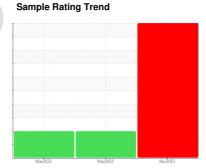


PROBLEM SUMMARY

FRONTIER II Machine Id 18WEA86917 - MAIN BEARING

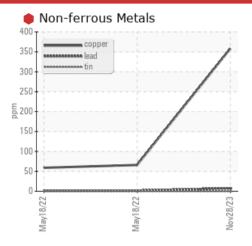
Component **Grease**

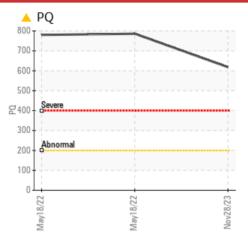
NOT GIVEN (--- LTR)

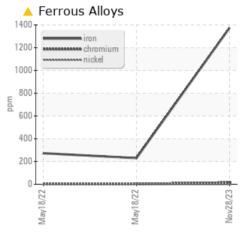




COMPONENT CONDITION SUMMARY







RECOMMENDATION

Re-sample to verify the actual oil condition. Purge old grease if still abnormal and monitor the trend of iron level. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS									
Sample Status				SEVERE	ABNORMAL	ABNORMAL			
PQ		ASTM D8184	>200	<u></u> 618	▲ 786	▲ 780			
Iron	ppm	ASTM D5185m	>250	1374	273	230			
Chromium	ppm	ASTM D5185m	>10	<u> </u>	2	2			
Copper	ppm	ASTM D5185m	>75	358	59	66			

Customer Id: NORDEX Sample No.: NX06026959 Lab Number: 06026959 Test Package: GRS 1



To manage this report scan the QR code

To discuss the diagnosis or test data: Doug Bogart +1 (800)237-1369 x4016 dougb@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Monitor			?	Re-sample to verify the actual oil condition. Purge old grease if still abnormal and monitor the trend of iron level.		
Change Fluid			?	Re-sample to verify the actual oil condition. Purge old grease if still abnormal and monitor the trend of iron level.		
Resample			?	Re-sample to verify the actual oil condition. Purge old grease if still abnormal and monitor the trend of iron level. We recommend an early resample to monitor this condition.		

HISTORICAL DIAGNOSIS

18 May 2022 Diag: Doug Bogart

WEAR



No corrective action is recommended at this time. We recommend an early resample to establish wear rate. NOTE: one of two samples received with same ID.Bearing and/or bushing wear is indicated. There is no indication of any contamination in the grease. The AN level is acceptable for this fluid.



18 May 2022 Diag: Doug Bogart

WEAR



No corrective action is recommended at this time. We recommend an early resample to establish wear rate. NOTE: one of two samples received with same ID.Bearing and/or bushing wear is indicated. There is no indication of any contamination in the grease. The AN level is acceptable for this fluid.





GREASE ANALYSIS

FRONTIER II Machine Id 18WEA86917 - MAIN BEARING

Component

Grease

NOT GIVEN (--- LTR)

Sample Rating Trend Maybozz Maybozz Newbozz



DIAGNOSIS

Recommendation

Re-sample to verify the actual oil condition. Purge old grease if still abnormal and monitor the trend of iron level. We recommend an early resample to monitor this condition.

Wear

Moderate concentration of visible metal present. Bearing and/or bushing wear is indicated.

Grease Condition

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

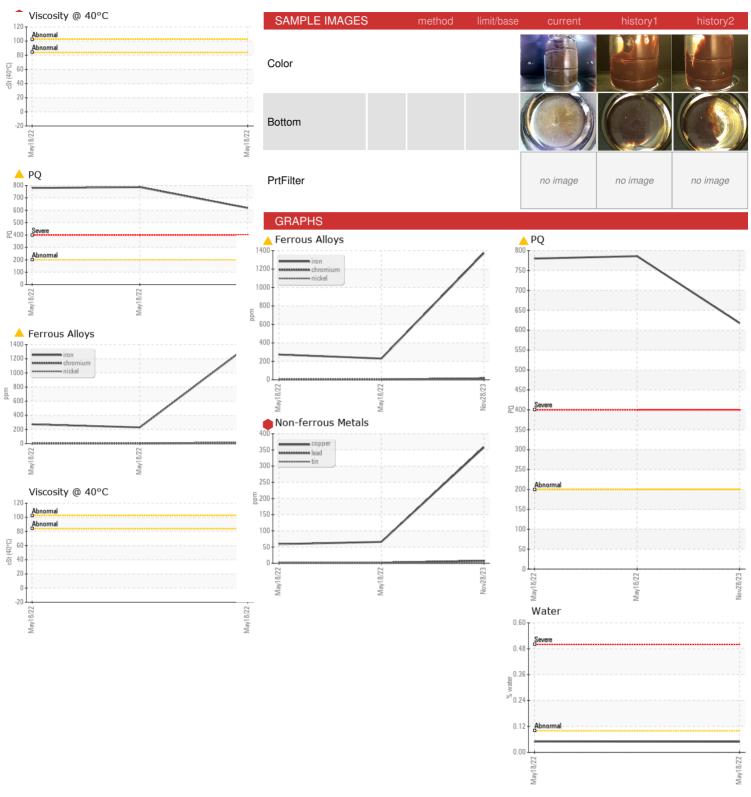
Contaminants

There is no indication of any contamination in the grease.

Sample Number Client Info NX06026959 NX05566001 NX05565999 Sample Date Client Info 28 Nov 2023 18 May 2022 19 May 2022 14 May 2022 14 May 2022 14 May 202 14 May 202 18 Ma	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Grease Age hrs Client Info 0 0 0 Grease Serviced Client Info N/A N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A Wear WC Method >0.1 NEG NEG NEG WEAR METALS method Imit/base current history1 history2 PQ ASTM D8184 >200 618 786 780 Iron ppm ASTM D8185m 220 41374 273 230 Chromium ppm ASTM D8185m 25 0 0 0 Nickel ppm ASTM D8185m 2 <1 <1 1 Vanadium ppm ASTM D8185m 2 <1 <1 <1 Vanadium ppm ASTM D8185m 25 7 1 2 <1 <1 <1 <	Sample Number		Client Info		NX06026959	NX05566001	NX05565999
Grease Age hrs Client Info N/A N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D8184 >200 618 786 780 Iron ppm ASTM D8185m >250 1374 273 230 Chromium ppm ASTM D8185m >10 15 2 2 Chromium ppm ASTM D8185m >5 0 0 0 Cadmium ppm ASTM D8185m 2 <1	Sample Date		Client Info		28 Nov 2023	18 May 2022	18 May 2022
Grease Serviced Sample Status Client Info N/A N/A N/A N/A CONTAMINATION method Imit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D8184 >200 618 786 780 Iron ppm ASTM D8185m >250 1374 273 230 Chromium ppm ASTM D8185m >5 0 0 0 Cadmium ppm ASTM D8185m >5 0 0 0 Cadmium ppm ASTM D8185m 2 <1 <1 1 Vanadium ppm ASTM D8185m 2 <1 <1 1 0 0 Vanadium ppm ASTM D8185m 22 <1 <1 2 <1 <1 1 2 <1 <1	Machine Age	hrs	Client Info		0	0	0
Sample Status	Grease Age	hrs	Client Info		0	0	0
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 WEAR METALS method limit/base current history1 history2 PQ ASTM D5185m 200 618 786 780 Iron ppm ASTM D5185m >250 1374 273 230 Chromium ppm ASTM D5185m >10 15 2 2 2 Nickel ppm ASTM D5185m >5 0 0 0 0 Cadmium ppm ASTM D5185m 2 <1	Grease Serviced		Client Info		N/A	N/A	N/A
Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D8184 >200 618 786 780 Iron ppm ASTM D5185m >250 1374 273 230 Chromium ppm ASTM D5185m 10 15 2 2 2 Nickel ppm ASTM D5185m 2 <1	Sample Status				SEVERE	ABNORMAL	ABNORMAL
WEAR METALS method limit/base current history1 history2 PQ ASTM D8184 >200 618 786 780 Iron ppm ASTM D5185m >250 1374 273 230 Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m 2 <1 <1 1 Cadmium ppm ASTM D5185m 2 <1 <1 1 Vanadium ppm ASTM D5185m 2 <1 <1 <1 Vanadium ppm ASTM D5185m 2 <1 <1 <1 <2 <1 <1 <1 <2 <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	CONTAMINATION		method	limit/base	current	history1	history2
PQ ASTM D8184 briton >200	Water		WC Method	>0.1	NEG	NEG	NEG
Iron ppm ASTM D5185m >250 ▲ 1374 273 230 Chromium ppm ASTM D5185m >10 ▲ 15 2 2 Nickel ppm ASTM D5185m >5 0 0 0 Cadmium ppm ASTM D5185m 2 <1	WEAR METALS		method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >10 15 2 2 Nickel ppm ASTM D5185m >5 0 0 0 Cadmium ppm ASTM D5185m 2 <1 <1 Titanium ppm ASTM D5185m 2 <1 <1 Vanadium ppm ASTM D5185m 2 <1 <1 <1 <0 0 Vanadium ppm ASTM D5185m 25 7 1 2 <1 2 <1 <1 2 <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	PQ		ASTM D8184	>200	<u> </u>	▲ 786	▲ 780
Nickel ppm ASTM D5185m >5 0 0 0 Cadmium ppm ASTM D5185m 2 <1 <1 Titanium ppm ASTM D5185m 2 <1 <1 Vanadium ppm ASTM D5185m 2 <1 <1 Lead ppm ASTM D5185m >25 7 1 2 Copper ppm ASTM D5185m >75 358 59 66 Tin ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >5 <1 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 226 171 146 Magnesium ppm ASTM D5185m 0 0 0 Malagnesium ppm ASTM D5185m 12 4 4 Molybdenum ppm ASTM D5185m	Iron	ppm	ASTM D5185m	>250	<u> </u>	273	230
Cadmium ppm ASTM D5185m 2 <1 <1 Titanium ppm ASTM D5185m 1 0 0 Vanadium ppm ASTM D5185m 2 <1	Chromium	ppm	ASTM D5185m	>10	<u> </u>	2	2
Titanium ppm ASTM D5185m 1 0 0 Vanadium ppm ASTM D5185m 2 <1 <1 Lead ppm ASTM D5185m >25 7 1 2 Copper ppm ASTM D5185m >5 0 0 0 Tin ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m 226 171 146 ADDITIVES method timit/base current history1 history2 Boron ppm ASTM D5185m 226 171 146 146 Magnesium ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 12 4 4 Molybdenum ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m	Nickel	ppm	ASTM D5185m	>5	0	0	0
Vanadium ppm ASTM D5185m 2 <1 <1 Lead ppm ASTM D5185m >25 7 1 2 Copper ppm ASTM D5185m >75 358 59 66 Tin ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >5 <1	Cadmium	ppm	ASTM D5185m		2	<1	<1
Lead ppm ASTM D5185m >25 7 1 2 Copper ppm ASTM D5185m >75 358 59 66 Tin ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >5 <1	Titanium	ppm	ASTM D5185m		1	0	0
Copper ppm ASTM D5185m >75 358 59 66 Tin ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >5 <1 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 226 171 146 Magnesium ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 12 4 4 Molybdenum ppm ASTM D5185m 6109 2005 1672 Phosphorus ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm	Vanadium	ppm	ASTM D5185m		2	<1	<1
Tin ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >5 <1	Lead	ppm	ASTM D5185m	>25	7	1	2
Silver ppm ASTM D5185m >5 <1	Copper	ppm	ASTM D5185m	>75	358	59	66
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 226 171 146 Magnesium ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 12 4 4 Molybdenum ppm ASTM D5185m 6109 2005 1672 Phosphorus ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 <th>Tin</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>5</th> <th>0</th> <th>0</th> <th>0</th>	Tin	ppm	ASTM D5185m	>5	0	0	0
Boron ppm ASTM D5185m 226 171 146 Magnesium ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 12 4 4 Molybdenum ppm ASTM D5185m 6109 2005 1672 Phosphorus ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1	Silver	ppm	ASTM D5185m	>5	<1	0	<1
Magnesium ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 12 4 4 Molybdenum ppm ASTM D5185m 6109 2005 1672 Phosphorus ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current hist	ADDITIVES		method	limit/base	current	history1	history2
Manganese ppm ASTM D5185m 12 4 4 Molybdenum ppm ASTM D5185m 6109 2005 1672 Phosphorus ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150	Boron	ppm	ASTM D5185m		226	171	146
Molybdenum ppm ASTM D5185m 6109 2005 1672 Phosphorus ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Magnesium	ppm	ASTM D5185m		0	0	0
Phosphorus ppm ASTM D5185m 1217 663 577 Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Manganese	ppm	ASTM D5185m		12	4	4
Zinc ppm ASTM D5185m 483 44 43 THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Molybdenum	ppm	ASTM D5185m		6109	2005	1672
THICKENER/SOAP method limit/base current history1 history2 Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Phosphorus	ppm	ASTM D5185m		1217	663	577
Aluminum ppm ASTM D5185m 0 6 5 Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Zinc	ppm	ASTM D5185m		483	44	43
Barium ppm ASTM D5185m 16 5 4 Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	THICKENER/SOA	Р	method	limit/base	current	history1	history2
Calcium ppm ASTM D5185m 25 8 7 Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Aluminum	ppm	ASTM D5185m		0	6	5
Sodium ppm ASTM D5185m 15 8 6 Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Barium	ppm	ASTM D5185m		16	5	4
Lithium ppm ASTM D5185m 3680 2397 2045 Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Calcium	ppm	ASTM D5185m		25	8	7
Sulfur ppm ASTM D5185m 6558 5169 4431 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >150 128 40 34	Sodium	ppm	ASTM D5185m		15	8	6
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>1501284034	Lithium	ppm	ASTM D5185m		3680	2397	2045
Silicon ppm ASTM D5185m >150 128 40 34	Sulfur	ppm	ASTM D5185m		6558	5169	4431
pp	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m 6 2 1	Silicon	ppm	ASTM D5185m	>150	128	40	34
	Potassium		ASTM D5185m		6	2	1



GREASE ANALYSIS





Certificate L2367

Laboratory Sample No. Lab Number Unique Number

: NX06026959 : 06026959 : 10776750

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

: 06 Dec 2023

: 26 Dec 2023 Diagnostician : Doug Bogart

Test Package : GRS 1 (Additional Tests: KV40, SCREEN)

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.

NORDEX USA - Chicago

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> US 60606 Contact: DEVIN LINEHAN

DLinehan@nordex-online.com

T: (312)386-4124 F: (312)386-7102

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)