

# **OIL ANALYSIS REPORT**

### Sample Rating Trend







# P3121 P3121

Component

**Outboard Bearing** 

**ROYAL PURPLE SYNFILM 32 (--- 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 Date	Jun2023 Jun2023 Nov2023						
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   0   0   0   0   0   0   0   0   0	Sample Number		Client Info		RP0032222	RP0027029	RP0027037
Oil Age         hrs         Client Info         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         method         Imilibase         current         history1         history1           WEAR METALS         method         Imilibase         current         history1         history2           Iron         ppm         ASTM D5185m         20         0         -1         0           Chromium         ppm         ASTM D5185m         20         0         -1         -1           Nickel         ppm         ASTM D5185m         20         0         -1         -1           Silver         ppm         ASTM D5185m         >20         0         0         0           All Lead         ppm         ASTM D5185m         >20         0         -1         0           Copper         ppm         ASTM D5185m         >20         0         -1         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Coadmium         ppm         ASTM D5185m         0         0         0         0	Sample Date		Client Info		18 Nov 2023	21 Jun 2023	20 Jun 2023
Client Info	Machine Age	hrs	Client Info		0	0	0
MORMAL   ABNORMAL   NORMAL   WEAR METALS   method   limit/base   current   history1   history2	Oil Age	hrs	Client Info		0	0	0
MORMAL   ABNORMAL   NORMAL   NORMAL   WEAR METALS   method   limil/base   current   history1   history2   history2   history2   history2   history2   history2   history2   history2   history2   history3   history4   history5   h	Oil Changed		Client Info		N/A	N/A	N/A
Chromium	Sample Status				NORMAL	ABNORMAL	NORMAL
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>20	0	0	0
Description	Chromium	ppm	ASTM D5185m	>20	0	<1	0
Silver	Nickel	ppm	ASTM D5185m	>20	0	<1	<1
Aluminum   ppm   ASTM D5185m   >20   0   0   1   Lead   ppm   ASTM D5185m   >20   5   12   <1   Copper   ppm   ASTM D5185m   >20   0   <1   0   Vanadium   ppm   ASTM D5185m   >20   0   <1   0   Vanadium   ppm   ASTM D5185m   >20   0   <1   0   Vanadium   ppm   ASTM D5185m   >20   0   0   0   Cadmium   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   Molybdenum   ppm   ASTM D5185m   0   <1   0   Manganese   ppm   ASTM D5185m   0   <1   <1   0   Manganese   ppm   ASTM D5185m   0   <1   <1   <1   Manganesium   ppm   ASTM D5185m   2   1   <1   Manganese   ppm   ASTM D5185m   2   1   <1   Manganese   ppm   ASTM D5185m   2   1   <1   Manganesium   ppm   ASTM D5185m   0   1   <1	Titanium	ppm	ASTM D5185m		0	0	0
Lead         ppm         ASTM D5185m         >20         5         12         <1           Copper         ppm         ASTM D5185m         >20         0         <1	Silver	ppm	ASTM D5185m		0	0	0
Copper         ppm         ASTM D5185m         >20         0         <1         0           Tin         ppm         ASTM D5185m         >20         0         <1	Aluminum	ppm	ASTM D5185m	>20	0	0	<1
Tin	Lead	ppm	ASTM D5185m	>20	5	12	<1
Tin	Copper		ASTM D5185m	>20	0	<1	0
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         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           Molybdenum         ppm         ASTM D5185m         0         <1         0           Manganese         ppm         ASTM D5185m         0         <1         <1           Magnesium         ppm         ASTM D5185m         2         1         <1         <1           Magnesium         ppm         ASTM D5185m         2         1         <1         <1            Phosphorus         ppm         ASTM D5185m         1         8         3         3         Z2         1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1 <t< td=""><td>Tin</td><td></td><td></td><td></td><th></th><td></td><td></td></t<>	Tin						
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         <1         0         0           Molybdenum         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         0         <1         <1         0           Magnesium         ppm         ASTM D5185m         90         104         9         85           Calcium         ppm         ASTM D5185m         2         1         <1         1           Phosphorus         ppm         ASTM D5185m         2         1         <1         8         3           Zinc         ppm         ASTM D5185m         0         0         0         0         0           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         3	Vanadium		ASTM D5185m			0	0
Boron   ppm   ASTM D5185m   0   0   0   0   0   0   0   0   0	Cadmium						0
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         0         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         <1         0           Manganese         ppm         ASTM D5185m         0         <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese         ppm         ASTM D5185m         0         <1         <1           Magnesium         ppm         ASTM D5185m         90         104         9         85           Calcium         ppm         ASTM D5185m         2         1         <1	Barium	ppm	ASTM D5185m		0	0	0
Manganese         ppm         ASTM D5185m         0         <1         <1           Magnesium         ppm         ASTM D5185m         90         104         9         85           Calcium         ppm         ASTM D5185m         2         1         <1	Molybdenum	ppm	ASTM D5185m		0	<1	0
Magnesium         ppm         ASTM D5185m         90         104         9         85           Calcium         ppm         ASTM D5185m         2         1         <1           Phosphorus         ppm         ASTM D5185m         1         8         3           Zinc         ppm         ASTM D5185m         0         0         0           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         3         28         <1           Sodium         ppm         ASTM D5185m         >15         3         28         <1           Sodium         ppm         ASTM D5185m         >20         0         2         2           Water         %         ASTM D5185m         >20         0         0         2         2           Water	-	ppm	ASTM D5185m		0	<1	<1
Calcium         ppm         ASTM D5185m         2         1         <1           Phosphorus         ppm         ASTM D5185m         1         8         3           Zinc         ppm         ASTM D5185m         0         0         0           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         3         ▲ 28         <1	-		ASTM D5185m	90	104	9	85
Phosphorus         ppm         ASTM D5185m         1         8         3           Zinc         ppm         ASTM D5185m         0         0         0           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         3         ▲ 28         <1           Sodium         ppm         ASTM D5185m         0         <1         1           Potassium         ppm         ASTM D5185m         20         0         2         2           Water         %         ASTM D6304         >2         0.008         0.157         0.021           ppm Water         ppm         ASTM D6304         83.1         1570         216.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.30         0.17         0.32           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE <td>Calcium</td> <td></td> <td>ASTM D5185m</td> <td></td> <th>2</th> <td>1</td> <td>&lt;1</td>	Calcium		ASTM D5185m		2	1	<1
Zinc         ppm         ASTM D5185m         0         0         0           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         3         ▲ 28         <1           Sodium         ppm         ASTM D5185m         >0         <1         1           Potassium         ppm         ASTM D5185m         >20         0         2         2           Water         %         ASTM D6304         >2         0.008         0.157         0.021           ppm Water         ppm         ASTM D6304         >2         0.008         0.157         0.021           ppm Water         ppm         ASTM D6304         >2         0.008         0.157         0.021           ppm Water         ppm         ASTM D6304         83.1         1570         216.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg K0H/g         ASTM D8045         0.30         0.17         0.32           VISUAL         method         limit/base         current         history1	Phosphorus	ppm	ASTM D5185m		1	8	3
Silicon	Zinc		ASTM D5185m		0	0	0
Sodium	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         0         2         2           Water         %         ASTM D6304         >2         0.008         0.157         0.021           ppm Water         ppm         ASTM D6304         83.1         1570         216.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Acid Number (AN)         mg KOH/g         ASTM D8045         0.30         0.17         0.32           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           Silt         scalar         *Visual         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NORML         NORML         NORML         NORML <td>Silicon</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;15</td> <th>3</th> <td><u>^</u> 28</td> <td>&lt;1</td>	Silicon	ppm	ASTM D5185m	>15	3	<u>^</u> 28	<1
Water % ASTM D6304 >2 0.008 0.157 0.021 ppm Water ppm ASTM D6304 83.1 1570 216.2  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.30 0.17 0.32  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  Debris scalar *Visual NONE NONE NONE NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML NORML	Sodium	ppm	ASTM D5185m		0	<1	1
ppm Water ppm ASTM D6304 83.1 1570 216.2  FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.30 0.17 0.32  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 NONE  Sand/Dirt scalar *Visual NONE NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML NORML NORML  Odor scalar *Visual NORML NORML NORML NORML NORML	Potassium	ppm	ASTM D5185m	>20	0	2	2
FLUID DEGRADATION method limit/base current history1 history2  Acid Number (AN) mg KOH/g ASTM D8045 0.30 0.17 0.32  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 LIGHT MODER 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	Water	%	ASTM D6304	>2	0.008	0.157	0.021
Acid Number (AN) mg KOH/g ASTM D8045 0.30 0.17 0.32  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 LIGHT MODER 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	ppm Water	ppm	ASTM D6304		83.1	1570	216.2
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       NORML       NORML       NORML       NORML       NORML         Odor       scalar       *Visual       NORML       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 LIGHT MODER 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		0.30	0.17	0.32
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     LIGHT     MODER     NONE       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORML     NORML     NORML     NORML     NORML     NORML	VISUAL		method	limit/base	current	history1	history2
Precipitate       scalar       *Visual       NONE       NORML	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     LIGHT     ▲ MODER     NONE       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORML     NORML     NORML     NORML     NORML	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Debris     scalar     *Visual     NONE     LIGHT     ▲ MODER     NONE       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORML     NORML     NORML     NORML     NORML	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORML	Debris	scalar	*Visual	NONE	LIGHT	▲ MODER	NONE
Odor scalar *Visual NORML NORML NORML NORML	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	>2	NEG	0.2%	NEG

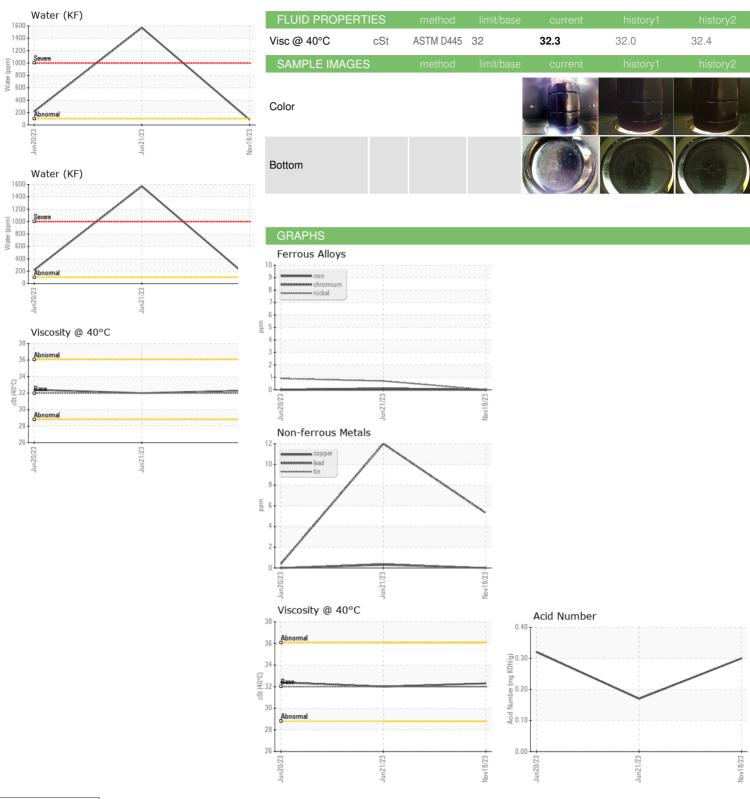
NEG

scalar \*Visual

n: SNEWGe Manager NEWEWAT



## **OIL ANALYSIS REPORT**







Laboratory Sample No. Lab Number Unique Number : 10750120

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : RP0032222

: 06010976

Received Diagnosed Diagnostician : Don Baldridge Test Package : IND 2 ( Additional Tests: PrtCount )

: 17 Nov 2023 : 21 Nov 2023

**ENERGY TRANSFER - WATFORD CITY** 12644 24TH ST NW WATFORD CITY, ND

US 58854

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)

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F: