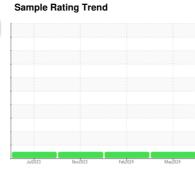


OIL ANALYSIS REPORT







HEB MLU3 Component Inboard Pump Fluid

{not provided} (--- GAL)

DIAGNOSIS

Machine Id

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The water content is negligible. There is no indication of any contamination in the oil.

Fluid Condition

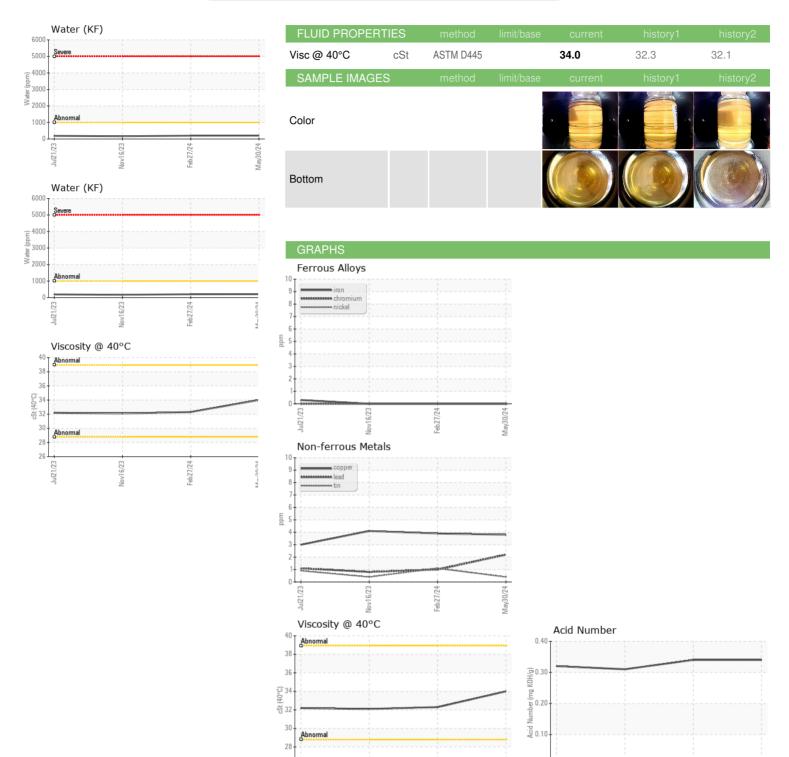
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sample Number			Jul2023	3 Nov2023	Feb 2024 M	ay2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		RP0036067	RP0039990	RP0036153
Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changel Client Info N/A N/A N/A Sample Status Curlent NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 0 0 0 Chromium ppm ASTM D5185m >5 0 0 0 Nikel ppm ASTM D5185m >3 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >12 2 1 <1 <1 Lead ppm ASTM D5185m >30 4 4 4 4 4 4 4 4 1 <1 <1 <1 <1 <1 <1 <1			Client Info		30 May 2024	27 Feb 2024	16 Nov 2023
Oil Age hrs Client Info N/A N/A N/A N/A Oil Changed Client Info N/A N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >5 0 0 0 Chromium ppm ASTM D5185m >5 0 0 0 Nickel ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Caper ppm ASTM D5185m >9 <1		hrs			-		
Oil Changed Status Client Info N/A N/A N/A N/A N/A N/A SAMAL NORMAL NORMAL <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
NORMAL NORMAL NORMAL NORMAL	•						
Iron							
Chromium ppm ASTM D5185m >5 0 0 0 Nickel ppm ASTM D5185m >5 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >7 0 0 0 Lead ppm ASTM D5185m >12 2 1 <1 <1 Copper ppm ASTM D5185m >30 4 4 4 4 Tin ppm ASTM D5185m >9 <1 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <t< th=""><th>WEAR METALS</th><th></th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></t<>	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>90	0	0	0
Titanium ppm ASTM D5185m >3 0 0 <1	Chromium	ppm	ASTM D5185m	>5	0	0	0
Silver	Nickel	ppm	ASTM D5185m	>5	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m	>3	0	0	<1
Lead ppm ASTM D5185m >12 2 1 <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Lead	Aluminum		ASTM D5185m	>7	0	0	0
Copper ppm ASTM D5185m >30 4 4 4 4 Tin ppm ASTM D5185m >9 <1 1 <1 Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m <1 0 0 Phosphorus ppm ASTM D5185m 3 <1 0 Zinc ppm ASTM D5185m 3 <1 0 Silicon ppm ASTM D5185m 2 0 3	Lead		ASTM D5185m	>12	2	1	<1
Tin ppm ASTM D5185m >9 <1	Copper		ASTM D5185m	>30	4	4	4
Vanadium ppm ASTM D5185m <1			ASTM D5185m	>9	<1	1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 76 79 59 Calcium ppm ASTM D5185m 41 0 0 Phosphorus ppm ASTM D5185m 3 <1 0 Zinc ppm ASTM D5185m 3 <1 0 Zinc ppm ASTM D5185m 19 14 8 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 2 0 3 Potassium ppm ASTM D5185m 2 0 3	Vanadium		ASTM D5185m		<1	0	<1
Boron			ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 76 79 59 Calcium ppm ASTM D5185m <1 0 0 Phosphorus ppm ASTM D5185m 3 <1 0 Zinc ppm ASTM D5185m 19 14 8 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >60 <1 0 <1 Sodium ppm ASTM D5185m >20 0 0 <1 Sodium ppm ASTM D5185m >20 0 0 <1 Sodium ppm ASTM D5185m >20 0 0 <0 Water % ASTM D5185m <td< th=""><th>ADDITIVES</th><th></th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 76 79 59 Calcium ppm ASTM D5185m <1 0 0 Phosphorus ppm ASTM D5185m 3 <1 0 Zinc ppm ASTM D5185m 19 14 8 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >60 <1 0 <1 Sodium ppm ASTM D5185m >20 0 0 0 Vater % ASTM D5185m >20 0 0 0 Water % ASTM D6304 >.1 0.020 0.020 0.016 Potassium ppm ASTM D6304 >.1 0.020 0.020 0.016 Potassium ppm ASTM D6304 >.1 0.020 0.020 0.016 Potassium ppm ASTM D6304 <t< th=""><th>Molybdenum</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th>0</th><th>0</th></t<>	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium ppm ASTM D5185m <1	Manganese	ppm	ASTM D5185m		<1	<1	0
Phosphorus ppm ASTM D5185m 3 <1	Magnesium	ppm	ASTM D5185m		76	79	59
Zinc ppm ASTM D5185m 19 14 8 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >60 <1 0 <1 Sodium ppm ASTM D5185m 2 0 3 Potassium ppm ASTM D5185m >20 0 0 0 Water % ASTM D6304 >.1 0.020 0.020 0.016 ppm Water ppm ASTM D6304 >.1000 205 203 167 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg K0Hlg ASTM D8045 0.34 0.34 0.31 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual </th <th>Calcium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th><1</th> <th>0</th> <th>0</th>	Calcium	ppm	ASTM D5185m		<1	0	0
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >60 <1 0 <1 Sodium ppm ASTM D5185m 2 0 3 Potassium ppm ASTM D5185m >20 0 0 0 Water % ASTM D6304 >.1 0.020 0.020 0.016 ppm Water ppm ASTM D6304 >.1000 205 203 167 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg K0Hlg ASTM D8045 0.34 0.34 0.31 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE VYISUAL NONE NONE NONE NONE NONE VYISUAL NONE NONE	Phosphorus	ppm	ASTM D5185m		3	<1	0
Silicon ppm ASTM D5185m >60 <1	Zinc	ppm	ASTM D5185m		19	14	8
Sodium ppm ASTM D5185m 2 0 3 Potassium ppm ASTM D5185m >20 0 0 0 0 Water % ASTM D6304 >.1 0.020 0.020 0.016 ppm Water ppm ASTM D6304 >1000 205 203 167 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.34 0.34 0.31 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 0 0 0 Water % ASTM D6304 >.1 0.020 0.020 0.016 ppm Water ppm ASTM D6304 >1000 205 203 167 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.34 0.34 0.31 VISUAL method limit/base current history1 history2 White Metal scalar *Visual 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 Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual 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 NORML NORML NORML NORML NORML NORML NORML	Silicon	ppm	ASTM D5185m	>60	<1	0	<1
Water	Sodium	ppm	ASTM D5185m		2	0	3
ppm Water ppm ASTM D6304 >1000 205 203 167 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.34 0.34 0.31 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 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	Potassium	ppm	ASTM D5185m	>20	0	0	0
FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.34 0.34 0.31 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 NORML	Water	%	ASTM D6304	>.1	0.020	0.020	0.016
Acid Number (AN) mg KOH/g ASTM D8045 0.34 0.34 0.31 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	ppm Water	ppm	ASTM D6304	>1000	205	203	167
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 LIGHT NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML	FLUID DEGRADA	TION	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 LIGHT NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML	Acid Number (AN)	mg KOH/g	ASTM D8045		0.34	0.34	0.31
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONELIGHTNONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	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 LIGHT NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML	White Metal	scalar	*Visual	NONE	NONE	NONE	
Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML	Yellow Metal		*Visual	NONE	NONE		NONE
Debrisscalar*VisualNONENONELIGHTNONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Debris	scalar	*Visual	NONE	NONE	LIGHT	NONE
Odor scalar *Visual NORML NORML NORML NORML	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water scalar *Visual >.1 NEG NEG NEG	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>.1	NEG	NEG	NEG

n: Service Managery ENEHEB



OIL ANALYSIS REPORT







Certificate 12367

Laboratory Sample No.

: RP0036067 Lab Number : 06202844 Unique Number : 11070305

Test Package : IND 2

26

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 07 Jun 2024 **Tested** : 11 Jun 2024

Diagnosed : 11 Jun 2024 - Jonathan Hester

0.00

ENERGY TRANSFER - HEBRON

HEBRON, KY US 41048

Contact: Service Manager

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)

T:

F: