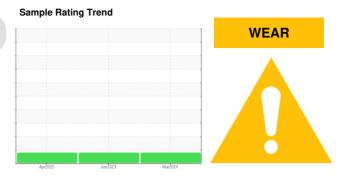


## **COOLANT REPORT**

# **THUNDER SPIRIT [200009532]** 21WEA84042 - GEN (S/N 72802187761)

Coolant Coolant

**INTERCOOL NFE-55AA (--- QTS)** 



### **DIAGNOSIS**

#### Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

#### Corrosion

Metal levels are abnormal indicating corrosion in the cooling system.

#### Contaminants

There is no indication of any contamination in the coolant.

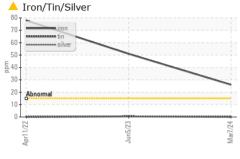
#### **Coolant Condition**

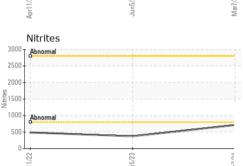
Glycol and nitrite levels are acceptable. The pH level of this fluid is within the acceptable limits.

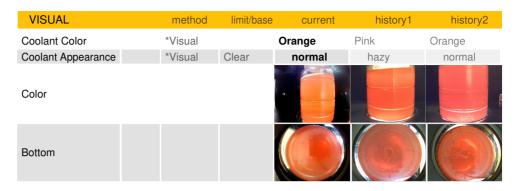
Sample Number         Client Info         NX015549         NX013557         NX010595           Sample Date         Client Info         07 Mar 2024         05 Jun 2023         11 Apr 2022           Machine Age         hrs         Client Info         60957         55551         0           Oil Age         hrs         Client Info         0         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A           AMAGE Properties of Client Info         N/A         N/A         N/A           ASTM DATE         MARRIGINAL         ABNORMAL         ABNORMAL           ASTM DATE         ASTM DATE         1.074         1.075         1.075           ASTM DATE         ASTM DATE	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         60957         55551         0           Oil Age         hrs         Client Info         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         MARGINAL         ABNORMAL         ABNORMAL         ABNORMAL         ABNORMAL           PHYSICAL TEST RESULTS         method         limit/base         current         history1         history2           Glycol Type         FT-IR                pH         Scale 0-14         ASTM D1287         8.60         8.60         8.66         8.66           Nitrites         ppm         AP-063-2009         712         372         488           Reserve Alkalinity         Scale 0-20         'ASTM D121                                   <	Sample Number		Client Info		NX015549	NX013557	NX010595
Oil Age         hrs         Client Info         N/A         N/A         N/A         N/A           Sample Status         MARGINAL         ABNORMAL         ABNORMAL         ABNORMAL         ABNORMAL           PHYSICAL TEST RESULTS method         limit/base         current         history1         history2           Glycol Type         FT-I-R              Specific Gravity         "ASTM D1288"         1.074         1.075         1.075           PH         Scale 0-14         ASTM D1287         8.60         8.60         8.66           Nitrites         ppm         AP-053:2009         712         372         488           Reserve Alkalinity         Scale 0-20         "ASTM D3321              Percentage Glycol         %         ASTM D3321         -47         -50         -47           Freezing Point         °F         ASTM D3321         -47         -50         -47           Total Dissolved Solids         current         n/a         n/a         n/a         n/a           CARPOSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         pp	Sample Date		Client Info		07 Mar 2024	05 Jun 2023	11 Apr 2022
Oil Changed Sample Status         Client Info         N/A         N/A         N/A         ABNORMAL         Inistory2           Glycol Type         FT-IR         "ASTM D6130"         1.074         1.075         <	Machine Age	hrs	Client Info		60957	55551	0
MARGINAL         ABNORMAL         ABNORMAL         ABNORMAL           PHYSICAL TEST RESULTS method         limit/base         current         history1         history2           Glycol Type         FT-IR              Specific Gravity         "ASTM D1288"         1.074         1.075         1.075           pH         Scale 0-14         ASTM D1287         8.60         8.60         8.66           Nitrities         ppm         AP-053:2009         712         372         488           Reserve Alkalinity         Percentage Glycol         % ASTM D1121               Percentage Glycol         % ASTM D3321         55.3         56.0         55.8         55.8           Freezing Point         °F         ASTM D3321         -47         -50         -47           Total Dissolved Solids         222.5         255.5         270.5         270.5           Carboxylate         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         1022         1627         647           Boron         ppm         ASTM D6130         199	Oil Age	hrs	Client Info		0	0	0
PHYSICAL TEST RESULTS   method   limit/base   current   history1   history2	Oil Changed		Client Info		N/A	N/A	N/A
Sepecific Gravity	Sample Status				MARGINAL	ABNORMAL	ABNORMAL
Specific Gravity         "ASTM D1298         1.074         1.075         1.075           pH         Scale 0.14         ASTM D1287         8.60         8.60         8.66           Nitrites         ppm         AP-053:2009         712         372         488           Reserve Alkalinity         Scale 0.20         "ASTM D1121              Percentage Glycol         %         ASTM D3321         -55.3         56.0         55.8           Freezing Point         °F         ASTM D3321         -47         -50         -47           Total Dissolved Solids         222.5         255.5         270.5         -47           Carboxylate         n/a         n/a         n/a         n/a           Carboxylate         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         1022         1627         647           Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         15         26         51         78           CORROSION         method         limit/base         current         <	PHYSICAL TEST R	ESULTS	method	limit/base	current	history1	history2
pH         Scale 0-14         ASTM D1287         8.60         8.60         8.60         8.66           Nitrites         ppm         AP-053:2009         712         372         488           Reserve Alkalinity         Scale 0:20         "ASTM D1121              Percentage Glycol         %         ASTM D3321         55.3         56.0         55.8           Freezing Point         °F         ASTM D3321         -47         -50         -47           Total Dissolved Solids         222.5         255.5         270.5         -47           Carboxylate         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         1022         1627         647           Boron         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         26         51         78           Aluminum <th< td=""><td>Glycol Type</td><td></td><td>FT-IR</td><td></td><th></th><td></td><td></td></th<>	Glycol Type		FT-IR				
Nitrites         ppm         AP-053:2009         712         372         488           Reserve Alkalinity         Scale 0:20         "ASTM D1121              Percentage Glycol         %         ASTM D3321         55.3         56.0         55.8           Freezing Point         "F         ASTM D3321         -47         -50         -47           Total Dissolved Solids         222.5         255.5         270.5         -47           Carboxylate         n/a         n/a         n/a         n/a           CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         1022         1627         647           Boron         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         26         51         78           Aluminum         ppm         ASTM D6130         >10<	Specific Gravity		*ASTM D1298		1.074	1.075	1.075
Reserve Alkalinity	рН	Scale 0-14	ASTM D1287		8.60	8.60	8.66
Percentage Glycol         %         ASTM D3321         55.3         56.0         55.8           Freezing Point         °F         ASTM D3321         -47         -50         -47           Total Dissolved Solids         222.5         255.5         270.5           Carboxylate         n/a         n/a         n/a           CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         199         312         306           Boron         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >10         1         2         3           Aluminum         ppm         ASTM D6130         >10         5         0         <1	Nitrites	ppm	AP-053:2009		712	372	488
Freezing Point         °F         ASTM D3321         -47         -50         -47           Total Dissolved Solids Carboxylate         222.5         255.5         270.5         270.5           CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         1022         1627         647           Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         26         51         78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Reserve Alkalinity	Scale 0-20	*ASTM D1121				
Total Dissolved Solids         222.5         255.5         270.5           Carboxylate         n/a         n/a         n/a         n/a           CORROSION INHIBITORS method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         199         312         306           Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Percentage Glycol	%	ASTM D3321		55.3	56.0	55.8
Carboxylate         n/a         n/a         n/a         n/a           CORROSION INHIBITORS method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         199         312         306           Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Freezing Point	°F	ASTM D3321		-47	-50	-47
CORROSION INHIBITORS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         199         312         306           Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         26         51         78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Total Dissolved Solids				222.5	255.5	270.5
Silicon         ppm         ASTM D6130         32         46         45           Phosphorus         ppm         ASTM D6130         1022         1627         647           Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         26         51         78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Carboxylate				n/a	n/a	n/a
Phosphorus         ppm         ASTM D6130         1022         1627         647           Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         26         51         78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1           Lead         ppm         ASTM D6130         >10         <1         0         0           Tin         ppm         ASTM D6130         >10         <1         10         10           Zinc         ppm         ASTM D6130         <1         10         10         10           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         540         931         554	CORROSION INH	IBITORS	method	limit/base	current	history1	history2
Boron         ppm         ASTM D6130         199         312         306           Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         ▲ 26         ▲ 51         ▲ 78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Silicon	ppm	ASTM D6130		32	46	45
Molybdenum         ppm         ASTM D6130         142         264         278           CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         ▲ 26         ▲ 51         ▲ 78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Phosphorus	ppm	ASTM D6130		1022	1627	647
CORROSION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D6130         >15         ▲ 26         ▲ 51         ▲ 78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1	Boron	ppm	ASTM D6130		199	312	306
Iron         ppm         ASTM D6130         >15         ▲ 26         ▲ 51         ▲ 78           Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1           Lead         ppm         ASTM D6130         >10         <1         0         0           Tin         ppm         ASTM D6130         >10         0         <1         0           Zinc         ppm         ASTM D6130         >10         0         <1         10           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         19         23         0           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         >100         0         <1         0           SCALE POTENTIAL         method         limit/base         current         history1	Molybdenum	ppm	ASTM D6130		142	264	278
Aluminum         ppm         ASTM D6130         >10         1         2         3           Copper         ppm         ASTM D6130         >10         5         0         <1           Lead         ppm         ASTM D6130         >10         <1         0         0           Tin         ppm         ASTM D6130         >10         0         <1         0           Zinc         ppm         ASTM D6130         <1         10         10           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         19         23         0           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1         0 <td>CORROSION</td> <td></td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	CORROSION		method	limit/base	current	history1	history2
Copper         ppm         ASTM D6130         >10         5         0         <1           Lead         ppm         ASTM D6130         >10         <1	Iron	ppm	ASTM D6130	>15	<u>^</u> 26	<u></u> ▲ 51	<b>▲</b> 78
Lead         ppm         ASTM D6130         >10         <1         0         0           Tin         ppm         ASTM D6130         >10         0         <1	Aluminum	ppm	ASTM D6130	>10	1	2	3
Tin         ppm         ASTM D6130         >10         0         <1         0           Zinc         ppm         ASTM D6130         <1         10         10           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         19         23         0           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1	Copper	ppm	ASTM D6130	>10	5	0	<1
Zinc         ppm         ASTM D6130         <1         10         10           CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         19         23         0           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1         0           Magnesium         ppm         ASTM D6130         >40         0         <1         <1	Lead	ppm	ASTM D6130	>10	<1	0	0
CONTAMINANTS         method         limit/base         current         history1         history2           Chlorine         ppm         ASTM D6130         19         23         0           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1	Tin	ppm	ASTM D6130	>10	0	<1	0
Chlorine         ppm         ASTM D6130         19         23         0           CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1	Zinc	ppm	ASTM D6130		<1	10	10
CARRIER SALTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1         0           Magnesium         ppm         ASTM D6130         >40         0         <1         <1	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium         ppm         ASTM D6130         540         931         554           Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1         0           Magnesium         ppm         ASTM D6130         >40         0         <1         <1	Chlorine	ppm	ASTM D6130		19	23	0
Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1         0           Magnesium         ppm         ASTM D6130         >40         0         <1         <1	CARRIER SALTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D6130         3497         5083         1760           SCALE POTENTIAL         method         limit/base         current         history1         history2           Calcium         ppm         ASTM D6130         >100         0         <1	Sodium	ppm	ASTM D6130		540	931	554
Calcium         ppm         ASTM D6130         >100         0         <1         0           Magnesium         ppm         ASTM D6130         >40         0         <1         <1	Potassium		ASTM D6130		3497	5083	1760
Magnesium         ppm         ASTM D6130         >40         0         <1	SCALE POTENTI	AL	method	limit/base	current	history1	history2
Magnesium         ppm         ASTM D6130         >40         0         <1         <1	Calcium	ppm	ASTM D6130	>100	0	<1	0
	Magnesium		ASTM D6130	>40	0	<1	<1
	•						

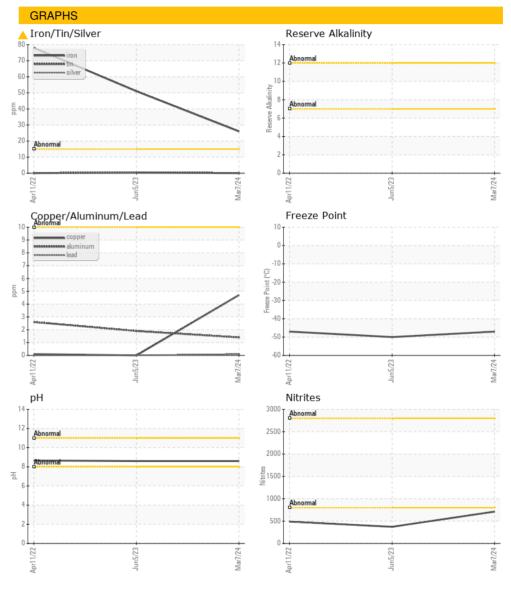


# **COOLANT REPORT**













Certificate 12367

Laboratory Sample No.

: NX015549 Lab Number : 06135992

Unique Number : 10955457

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested** 

: 01 Apr 2024 : 05 Apr 2024 Diagnosed

: 05 Apr 2024 - Jonathan Hester

**NORDEX USA - Chicago** 300 SOUTH WACKER DRIVE, SUITE 1500 CHICAGO, IL

US 60606 Contact: DEVIN LINEHAN DLinehan@nordex-online.com

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.

Test Package : COOL ( Additional Tests: GlycolType )

T: (312)386-4124 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (312)386-7102 Contact/Location: DEVIN LINEHAN - NORDEX

Report Id: NORDEX [WUSCAR] 06135992 (Generated: 04/05/2024 15:25:11) Rev: 1