 358 337 1987 current 1 2	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0	0 0 <1 0 <1 44 318 300 1496 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	340 430 710 limit/base >15 >20 limit/base >5000	0 0 0 <1 <1 42 358 337 1987 current 1 2 2	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0 history1 315	0 0 <1 0 <1 44 318 300 1496 history2 1 2 0 history2 223
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	340 430 710 limit/base >15 >20 limit/base >5000 >1300	0 0 0 <1 <1 42 358 337 1987 current 1 2 2	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0 history1 315 85	0 0 <1 0 <1 0 <1 44 318 300 1496 history2 1 2 0 history2 223 63
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D7647 ASTM D7647	340 430 710 limit/base >15 >20 limit/base >5000 >1300 >160	0 0 0 <1 <1 42 358 337 1987 current 1 2 2 current	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0 history1 315 85 13	0 0 <1 0 <1 0 <1 44 318 300 1496 history2 1 2 0 history2 223 63 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	340 430 710 limit/base >15 >20 limit/base >5000 >1300 >160 >40	0 0 0 < 1 42 358 337 1987 current 1 2 2 current	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0 history1 315 85 13 5	0 0 <1 0 <1 0 <1 44 318 300 1496 history2 1 2 0 history2 223 63 9 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	340 430 710 limit/base >15 >20 limit/base >5000 >1300 >160 >40 >10	0 0 0 0 41 42 358 337 1987 current 1 2 2 current	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0 history1 315 85 13 5 1	0 0 <1 0 <1 0 <1 44 318 300 1496 history2 1 2 0 history2 223 63 9 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	340 430 710 limit/base >15 >20 limit/base >5000 >1300 >160 >40	0 0 0 < 1 42 358 337 1987 current 1 2 2 current	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0 history1 315 85 13 5	0 0 <1 0 <1 0 <1 44 318 300 1496 history2 1 2 0 history2 223 63 9 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	340 430 710 limit/base >15 >20 limit/base >5000 >1300 >160 >40 >10 >3	0 0 0	<1 0 0 0 1 47 346 353 1683 history1 <1 0 0 history1 315 85 13 5 1	0 0 <1 0 <1 0 <1 44 318 300 1496 history2 1 2 0 history2 223 63 9 4 1 0



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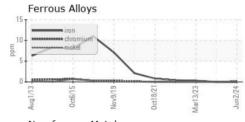


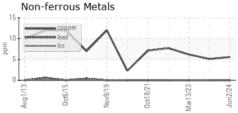


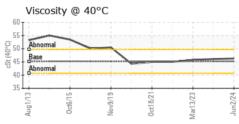
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	▲ MODER	NONE	NONE
Sand/Dirt	scalar	*Visual	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	45.22	46.3	46.1	45.8
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				a.	37	TO SW

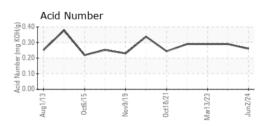


Bottom













Certificate 12367

Laboratory

Sample No. Lab Number : 06218156 Unique Number : 11096353

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0937949

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

Tested Diagnosed Test Package : IND 2

Received : 24 Jun 2024 : 25 Jun 2024 : 25 Jun 2024 - Don Baldridge

MOORHEAD, MN US 56560 Contact: DAVID SCHULTZ David.Schultz@altiumpkg.com T: (218)303-7759

1802 2ND AVE NORTH

Altium Packaging - MOORHEAD - Plant 1061A

* - 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)

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