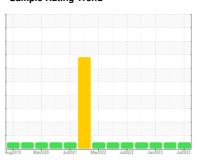


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



LIM4_U43 LIM4_U43_M43

Lube System

ROYAL PURPLE SYNFILM GT 32 (15 GAL)

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

Fluid Condition

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

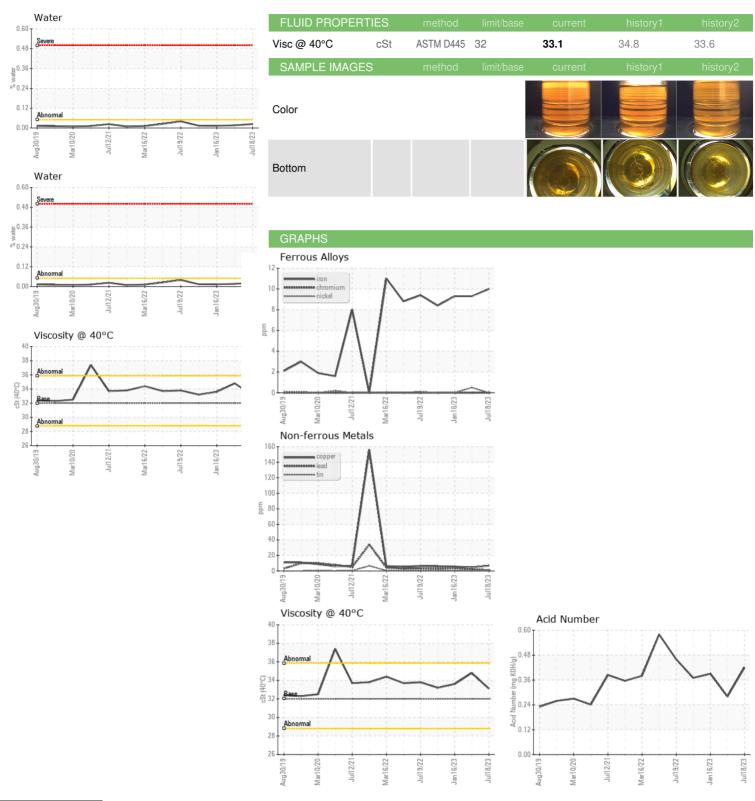
Sample Number			Aug2019	Mar2020 Jul2021	Mar2022 Jul2022 Jan2023	Jul2023	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs	Sample Number		Client Info		RP0021256	RP0029442	RP0021690
Machine Age hrs	Sample Date		Client Info		18 Jul 2023	18 May 2023	16 Jan 2023
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 method limit/base current historyt history2 Iron ppm ASTM D5185m >20 10 9 9 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 <1 <1 <1 Lead ppm ASTM D5185m >20 <1 <2 <4 6 Copper ppm ASTM D5185m >20 <1 <2 <4 6 Tin ppm ASTM D5185m >20 <1 0 0 Cadmium ppm ASTM D5185m 0 <t< td=""><td></td><td>hrs</td><td>Client Info</td><td></td><th>0</th><td></td><td>0</td></t<>		hrs	Client Info		0		0
Oil Changed Sample Status Client Info N/A N/A N/A N/A N/A N/A N/A N/A NORMAL NORMAL<	•	hrs	Client Info		0	0	0
NORMAL NORMAL NORMAL NORMAL			Client Info			N/A	N/A
Iron					NORMAL	NORMAL	NORMAL
Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 <1 0 Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >20 <1 <1 <1 Lead ppm ASTM D5185m >20 <1 2 4 Copper ppm ASTM D5185m >20 <1 2 4 Copper ppm ASTM D5185m >20 <1 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Magnes	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >20 0 <1 0 Titanium ppm ASTM D5185m 0 0 0 0 Siliver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >20 <1	Iron	ppm	ASTM D5185m	>20	10	9	9
Description	Chromium	ppm	ASTM D5185m	>20	0	0	0
Silver	Nickel	ppm	ASTM D5185m	>20	0	<1	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >20 <1 <1 <1 Lead ppm ASTM D5185m >20 <1 2 4 Copper ppm ASTM D5185m >20 <1 0 <1 Tin ppm ASTM D5185m >20 <1 0 <1 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 0 0 Barium ppm ASTM D5185m 0 0 0 0 Magnaese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 4 84 85 87 <t< td=""><td>Titanium</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td>0</td><td>0</td></t<>	Titanium	ppm	ASTM D5185m		0	0	0
Aluminum	Silver	ppm	ASTM D5185m		0	0	0
Copper ppm ASTM D5185m >20 7 4 6 Tin ppm ASTM D5185m >20 <1	Aluminum	ppm	ASTM D5185m	>20	<1	<1	<1
Copper ppm ASTM D5185m >20 7 4 6 Tin ppm ASTM D5185m >20 <1	Lead		ASTM D5185m	>20	<1	2	4
Tin							
Vanadium 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 Manganese ppm ASTM D5185m <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 Manganese ppm ASTM D5185m -1 <1	Vanadium						
Boron ppm ASTM D5185m 0							
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 84 85 87 Calcium ppm ASTM D5185m 6 5 4 Phosphorus ppm ASTM D5185m 1 4 27 Zinc ppm ASTM D5185m 0 0 0 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 <1 <1 Sodium ppm ASTM D5185m >15 <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	Boron	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m <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 <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 <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 <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m <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 <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 <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 <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Molybdenum	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 84 85 87 Calcium ppm ASTM D5185m 6 5 4 Phosphorus ppm ASTM D5185m 1 4 27 Zinc ppm ASTM D5185m 0 0 <1			ASTM D5185m		<1	<1	<1
Calcium ppm ASTM D5185m 6 5 4 Phosphorus ppm ASTM D5185m 1 4 27 Zinc ppm ASTM D5185m 0 0 <1	Magnesium	ppm	ASTM D5185m		84	85	87
Phosphorus ppm ASTM D5185m 1 4 27 Zinc ppm ASTM D5185m 0 0 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	-		ASTM D5185m		6	5	4
Zinc ppm ASTM D5185m 0 0 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Phosphorus	ppm	ASTM D5185m		1	4	27
Silicon ppm ASTM D5185m >15 <1 <1 <1 Sodium ppm ASTM D5185m 1 1 1 <1 Potassium ppm ASTM D5185m >20 0 2 0 Water % ASTM D6304 >0.05 0.024 0.016 0.013 ppm Water ppm ASTM D6304 >500 244.2 166.3 133.0 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.42 0.28 0.39 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual					0	0	<1
Sodium ppm ASTM D5185m 1 1 <1	CONTAMINANTS	5	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 2 0 Water % ASTM D6304 >0.05 0.024 0.016 0.013 ppm Water ppm ASTM D6304 >500 244.2 166.3 133.0 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.42 0.28 0.39 VISUAL method limit/base current history1 history2 White Metal scalar *Visual 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 <td< td=""><td>Silicon</td><td>ppm</td><td>ASTM D5185m</td><td>>15</td><th><1</th><td><1</td><td><1</td></td<>	Silicon	ppm	ASTM D5185m	>15	<1	<1	<1
Water % ASTM D6304 >0.05 0.024 0.016 0.013 ppm Water ppm ASTM D6304 >500 244.2 166.3 133.0 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.42 0.28 0.39 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML	Sodium	ppm	ASTM D5185m		1	1	<1
ppm Water ppm ASTM D6304 >500 244.2 166.3 133.0 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.42 0.28 0.39 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 NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML NORML	Potassium	ppm	ASTM D5185m	>20	0	2	0
FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.42 0.28 0.39 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 Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE 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	Water		ASTM D6304	>0.05	0.024	0.016	0.013
Acid Number (AN) mg KOH/g ASTM D8045 0.42 0.28 0.39 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	>500	244.2	166.3	133.0
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	FLUID DEGRADA	NOITA	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	Acid Number (AN)	mg KOH/g	ASTM D8045		0.42	0.28	0.39
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/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 NONE 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 NONE 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	scalar	*Visual	NONE	NONE	NONE	
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORML	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORML	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar			NEG	NEG	

NDREW WYDERKAJEGNELIM

NEG



OIL ANALYSIS REPORT





Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : IND 2

: RP0021256 : 05903828 : 10565184

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 20 Jul 2023

: 24 Jul 2023 Diagnosed Diagnostician : Don Baldridge

ENERGY TRANSFER - LIMA

1520 BUCKEYE RD LIMA, OH US 45804

T: (419)618-1505

Contact: ANDREW WYDERKA

andrew.wyderka@energytransfer.com

* - 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)

F: