

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

6157 - SUPERIOR PLUS ENERGY

Hydraulic System

AW HYDRAULIC OIL ISO 32 (--- 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.

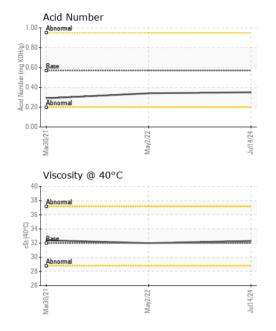
Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

	May2021 May2022 Jul2024							
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		WC0911766	WC0648694	WC0516874		
Sample Date		Client Info		14 Jul 2024	02 May 2022	30 Mar 2021		
Machine Age	hrs	Client Info		0	0	0		
Oil Age	hrs	Client Info		0	0	0		
Oil Changed		Client Info		N/A	N/A	N/A		
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL		
CONTAMINATION	V	method	limit/base	current	history1	history2		
Water		WC Method	>0.1	NEG	NEG	NEG		
WEAR METALS		method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>20	3	2	2		
Chromium	ppm	ASTM D5185m	>10	<1	0	<1		
Nickel	ppm	ASTM D5185m	>10	<1	0	<1		
Titanium	ppm	ASTM D5185m		<1	0	<1		
Silver	ppm	ASTM D5185m		0	0	<1		
Aluminum	ppm	ASTM D5185m	>10	2	3	3		
Lead	ppm	ASTM D5185m	>10	<1	0	1		
Copper	ppm	ASTM D5185m	>75	2	2	2		
Tin	ppm	ASTM D5185m	>10	<1	0	<1		
Antimony	ppm	ASTM D5185m				<1		
Vanadium	ppm	ASTM D5185m		0	0	0		
0								
Cadmium	ppm	ASTM D5185m		<1	0	0		
ADDITIVES	ppm	ASTM D5185m method	limit/base	<1 current	0 history1	0 history2		
ADDITIVES	ppm		limit/base					
ADDITIVES Boron		method		current	history1	history2		
ADDITIVES Boron Barium	ppm	method ASTM D5185m	5	current 1	history1	history2		
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m	5 5	current 1 0	history1 4 0	history2 6 0		
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	5 5	current 1 0 1	history1 4 0 0	history2 6 0 <1		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5	current 1 0 1	history1 4 0 0 0	history2 6 0 <1 0		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 25	current 1 0 1 0 35	history1 4 0 0 0 0	history2 6 0 <1 0 3		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 25 200	current 1 0 1 0 35 73	history1 4 0 0 0 114	history2 6 0 <1 0 3 73		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	5 5 5 25 200 300	current 1 0 1 0 35 73 251	history1 4 0 0 0 0 114 272	history2 6 0 <1 0 3 73 270		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	5 5 5 25 200 300 370	current 1 0 1 0 35 73 251 319	history1 4 0 0 0 0 114 272 258	history2 6 0 <1 0 3 73 270 273		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base	current 1 0 1 0 35 73 251 319 682	history1 4 0 0 0 0 114 272 258 792	history2 6 0 <1 0 3 73 270 273 814		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base	current 1 0 1 0 35 73 251 319 682 current	history1 4 0 0 0 0 114 272 258 792 history1	history2 6 0 <1 0 3 73 270 273 814 history2		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base >20	current 1 0 1 0 35 73 251 319 682 current	history1 4 0 0 0 0 114 272 258 792 history1 <1	history2 6 0 <1 0 3 73 270 273 814 history2 8		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base >20	current 1 0 1 0 35 73 251 319 682 current 1	history1 4 0 0 0 0 114 272 258 792 history1 <1 0	history2 6 0 <1 0 3 73 270 273 814 history2 8 <1		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base >20	current 1 0 1 0 35 73 251 319 682 current 1 0 1	history1 4 0 0 0 0 114 272 258 792 history1 <1 0	history2 6 0 <1 0 3 73 270 273 814 history2 8 <1 <1		
ADDITIVES 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	method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base >20 >20	current 1 0 1 0 35 73 251 319 682 current 1 0 1	history1 4 0 0 0 0 114 272 258 792 history1 <1 0 history1	history2 6 0 <1 0 3 73 270 273 814 history2 8 <1 <1 history2		
ADDITIVES 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	method ASTM D5185m method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base >20 limit/base >5000	current 1 0 1 0 35 73 251 319 682 current 1 0 1 current	history1 4 0 0 0 0 0 114 272 258 792 history1 <1 0 0 history1 ▲ 56945	history2 6 0 <1 0 3 73 270 273 814 history2 8 <1 <1 history2 ▲ 56377		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m	5 5 5 25 200 300 370 2500 limit/base >20 >20 limit/base >5000 >1300	current 1 0 1 0 35 73 251 319 682 current 1 0 1 current	history1 4 0 0 0 0 0 114 272 258 792 history1 <1 0 0 history1 ▲ 56945 ▲ 3943	history2 6 0 <1 0 3 73 270 273 814 history2 8 <1 <1 history2 △ 56377 △ 2976		
ADDITIVES 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	method ASTM D5185m method ASTM D5185m ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 limit/base >20 >20 limit/base >5000 >1300 >160	current 1 0 1 0 35 73 251 319 682 current 1 0 1 current	history1 4 0 0 0 0 114 272 258 792 history1 <1 0 0 history1 △ 56945 △ 3943 66	history2 6 0 <1 0 3 73 270 273 814 history2 8 <1 <1 history2 △ 56377 △ 2976 135		
ADDITIVES 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	method ASTM D5185m method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 limit/base >20 >20 limit/base >5000 >1300 >160 >40 >10	current 1 0 1 0 35 73 251 319 682 current 1 0 1 current	history1 4 0 0 0 0 114 272 258 792 history1 <1 0 0 history1 ▲ 56945 ▲ 3943 66 13	history2 6 0 <1 0 3 73 270 273 814 history2 8 <1 <1 <1 history2 ▲ 56377 ▲ 2976 135 39		

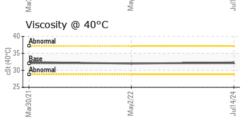


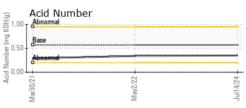
OIL ANALYSIS REPORT



ELLUD DE COLOUE						
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.57	0.35	0.34	0.290
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	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	32.3	32.0	32.4
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						

GRAPHS Ferrous Alloys Non-ferrous Metals









Certificate 12367

Laboratory

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : WC0911766 Lab Number : 06235880

Bottom

Received : 15 Jul 2024 Tested

: 16 Jul 2024

Unique Number : 11124714 Diagnosed : 16 Jul 2024 - Don Baldridge Test Package : CONST

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)

PALFINGER - BRANCH 400 4151 W ST RT 18

TIFFIN, OH US 44883 Contact: ERIC HILL e.hill@palfinger.com T: (419)448-8156

F: Contact/Location: ERIC HILL - PALTIF