



RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

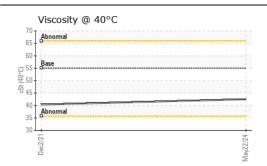
There is no indication of any contamination in the oil.

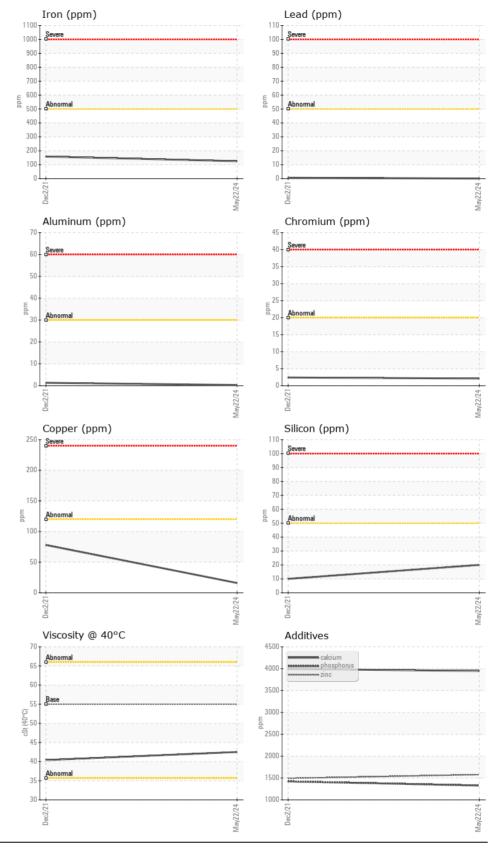
FLUID CONDITION

The condition of the oil is acceptable for the time in service.

TestUOMMethodLimit/AnCurrentHistory1History2Sample NumberClient InfoVCP447755VCP341546Sample DateClient Info22 May 202402 Dec 2021Machine AgehrsClient Info00Filter AgehrsClient Info00Filter AgehrsClient InfoChangedChangedGli ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedNot ChangedSample StatusNORMALNORMALNickelppmASTM D5185m>500125158NickelppmASTM D5185m>10<-1NickelppmASTM D5185m>500<11AluminumppmASTM D5185m>500<11AluminumppmASTM D5185m>500<-1VanadiumppmASTM D5185m>500<-1VanadiumppmASTM D5185m>502010Vellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>200<-1VanadiumppmASTM D5185m>200<-1VanadiumppmASTM D5185m>200<-1Vanadium							
Sample DateClient Info2 May 20202 Dec 202Machine AgehrsClient Info92906332Oil AgehrsClient Info00Filter AgehrsClient InfoCChangedChangedOil ChangedClient InfoCChangedMc ChangedFilter ChangedClient InfoCChangedNot ChangedSample StatusClient InfoCChangedNot ChangedIronppmASTM D5185>500125158NickelppmASTM D5185>100-1NickelppmASTM D5185>500SilverppmASTM D5185>500AluminumppmASTM D5185>500LeadppmASTM D5185>500VanadiumppmASTM D5185>2016VanadiumppmASTM D5185>200ValenceworkNONENONENONESiliconppmASTM D5185>502010ValadiumppmASTM D5185>200ValadiumppmASTM D5185>200ValadiumppmASTM D5185>502010-	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient Into92906332Oil AgehrsClient Into00Filter AgehrsClient IntoChangedChangedOil ChangedClient IntoChangedNot ChangedFilter ChangedQClient IntoChangedNot ChangedSample StatusVVorticeNORMALIronppmASTM D5185m>500125158NickelppmASTM D5185m>100NickelppmASTM D5185m>30C11SilverppmASTM D5185m>30c11AluminumppmASTM D5185m>5000VanadiumppmASTM D5185m>50010VanadiumppmASTM D5185m>50010VanadiumppmASTM D5185m>50010VanadiumppmASTM D5185m>500100VanadiumppmASTM D5185m5000VanadiumppmASTM D5185m5000VanadiumppmASTM D5185m5000VanadiumppmASTM D5185m5000SiliconppmASTM D5185m5000	Sample Number		Client Info		VCP447755	VCP341546	
Oil AgehrsClient Info00Filter AgehrsClient Info00Oil ChangedClient InfoChangedChangedFilter Changed0Client InfoChangedNot ChangedSample StatusVorter InfoNorter InfoNorter InfoNorter InfoNorter InfoIronppmASTM D5185m5500125158IronppmASTM D5185m50022NickelppmASTM D5185m5000<1TitaniumppmASTM D5185m5000<1AluminumppmASTM D5185m5000<1LeadppmASTM D5185m5000<1CopperppmASTM D5185m5000<1VanduimppmASTM D5185m5000<1White Metalscalar"VisualNONENONENONESiliconppmASTM D5185m5000<1SiliconppmASTM D5185m5000<1SiliconppmASTM D5185m5000<1SiliconppmASTM D5185m5000<1SiliconppmASTM D5185m5000<1SiliconppmASTM D5185m5000<1	Sample Date		Client Info		22 May 2024	02 Dec 2021	
Filter Age Oil ChangedClient Info00Oil ChangedClient InfoChangedChangedFilter ChangedQClient InfoChangedNot ChangedSample StatusNORMALNORMALIronppmASTM D5185m>500125158ChromiumppmASTM D5185m>100<1NickelppmASTM D5185m>100<1NickelppmASTM D5185m>100<1SilverppmASTM D5185m>30<11AluminumppmASTM D5185m>500<1AluminumppmASTM D5185m>2025VanadiumppmASTM D5185m>2025VanadiumppmASTM D5185m>202010VanadiumppmASTM D5185m>502010VanadiumppmASTM D5185m>200<1VanadiumppmASTM D5185m>202010VanadiumppmASTM D5185m>502010VanadiumppmASTM D5185m>502010SiliconppmASTM D5185m>502010SiliconppmASTM D5185m>502010S	Machine Age	hrs	Client Info		9290	6332	
Oil Changed Filter ChangedClient InfoChanged ChangedChanged Not ChangedFilter Changed Sample StatusClient InfoNORMALNORMALIronppmASTM D5185m>500125158ChromiumppmASTM D5185m>2022NickelppmASTM D5185m>100<1TitaniumppmASTM D5185m>100<1SilverppmASTM D5185m>500<1AluminumppmASTM D5185m>500<1LeadppmASTM D5185m>500<1CopperppmASTM D5185m>2025VanadiumppmASTM D5185m>202010White Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>202010Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2010SiliconppmASTM D5185m>20NONENONESoliconppmASTM D5185m>20NONENONESoliconppmASTM D5185m>20NONENONESoliconppmASTM D5185m>20NONENONESoli	Oil Age	hrs	Client Info		0	0	
Filter Changed Client Info Changed Not Changed Sample Status Client Info NORMAL NORMAL NORMAL Iron ppm ASTM D5185m >500 125 15.8 Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >10 0 <1 Silver ppm ASTM D5185m >10 0 <1 Aluminum ppm ASTM D5185m >30 <1 1 Aluminum ppm ASTM D5185m >30 <16 78 Vanadium ppm ASTM D5185m >20 2 5 Vanadium ppm ASTM D5185m >20 0 <1 Vanadium ppm ASTM D5185m >50 20 10 Vanadium ppm ASTM D5185m >20 0	Filter Age	hrs	Client Info		0	0	
Sample Status NORMAL NORMAL NORMAL Iron ppm ASTM D5185m >500 125 158 Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >10 0 <1 Silver ppm ASTM D5185m >10 0 <1 Aluminum ppm ASTM D5185m >30 <1 1 Lead ppm ASTM D5185m >30 <1 1 Copper ppm ASTM D5185m >20 2 5 Vanadium ppm ASTM D5185m >20 2 5 Vanadium ppm ASTM D5185m >20 10 Vellow Metal scalar 'Visual NONE NONE Silicon ppm ASTM D5185m >20 0 <1	Oil Changed		Client Info		Changed	Changed	
Iron ppm ASTM D5185m >500 125 158 Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >10 0 <1 Titanium ppm ASTM D5185m >10 0 <1 Aluminum ppm ASTM D5185m >30 <1 1 Aluminum ppm ASTM D5185m >30 <1 1 Lead ppm ASTM D5185m >50 0 <1 Copper ppm ASTM D5185m >20 2 5 Vanadium ppm ASTM D5185m >20 0 <1 Vanadium ppm ASTM D5185m >50 20 10 Vanadium ppm ASTM D5185m >20 0 <1 Vanadium ppm ASTM D5185m >20	Filter Changed		Client Info		Changed	Not Changd	
Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >10 0 <1 Titanium ppm ASTM D5185m >10 0 <1 Silver ppm ASTM D5185m >30 <1 1 Aluminum ppm ASTM D5185m >50 0 <1 Copper ppm ASTM D5185m >50 0 <1 Vanadium ppm ASTM D5185m >20 2 5 Vanadium ppm ASTM D5185m >20 2 5 Vanadium ppm ASTM D5185m >20 0 <1 Vanadium ppm ASTM D5185m >20 0 <10 Vanadium ppm ASTM D5185m >20 0 <10 Vallow Metal scalar *Visual NONE <th>Sample Status</th> <th></th> <th></th> <th></th> <th>NORMAL</th> <th>NORMAL</th> <th></th>	Sample Status				NORMAL	NORMAL	
Chromium NickelppmASTM D5185m>2022NickelppmASTM D5185m100<1TitaniumppmASTM D5185m0<1AluminumppmASTM D5185m500<1AluminumppmASTM D5185m500<1LeadppmASTM D5185m500<1CopperppmASTM D5185m500<1YanadiumppmASTM D5185m5025White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>200<1PotassiumppmASTM D5185m>200<1Silitscalar*VisualNONENONENONESolitscalar*VisualNONENONENONESodiumppmASTM D5185m>20NONENONESodiumppmASTM D5185m>20NONENONESodiumppmASTM D5185m>20NONENONESodiumppmASTM D5185m>20NONENONESodiumppmASTM D5185mNONENONEAppearancescalar*VisualNOR	Iron	mag	ASTM D5185m	>500	125	158	
NickelppmASTM D5185m>100<1	Chromium		ASTM D5185m	>20	2	2	
Titanium ppm ASTM D5185m 0 <1	Nickel		ASTM D5185m	>10	0	<1	
Silver ppm ASTM D5185m >30 <1	Titanium		ASTM D5185m		0	<1	
Lead ppm ASTM D5185m >50 0 <1	Silver		ASTM D5185m		0	<1	
Copper ppm ASTM D5185m >120 16 78 Tin ppm ASTM D5185m >20 2 5 Vanadium ppm ASTM D5185m >20 2 5 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >50 20 10 Potassium ppm ASTM D5185m >20 0 <1 Water WC Method >0.2 NEG NEG Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Appearance scalar *Visual NORML NORML NORML Appearance scalar *Visual </th <th>Aluminum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>30</th> <th><1</th> <th>1</th> <th></th>	Aluminum	ppm	ASTM D5185m	>30	<1	1	
TinppmASTM D5185m>2025VanadiumppmASTM D5185m0<1White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>502010PotassiumppmASTM D5185m>200<1WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLGoroscalar*VisualNORNORMLNORMLBoronppmASTM D5185m60BariumppmASTM D5185m22MolybdenumppmASTM D5185m46MaganesiumppmASTM D5185m1177PhosphorusppmASTM D5185m15771492SulfurppmASTM D5185m51723242	Lead	ppm	ASTM D5185m	>50	0	<1	
Vanadium ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>120	16	78	
White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>502010PotassiumppmASTM D5185m>200<1WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m60BoronppmASTM D5185m00BariumppmASTM D5185m22MaganeseppmASTM D5185m46MagnesiumppmASTM D5185m1177PhosphorusppmASTM D5185m113271422ZincppmASTM D5185m15771492SulfurppmASTM D5185m15771492	Tin	ppm	ASTM D5185m	>20	2	5	
Yellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>502010PotassiumppmASTM D5185m>200<1WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m60BoronppmASTM D5185m00MolybdenumppmASTM D5185m22MaganeseppmASTM D5185m1177MagnesiumppmASTM D5185m13271422PhosphorusppmASTM D5185m15771492SulfurppmASTM D5185m151723242	Vanadium	ppm	ASTM D5185m		0	<1	
Silicon ppm ASTM D5185m >50 20 10 Potassium ppm ASTM D5185m >20 0 <1 Water WC Method >0.2 NEG NEG Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORM NORML NORML Godium ppm ASTM D5185m -6 0 Sodium ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 160 <	White Metal	scalar	*Visual	NONE	NONE	NONE	
Potassium ppm ASTM D5185m >20 0 <1	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Potassium ppm ASTM D5185m >20 0 <1	Silicon		4STM D5185m		20	10	
WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m60BoronppmASTM D5185m160112MalganeseppmASTM D5185m22MagnesiumppmASTM D5185m1177PhosphorusppmASTM D5185m39473994PhosphorusppmASTM D5185m113271422SulfurppmASTM D5185m15773242					-		
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Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNORNONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m60BoronppmASTM D5185m160112BariumppmASTM D5185m22MolybdenumppmASTM D5185m46MagnesiumppmASTM D5185m1177CalciumppmASTM D5185m39473994PhosphorusppmASTM D5185m113271492ZincppmASTM D5185m51723242		scalar					
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Emulsified Water scalar *Visual >0.2 NEG NEG Sodium ppm ASTM D5185m 6 0 Boron ppm ASTM D5185m 160 112 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 4 6 Magnesium ppm ASTM D5185m 177 7 Calcium ppm ASTM D5185m 3947 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sodium ppm ASTM D5185m 6 0 Boron ppm ASTM D5185m 160 112 Barium ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 4 6 Magnesium ppm ASTM D5185m 17 7 Calcium ppm ASTM D5185m 3947 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242	Odor	scalar	*Visual	NORML	NORML	NORML	
Boron ppm ASTM D5185m 160 112 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 2 2 Molybdenum ppm ASTM D5185m 4 6 Manganese ppm ASTM D5185m 17 7 Magnesium ppm ASTM D5185m 177 7 Calcium ppm ASTM D5185m 1324 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron ppm ASTM D5185m 160 112 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 2 2 Molybdenum ppm ASTM D5185m 4 6 Manganese ppm ASTM D5185m 17 7 Magnesium ppm ASTM D5185m 177 7 Calcium ppm ASTM D5185m 1324 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242	Sodium	nnm	ASTM D5185m		6	0	
Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 4 6 Magnesium ppm ASTM D5185m 17 7 Calcium ppm ASTM D5185m 3947 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242							
Molybdenum ppm ASTM D5185m 2 2 Manganese ppm ASTM D5185m 4 6 Magnesium ppm ASTM D5185m 17 7 Magnesium ppm ASTM D5185m 177 7 Calcium ppm ASTM D5185m 3947 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242							
Manganese ppm ASTM D5185m 4 6 Magnesium ppm ASTM D5185m 17 7 Calcium ppm ASTM D5185m 3947 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242							
Magnesium ppm ASTM D5185m 17 7 Calcium ppm ASTM D5185m 3947 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242							
Calcium ppm ASTM D5185m 3947 3994 Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242	-						
Phosphorus ppm ASTM D5185m 1327 1422 Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242	•					3994	
Zinc ppm ASTM D5185m 1577 1492 Sulfur ppm ASTM D5185m 5172 3242	Phosphorus		ASTM D5185m			1422	
Sulfur ppm ASTM D5185m 5172 3242			ASTM D5185m			1492	
	Sulfur		ASTM D5185m		5172	3242	
	Visc @ 40°C		ASTM D445	55	42.5	40.4	

Contact/Location: ROB ANDERSON - SOUNAPFL





SOUTH FLORIDA EXCAVATION Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received 1455 RAIL HEAD BLVD STE 3 : VCP447755 : 29 May 2024 Lab Number : 06194402 NAPLES, FL Tested : 31 May 2024 Unique Number : 11056525 : 31 May 2024 - Wes Davis US 34110-8407 Diagnosed Test Package : MOB 1 Contact: ROB ANDERSON Certificate L2367 CHOOEH@EMBARQMAILCOM;KJ_GERRARD@YAHOO.COM;ROBDIGSDIRT@AOLCOM 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. T: (239)596-8111 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (239)596-8112

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Contact/Location: ROB ANDERSON - SOUNAPFL