December 23, 2019

Coca-Cola
Memphis, TN

The following is a summary of findings from the December 2019 monthly vibration survey at your facility. All equipment collected was found in satisfactory condition except for the following items. Please let us know if there are any questions or comments.

QualiTest® uses a four step rating system for defects.

Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

Class III; Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

Class IV; Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

Defects

Warmer 2 Water Pump
The DE motor bearing still has higher than normal temperature. Data also shows a possible bearing issue beginning to take place. For now, ensure bearing has adequate lubrication. We will monitor this closely. Rated as a **CLASS II** defect.

Ammonia Compressors 2 and 4
There appears to be quite a bit of belt movement in these units. This is most likely causing some unnecessary high vibration. It is recommended to inspect all belts for proper tension. Refer to belt manufacturer for belt tension specs. Rated as a **CLASS II** defect.
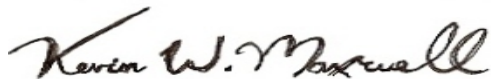
Mix Tank 6 Mixer Drive
Gearbox data shows some signs of defects/wear in the bearings and/or gears. Inspect unit as scheduling allows. Rated as a **CLASS II** defect.

As always, it has been a pleasure to serve CCBC Memphis Bottling Plant. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

Kevin W. Maxwell

ISO Certified Vibration Analyst, Category III

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Abbreviated Last Measurement Summary
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        Database:  Coca-Cola.rbm
        Area:      PRODUCTION


 MEASUREMENT POINT           OVERALL LEVEL        HFD / VHFD
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 BF-1      - MEYER BOTTLE FILLER #1      (12-Dec-19)
                             OVERALL LEVEL     1K-20KHz
        MOH                  .143 In/Sec        .649 G-s
        MIH                  .094 In/Sec        .272 G-s
        MIA                  .073 In/Sec        .073 G-s
        GIA                  .089 In/Sec        .086 G-s
        GIH                  .172 In/Sec        .090 G-s
        GOH                  .046 In/Sec
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ACE-109     - AIR CONVEYOR FAN 109        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .104 In/Sec      1.067 G-s
        MIH                 .072 In/Sec       .169 G-s


TECH1SYPMP - TECHNIBLEND 1 SYRUP PUMP      (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .055 In/Sec       .078 G-s
        MIH                 .028 In/Sec       .028 G-s
        MIA                 .038 In/Sec       .035 G-s
        GIA                 .016 In/Sec       .014 G-s
        GIH                 .023 In/Sec       .016 G-s
        GOH                 .036 In/Sec


TECH1WTRP  - TECHNIBLEND 1 WATER PUMP      (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .064 In/Sec       .233 G-s
        MIH                 .045 In/Sec       .194 G-s
        MIA                 .048 In/Sec       .049 G-s


ACE-101     - AIR CONVEYOR FAN 101        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .044 In/Sec       .054 G-s
        MIH                 .037 In/Sec       .077 G-s


ACE-102     - AIR CONVEYOR FAN 102        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .078 In/Sec       .058 G-s
        MIH                 .032 In/Sec       .094 G-s


ACE-103     - AIR CONVEYOR FAN 103        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .137 In/Sec       .079 G-s
        MIH                 .043 In/Sec       .165 G-s


ACE-104     - AIR CONVEYOR FAN 104        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .227 In/Sec       .068 G-s
        MIH                 .050 In/Sec       .044 G-s


ACE-105     - AIR CONVEYOR FAN 105        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .094 In/Sec       .046 G-s
        MIH                 .042 In/Sec       .053 G-s


ACE-106     - AIR CONVEYOR FAN 106        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .115 In/Sec       .105 G-s
        MIH                 .046 In/Sec       .079 G-s


ACE-107     - AIR CONVEYOR FAN 107        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .150 In/Sec       .048 G-s
        MIH                 .057 In/Sec       .117 G-s


ACE-108     - AIR CONVEYOR FAN 108        (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .319 In/Sec       .238 G-s
        MIH                 .143 In/Sec       .175 G-s


WRMR1CNVDR - WARMER 1 CONVEYOR DRIVE       (12-Dec-19)
                            OVERALL LEVEL      1K-20KHz
        MOH                 .077 In/Sec       .070 G-s
        MIH                 .073 In/Sec       .448 G-s
        MIA                 .047 In/Sec       .381 G-s
        GIA                 .037 In/Sec       .294 G-s
        GIH                 .032 In/Sec       .259 G-s
        GOH                 .010 In/Sec
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WRMR1WTRP  - WARMER 1 WATER PUMP          (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .055 In/Sec        .214 G-s
       MIH                     .037 In/Sec        .118 G-s


SPIRLCONV1 - SPIRAL CONVEYOR DRIVE 1      (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .203 In/Sec        .119 G-s
       MIH                     .137 In/Sec        .138 G-s
       MIA                     .198 In/Sec        .073 G-s
       PH                      .081 In/Sec        .201 G-s


BF-2       - MEYER BOTTLE FILLER #2       (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .066 In/Sec        .019 G-s
       MIH                     .096 In/Sec        .021 G-s
       MIA                     .058 In/Sec        .010 G-s
       GIH                     .025 In/Sec        .022 G-s
       GOH                    .0086 In/Sec
       GS1                    .0034 In/Sec
       GS2                    .0051 In/Sec
       GS3                    .0036 In/Sec
       GS4                    .0072 In/Sec


TECH2SYPMP - TECHNIBLEND 2 SYRUP PUMP     (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .029 In/Sec        .034 G-s
       MIH                     .018 In/Sec        .028 G-s
       MIA                     .024 In/Sec        .016 G-s
       GIA                     .028 In/Sec        .030 G-s
       GIH                     .021 In/Sec        .015 G-s
       GOH                     .027 In/Sec
       PIH                     .021 In/Sec
       POH                     .025 In/Sec


TECH2WTRP  - TECHNIBLEND 2 WATER PUMP     (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .061 In/Sec        .237 G-s
       MIH                     .055 In/Sec        .224 G-s


WRMR2CNVDR - WARMER 2 CONVEYOR DRIVE      (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .047 In/Sec        .065 G-s
       MIH                     .031 In/Sec        .225 G-s
       MIA                     .061 In/Sec        .194 G-s
       GIA                     .056 In/Sec        .152 G-s
       GIH                     .032 In/Sec        .217 G-s
       GOH                    .0055 In/Sec


WRMR2WTRP  - WARMER 2 WATER PUMP          (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .072 In/Sec        .246 G-s
       MIH                     .062 In/Sec        .785 G-s
       MIA                     .064 In/Sec        .184 G-s


SPRLRCONVD - SPIRAL 2 CONVEYOR DRIVE      (12-Dec-19)
                              OVERALL LEVEL    1K-20KHz
       MOH                     .335 In/Sec        .138 G-s
       MIH                     .187 In/Sec        .162 G-s
       MIA                     .129 In/Sec        .213 G-s
       GIA                     .097 In/Sec        .134 G-s
       GIH                     .147 In/Sec        .327 G-s
       GOH                     .113 In/Sec
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MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD

C-2   - AMMONIA COMPRESSOR C-2   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.460 In/Sec	.302 G-s
MIH	.327 In/Sec	.317 G-s
MIA	.204 In/Sec	.222 G-s
PIH	.500 In/Sec	.258 G-s
POH	.302 In/Sec	.504 G-s

C-3   - AMMONIA COMPRESSOR C-3   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.316 In/Sec	.557 G-s
MIH	.260 In/Sec	.655 G-s
MIA	.205 In/Sec	1.219 G-s
PIH	.167 In/Sec	.333 G-s
POH	.314 In/Sec	.419 G-s

C-4   - AMMONIA COMPRESSOR C-4   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.334 In/Sec	.226 G-s
MIH	.252 In/Sec	.416 G-s
MIA	.215 In/Sec	.477 G-s
PIH	.309 In/Sec	.614 G-s
POH	.251 In/Sec	.482 G-s

CO2EVAPMP2 - CO2 EVAPORATOR PUMP 2   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.149 In/Sec	.108 G-s
MIH	.066 In/Sec	.071 G-s
MIA	.061 In/Sec	.169 G-s

E-100   - E-100 WATER TREATMENT PUMP   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.111 In/Sec	.465 G-s
MIH	.056 In/Sec	.329 G-s
MIA	.068 In/Sec	.416 G-s
PH	.105 In/Sec	.087 G-s

E-200   - E-200 WATER TREATMENT PUMP   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.062 In/Sec	.215 G-s
MIH	.032 In/Sec	.223 G-s
MIA	.078 In/Sec	.138 G-s
PH	.077 In/Sec	.116 G-s

E-300   - E-300 WATER TREATMENT PUMP   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.061 In/Sec	.470 G-s
MIH	.067 In/Sec	.237 G-s
MIA	.077 In/Sec	.169 G-s
PH	.114 In/Sec	.096 G-s

Q-100   - Q-100 PROCESS WATER PUMP   (12-Dec-19)

	OVERALL LEVEL	1K-20KHz
MOH	.161 In/Sec	.301 G-s
MIH	.167 In/Sec	.306 G-s
MIA	.125 In/Sec	.537 G-s

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            Database:  Coca-Cola.rbm
            Area:      MIXING


      MEASUREMENT POINT              OVERALL LEVEL        HFD / VHFD
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   TNK1MXRDRV - TANK 1 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MIH                      .123 In/Sec        .293 G-s
           GIH                      .177 In/Sec        .166 G-s


   TNK2MXRDRV - TANK 2 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MIH                      .134 In/Sec        .066 G-s
           GIH                      .255 In/Sec        .159 G-s


   TNK3MXRDRV - TANK 3 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MIH                      .225 In/Sec        .337 G-s
           GIH                      .211 In/Sec        .493 G-s


   TNK4MXRDRV - TANK 4 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MOH                      .199 In/Sec        .144 G-s
           GIH                      .186 In/Sec        .278 G-s


   TNK5MXRDRV - TANK 5 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MIH                      .184 In/Sec        .344 G-s
           GIH                      .201 In/Sec        .766 G-s


   TNK6MXRDRV - TANK 6 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MIH                      .078 In/Sec        .867 G-s
           GIH                      .143 In/Sec       2.344 G-s


   TNK8MXRDRV - TANK 8 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MIH                      .148 In/Sec        .052 G-s
           GIH                      .124 In/Sec        .088 G-s


   TNK9MXRDRV - TANK 9 MIXER DRIVE              (12-Dec-19)
                                  OVERALL LEVEL      1K-20KHz
           MIH                      .089 In/Sec        .324 G-s
           GIH                      .223 In/Sec        .377 G-s


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   Clarification Of Vibration Units:
      Acc       -->  G-s       RMS
      Vel       -->  In/Sec    PK
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