HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

January 8, 2021

Blues City Brewery

Subject: January vibration service

Most of the machines surveyed were found to be in good condition with the exception of the following:

***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

***Hi-Speed*** **Industrial Service** tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

This completes our assessment of your equipment for this survey. Thank you for your business and don't hesitate to call if you have any comments or questions.

Sincerely,

David W Shook

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**Reportable equipment**

**ALC Skid 2 RO Pump 3**
Motor vibration is still slightly high this survey. Check the coupling insert for distress. **Rated a Class I Defect.**

**Air Compressor 4**
Harmonic content consistent with typical lobe pass has dropped slightly. We will continue to watch closely. **Rated a Class I Defect.**

**Boiler Fan 2**
Motor vibrations are still high. Ensure all foot bolts on the motor and all fan bearing bolts are torqued and there is no soft foot. This is more than likely a fan imbalance that is transferring through the motor. Still recommend having fan pulled and shop balanced on a balance stand. **Rated as a Class II Defect.**

**Boiler 3 Fan, Motor Bearings**
Bearing defect frequencies are still in the motor, which look to be from fluting. The acceleration trend has dropped off this survey; however, the overalls are still above 3 g's RMS. Expect to change out the bearings in the future. **Rated a Class II Defect.**

**Boiler 3 Fan, Fan Bearings**
The inboard fan bearing shows strong peaks in the acceleration spectrum up around 2500 Hz with peaks around 112 Hz apart. Vibrations are near 4 g's RMS. Expect to change out the bearings in the future. **Rated a Class II Defect.**

**Service Water Pump 8**
The axial motor 1x vibrations for this unit is unchanged at.56 in/second velocity peak. Recommend inspecting all foot bolts, the coupling for wear and have a laser alignment preformed as soon as possible. **Rated as a Class II Defect.** We will continue to monitor closely.

**RO Water Pump 2**
This units still have a vibration at what appears to be vane pass, (5x RPM, 127.5 HZ); however, the overall vibrations are now near 0.35"/sec velocity peak There could be wear in the pump, or there could be a flow issue. We recommend further inspection and adjustments of flow related controls, filters, screens, or piping. **Rated a Class I Defect.**

**Service Water Pump 5**
The outboard motor 1x vibrations for this unit is at.48 in/second velocity peak. Recommend inspecting all foot bolts, the motor fan, the coupling for wear and have a laser alignment preformed. The pump has high acceleration in the bearing measurements at or above 5 g's RMS overall. The pump bearings are in some distress. We will watch closely for changes that would require action. **Rated a Class II Defect.**

**Ammonia Compressor 3**
Overall amplitude of the 1x vibration in the Motor Outboard Vertical is up to 0.45"/sec velocity peak. Have the coupling inspected and alignment checked. Also ensure that there are no loose fasteners. Recommend doing a vibration check of the motor uncoupled to try and narrow down what this issue is. Consider the motion amplification service we can provide to assist in solving structural issues. **Rated as a Class I Defect.**

**2nd Floor South Hot Water Pump**
Shaft speed vibration still dominates the unit vibration data at near ½" per second velocity peak. A 2x RPM vibration is also present. Inspect the unit base, structure, coupling and fasteners for issues. Have the shaft alignment checked too. **Rated a Class II Defect.**

**Gallery DA Vacuum Pump Skid 1**
The unit highest overall vibration was measured in the outboard pump bearing at over ½"/sec velocity peak. Unit vibrations are dominated by a shaft speed vibration and a 2x RPM harmonic. Inspect for loose fasteners, worn or eccentric coupling, and shaft alignment. **Rated a Class II Defect.**

**Filter Cellar Chill Water Circulator Pump 1**
High vibrations are still at 2x line frequency and could indicate an air gap issue in the motor. Air gap issues are variations in the distance between the surface of the rotor and stator. This could be caused by poor machining of the motor housing and end bells or possibly a soft foot. Unbalanced electrical phases can duplicate the vibration also. Start inspections with a precision alignment and soft foot check, followed by a motor phase and voltage analysis up to and including PDMA if necessary. **Rated a Class II Defect.**

**G Cellar Cold Glycol Pump 4**
Pump data seems to indicate pronounced cavitation; however, this could be masking early bearing defects. Ensure the pump is operating properly and that the pump bearings are properly lubricated. We will watch this one carefully for changes. **Rated a Class I Defect.**

**G Cellar 128 NANO Pump**
Vibrations at shaft speed are still excessive. Ensure all fasteners are tight and support structure is sound. Check for pipe strain. Make sure coupling is in good shape and shaft alignment is precise. **Rated a Class II Defect.**

**HVAC Hot Water Circulator Pump**

The new motor was so hot that I could smell the paint cooking. Check the wiring for proper voltage and connections ASAP; replace if necessary. Plant personnel are aware of the issue**. Rated a Class IV Defect.**

The pump vibrations are 0.5"/sec velocity peak and almost 4 g's RMS for the pump inboard axial. The high acceleration looks to be caused by cavitation in the pump. Ensure the coupling and alignment are good, and that there is no soft foot or pipe strain. Check the pump piping and flow to ensure it is running in the correct part of the performance curve. **Rated a Class II Defect.**

Abbreviated Last Measurement Summary
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Database: Blues_city.rbm
Station: POWER HOUSE
Report Date: 08-Jan-21 15:07

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|
| AIR COMP 2 - COMPRESSOR #2 - 175HP | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .106 In/Sec | 1.249 G-s |
| 12 - MOTOR OUTBOARD VERT | .106 In/Sec | 1.945 G-s |
| 13 - MOTOR OUTBOARD AXIAL | .072 In/Sec | .451 G-s |
| 21 - MOTOR INBOARD HORIZ | .081 In/Sec | 1.707 G-s |
| 22 - MOTOR INBOARD VERT | .129 In/Sec | 1.964 G-s |
| 23 - MOTOR INBOARD AXIAL | .090 In/Sec | 1.906 G-s |
| 71 - CPLG END HORIZ | .136 In/Sec | 1.385 G-s |
| 72 - CPLG END VERT | .201 In/Sec | 2.267 G-s |
| 73 - CPLG END AXIAL | .177 In/Sec | .293 G-s |
| 81 - OPP END HORIZ | .108 In/Sec | 1.303 G-s |
| 82 - OPP END VERT | .150 In/Sec | 1.457 G-s |
| 83 - OPP END AXIAL | .185 In/Sec | 4.412 G-s |
| AIR COMP 1 - COMPRESSOR #1 | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .164 In/Sec | 2.877 G-s |
| 12 - MOTOR OUTBOARD VERT | .116 In/Sec | .661 G-s |
| 13 - MOTOR OUTBOARD AXIAL | .161 In/Sec | .316 G-s |
| 21 - MOTOR INBOARD HORIZ | .168 In/Sec | .981 G-s |
| 22 - MOTOR INBOARD VERT | .084 In/Sec | .887 G-s |
| 23 - MOTOR INBOARD AXIAL | .190 In/Sec | 1.823 G-s |
| 71 - CPLG END HORIZ | .096 In/Sec | .886 G-s |
| 72 - CPLG END VERT | .183 In/Sec | .642 G-s |
| 73 - CPLG END AXIAL | .217 In/Sec | .328 G-s |
| 81 - OPP END HORIZ | .096 In/Sec | .977 G-s |
| 82 - OPP END VERT | .203 In/Sec | 2.066 G-s |
| 83 - OPP END AXIAL | .185 In/Sec | .794 G-s |
| AIR COMP 4 - COMPRESSOR #4 - 150HP | (08-Jan-21) | |

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .099 In/Sec | .561 G-s |
| 12 | - MOTOR OUTBOARD VERT | .184 In/Sec | .815 G-s |
| 13 | - MOTOR OUTBOARD AXIAL | .293 In/Sec | .691 G-s |
| 21 | - MOTOR INBOARD HORIZ | .117 In/Sec | .688 G-s |
| 22 | - MOTOR INBOARD VERT | .298 In/Sec | .748 G-s |
| 23 | - MOTOR INBOARD AXIAL | .146 In/Sec | .320 G-s |
| 71 | - CPLG END HORIZ | .104 In/Sec | .460 G-s |
| 72 | - CPLG END VERT | .313 In/Sec | .822 G-s |
| 73 | - CPLG END AXIAL | .166 In/Sec | .659 G-s |
| 81 | - OPP END HORIZ | .077 In/Sec | .521 G-s |
| 82 | - OPP END VERT | .479 In/Sec | .621 G-s |
| 83 | - OPP END AXIAL | .194 In/Sec | .909 G-s |

AIR COMP 5 - COMPRESSOR #5 (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .203 In/Sec | .588 G-s |
| 12 | - MOTOR OUTBOARD VERT | .110 In/Sec | .321 G-s |
| 13 | - MOTOR OUTBOARD AXIAL | .178 In/Sec | .223 G-s |
| 21 | - MOTOR INBOARD HORIZ | .230 In/Sec | .146 G-s |
| 22 | - MOTOR INBOARD VERT | .124 In/Sec | .121 G-s |
| 23 | - MOTOR INBOARD AXIAL | .120 In/Sec | .363 G-s |
| 71 | - CPLG END HORIZ | .139 In/Sec | .682 G-s |
| 72 | - CPLG END VERT | .142 In/Sec | .501 G-s |
| 73 | - CPLG END AXIAL | .153 In/Sec | .911 G-s |
| 81 | - OPP END HORIZ | .129 In/Sec | .609 G-s |
| 82 | - OPP END VERT | .055 In/Sec | .707 G-s |
| 83 | - OPP END AXIAL | .102 In/Sec | .091 G-s |

BFWPMIDLE2 - BOILER FEED WATER PUMP MID 2 (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR TOP N-S | .112 In/Sec | .442 G-s |
| 12 | - MOTOR TOP E-W | .158 In/Sec | .534 G-s |
| 21 | - MOTOR BOTTOM N-S | .111 In/Sec | .486 G-s |
| 22 | - MOTOR BOTTOM E-W | .106 In/Sec | .425 G-s |
| 23 | - MOTOR BOTTOM AXIAL | .092 In/Sec | .276 G-s |
| 71 | - PUMP TOP N-S | .243 In/Sec | .789 G-s |
| 72 | - PUMP TOP E-W | .163 In/Sec | 1.237 G-s |
| 73 | - PUMP TOP AXIAL | .142 In/Sec | 1.393 G-s |
| 81 | - PUMP BOTTOM N-S | .210 In/Sec | 1.075 G-s |
| 82 | - PUMP BOTTOM E-W | .135 In/Sec | 1.360 G-s |

BFWPSOUTH1 - BOILER FEED WATER PUMP S 1 (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR TOP N-S | .087 In/Sec | .160 G-s |
| 12 | - MOTOR TOP E-W | .134 In/Sec | .332 G-s |
| 21 | - MOTOR BOTTOM N-S | .121 In/Sec | .534 G-s |
| 22 | - MOTOR BOTTOM E-W | .085 In/Sec | .663 G-s |
| 23 | - MOTOR BOTTOM AXIAL | .250 In/Sec | .0054 G-s |
| 71 | - PUMP TOP N-S | .269 In/Sec | .671 G-s |
| 72 | - PUMP TOP E-W | .177 In/Sec | 1.301 G-s |
| 73 | - PUMP TOP AXIAL | .077 In/Sec | 1.290 G-s |
| 81 | - PUMP BOTTOM N-S | .303 In/Sec | 1.906 G-s |
| 82 | - PUMP BOTTOM E-W | .144 In/Sec | .813 G-s |

BOILERFAN2 - BOILER FAN #2 (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .364 In/Sec | .186 G-s |
| 12 | - MOTOR OUTBOARD VERT | .674 In/Sec | .619 G-s |
| 21 | - MOTOR INBOARD HORIZ | .712 In/Sec | .222 G-s |
| 22 | - MOTOR INBOARD VERT | .343 In/Sec | .361 G-s |

BOILERFAN3 - BOILER FAN #3 - 1780 RPM Max (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .147 In/Sec | 1.823 G-s |
| 12 | - MOTOR OUTBOARD VERT | .131 In/Sec | 1.671 G-s |
| 21 | - MOTOR INBOARD HORIZ | .152 In/Sec | 3.139 G-s |
| 22 | - MOTOR INBOARD VERT | .106 In/Sec | .503 G-s |
| 23 | - MOTOR INBOARD AXIAL | .122 In/Sec | .799 G-s |
| 71 | - FAN BEARING INBOARD HORZ | .114 In/Sec | 4.280 G-s |
| 72 | - FAN BEARING INBOARD VERT | .103 In/Sec | 2.322 G-s |
| 73 | - FAN BEARING INBOARD AXIAL | .102 In/Sec | .268 G-s |
| 81 | - FAN BEARING OUTBOARD HORZ | .246 In/Sec | .578 G-s |
| 82 | - FAN BEARING OUTBOARD VERT | .185 In/Sec | .179 G-s |

CR PUMP 1 - CARBON RECIRC PUMP (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .037 In/Sec | .267 G-s |
| 12 | - MOTOR OUTBOARD VERT | .041 In/Sec | .336 G-s |
| 21 | - MOTOR INBOARD HORIZ | .039 In/Sec | .238 G-s |
| 22 | - MOTOR INBOARD VERT | .051 In/Sec | .191 G-s |
| 23 | - MOTOR INBOARD AXIAL | .037 In/Sec | .115 G-s |
| 71 | - PUMP CPLG END HORIZ | .033 In/Sec | .173 G-s |
| 72 | - PUMP CPLG END VERT | .035 In/Sec | .187 G-s |
| 73 | - PUMP CPLG END AXIAL | .028 In/Sec | .087 G-s |
| 81 | - PUMP OPP END HORIZ | .023 In/Sec | .151 G-s |
| 82 | - PUMP OPP END VERT | .029 In/Sec | .055 G-s |

YB PUMP 1 - YELLOW BOX FILTERED WATER (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .096 In/Sec | .570 G-s |
| 12 | - MOTOR OUTBOARD VERT | .076 In/Sec | .586 G-s |
| 21 | - MOTOR INBOARD HORIZ | .130 In/Sec | .250 G-s |
| 22 | - MOTOR INBOARD VERT | .120 In/Sec | .248 G-s |
| 23 | - MOTOR INBOARD AXIAL | .122 In/Sec | .206 G-s |
| 71 | - PUMP CPLG END HORIZ | .363 In/Sec | .529 G-s |
| 72 | - PUMP CPLG END VERT | .228 In/Sec | .844 G-s |
| 73 | - PUMP CPLG END AXIAL | .163 In/Sec | .571 G-s |
| 81 | - PUMP OPP END HORIZ | .192 In/Sec | .300 G-s |
| 82 | - PUMP OPP END VERT | .157 In/Sec | .608 G-s |

SW PUMP 8 - SERVICE WATER PUMP 8 (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .114 In/Sec | .149 G-s |
| 12 | - MOTOR OUTBOARD VERT | .288 In/Sec | .646 G-s |
| 21 | - MOTOR INBOARD HORIZ | .078 In/Sec | .556 G-s |
| 22 | - MOTOR INBOARD VERT | .199 In/Sec | .571 G-s |
| 23 | - MOTOR INBOARD AXIAL | .563 In/Sec | .652 G-s |
| 71 | - PUMP CPLG END HORIZ | .305 In/Sec | .705 G-s |
| 72 | - PUMP CPLG END VERT | .219 In/Sec | .540 G-s |
| 73 | - PUMP CPLG END AXIAL | .082 In/Sec | .762 G-s |
| 81 | - PUMP OPP END HORIZ | .156 In/Sec | .562 G-s |
| 82 | - PUMP OPP END VERT | .152 In/Sec | .512 G-s |

| SW PUMP 3 - SERVICE WATER PUMP 3 | (08-Jan-21) | |
|---|---|---|
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .244 In/Sec | .522 G-s |
| 12 - MOTOR OUTBOARD VERT | .151 In/Sec | .340 G-s |
| 21 - MOTOR INBOARD HORIZ | .253 In/Sec | 1.152 G-s |
| 22 - MOTOR INBOARD VERT | .082 In/Sec | 1.264 G-s |
| 23 - MOTOR INBOARD AXIAL | .105 In/Sec | .566 G-s |
| 71 - PUMP CPLG END HORIZ | .214 In/Sec | 1.399 G-s |
| 72 - PUMP CPLG END VERT | .133 In/Sec | .893 G-s |
| 73 - PUMP CPLG END AXIAL | .185 In/Sec | 1.700 G-s |
| 81 - PUMP OPP END HORIZ | .120 In/Sec | 1.774 G-s |
| 82 - PUMP OPP END VERT | .089 In/Sec | 1.442 G-s |

| SW PUMP 5 - SERVICE WATER PUMP 5 | (08-Jan-21) | |
|---|---|---|
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .481 In/Sec | .753 G-s |
| 12 - MOTOR OUTBOARD VERT | .420 In/Sec | .942 G-s |
| 21 - MOTOR INBOARD HORIZ | .339 In/Sec | .949 G-s |
| 22 - MOTOR INBOARD VERT | .304 In/Sec | 1.539 G-s |
| 23 - MOTOR INBOARD AXIAL | .093 In/Sec | 1.248 G-s |
| 71 - PUMP CPLG END HORIZ | .326 In/Sec | 2.803 G-s |
| 72 - PUMP CPLG END VERT | .247 In/Sec | 1.734 G-s |
| 73 - PUMP CPLG END AXIAL | .340 In/Sec | 6.303 G-s |
| 81 - PUMP OPP END HORIZ | .359 In/Sec | 4.966 G-s |
| 82 - PUMP OPP END VERT | .184 In/Sec | 3.168 G-s |

| RO 2 - RO WATER PUMP 2 | (08-Jan-21) | |
|---|---|---|
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .070 In/Sec | .473 G-s |
| 12 - MOTOR OUTBOARD VERT | .079 In/Sec | .770 G-s |
| 21 - MOTOR INBOARD HORIZ | .065 In/Sec | .853 G-s |
| 22 - MOTOR INBOARD VERT | .090 In/Sec | .431 G-s |
| 23 - MOTOR INBOARD AXIAL | .076 In/Sec | .413 G-s |
| 71 - PUMP CPLG END HORIZ | .347 In/Sec | 1.099 G-s |
| 72 - PUMP CPLG END VERT | .166 In/Sec | .570 G-s |
| 73 - PUMP CPLG END AXIAL | .201 In/Sec | .750 G-s |
| 81 - PUMP OPP END HORIZ | .168 In/Sec | 1.202 G-s |
| 82 - PUMP OPP END VERT | .135 In/Sec | .720 G-s |

| AMMCOMP 1 - AMMONIA COMP #1 | (08-Jan-21) | |
|---|---|---|
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .143 In/Sec | .047 G-s |
| 12 - MOTOR OUTBOARD VERT | .143 In/Sec | .080 G-s |
| 13 - MOTOR OUTBOARD AXIAL | .164 In/Sec | .071 G-s |
| 21 - MOTOR INBOARD HORIZ | .117 In/Sec | .097 G-s |
| 22 - MOTOR INBOARD VERT | .133 In/Sec | .049 G-s |
| 23 - MOTOR INBOARD AXIAL | .173 In/Sec | .054 G-s |
| 71 - MALE - CPLG END HORIZ | .136 In/Sec | 1.207 G-s |
| 72 - MALE - CPLG END VERT | .155 In/Sec | .778 G-s |
| 73 - MALE-CPLG END AXIAL | .156 In/Sec | .746 G-s |
| 81 - MALE- OPP END HORIZ | .091 In/Sec | .615 G-s |
| 82 - MALE- OPP END VERT | .100 In/Sec | .485 G-s |
| 83 - MALE-OPP END AXIAL | .141 In/Sec | .863 G-s |
| 71F - FEMALE - CPLG END HORIZ | .129 In/Sec | .970 G-s |
| 72F - FEMALE- CPLG END VERT | .105 In/Sec | .873 G-s |
| 73F - FEMALE-CPLG END AXIAL | .155 In/Sec | .893 G-s |
| 81F - FEMALE- OPP END HORIZ | .088 In/Sec | .605 G-s |

| | | |
|---|---|---|
| 82F - FEMALE- OPP END VERT | .128 In/Sec | .383 G-s |
| 83F - FEMALE- OPP END AXIAL | .184 In/Sec | .595 G-s |

AMMCOMP 3 - AMMONIA COMP #3 (08-Jan-21)

| | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|
| 11 - MOTOR OUTBOARD HORIZ | .236 In/Sec | .105 G-s |
| 11H - MOTOR OUTBOARD HORIZ HIFREQ | .237 In/Sec | .154 G-s |
| 12 - MOTOR OUTBOARD VERT | .456 In/Sec | .549 G-s |
| 12H - MOTOR OUTBOARD VERT HIGH FREQ | .435 In/Sec | .458 G-s |
| 13 - MOTOR OUTBOARD AXIAL | .058 In/Sec | .394 G-s |
| 21 - MOTOR INBOARD HORIZ | .157 In/Sec | .380 G-s |
| 22 - MOTOR INBOARD VERT | .326 In/Sec | .223 G-s |
| 23 - MOTOR INBOARD AXIAL | .138 In/Sec | .498 G-s |
| 71 - MALE - CPLG END HORIZ | .190 In/Sec | .548 G-s |
| 72 - MALE - CPLG END VERT | .211 In/Sec | .409 G-s |
| 73 - MALE-CPLG END AXIAL | .127 In/Sec | 1.317 G-s |
| 81 - MALE- OPP END HORIZ | .151 In/Sec | .269 G-s |
| 82 - MALE- OPP END VERT | .135 In/Sec | .383 G-s |
| 83 - MALE-OPP END AXIAL | .205 In/Sec | .205 G-s |
| 71F - FEMALE - CPLG END HORIZ | .156 In/Sec | .623 G-s |
| 72F - FEMALE- CPLG END VERT | .163 In/Sec | .193 G-s |
| 73F - FEMALE-CPLG END AXIAL | .201 In/Sec | 1.025 G-s |
| 81F - FEMALE- OPP END HORIZ | .181 In/Sec | .198 G-s |
| 82F - FEMALE- OPP END VERT | .146 In/Sec | .341 G-s |
| 83F - FEMALE- OPP END AXIAL | .189 In/Sec | .420 G-s |

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

Abbreviated Last Measurement Summary

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Database: Blues_city.rbm
Station: UPPER FLOORS
Report Date: 08-Jan-21 15:08

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|
| 2SHWP - 2ND FLOOR S. HOT WATER PUMP | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .092 In/Sec | .270 G-s |
| 12 - MOTOR OUTBOARD VERT | .350 In/Sec | .415 G-s |
| 21 - MOTOR INBOARD HORIZ | .109 In/Sec | .904 G-s |
| 22 - MOTOR INBOARD VERT | .300 In/Sec | .744 G-s |
| 23 - MOTOR INBOARD AXIAL | .453 In/Sec | .518 G-s |
| 71 - PUMP CPLG END HORIZ | .092 In/Sec | .645 G-s |
| 72 - PUMP CPLG END VERT | .133 In/Sec | .547 G-s |
| 73 - PUMP CPLG END AXIAL | .062 In/Sec | .737 G-s |
| 81 - PUMP OPP END HORIZ | .083 In/Sec | .906 G-s |
| 82 - PUMP OPP END VERT | .082 In/Sec | .745 G-s |
| GF-VP1 - GALLERY DA VAC PUMP-SKID 1 | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .338 In/Sec | .144 G-s |
| 12 - MOTOR OUTBOARD VERT | .324 In/Sec | .220 G-s |

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   21  - MOTOR INBOARD HORIZ                    .154 In/Sec       .464 G-s
   22  - MOTOR INBOARD VERT                     .275 In/Sec       .137 G-s
   23  - MOTOR INBOARD AXIAL                    .370 In/Sec       .223 G-s
   71  - COUPLING END HORIZ                     .153 In/Sec       .686 G-s
   72  - COUPLING END VERT                      .283 In/Sec       .358 G-s
   73  - COUPLING END AXIAL                     .181 In/Sec       .715 G-s
   81  - OPP END HORIZ                          .561 In/Sec      1.733 G-s
   82  - OPP END VERT                           .406 In/Sec       .926 G-s

   GF-DP1     - GALLERY DA DISCH PUMP-SKID 1  (08-Jan-21)
                                               OVERALL LEVEL     1-20 KHZ
   11  - MOTOR OUTBOARD HORIZ                   .185 In/Sec      1.880 G-s
   12  - MOTOR OUTBOARD VERT                    .175 In/Sec       .477 G-s
   21  - MOTOR INBOARD HORIZ                    .109 In/Sec       .775 G-s
   22  - MOTOR INBOARD VERT                     .112 In/Sec      1.089 G-s
   23  - MOTOR INBOARD AXIAL                    .143 In/Sec       .285 G-s

   GF-CP1     - GALLERY DA CIRC PUMP- SKID 1  (08-Jan-21)
                                               OVERALL LEVEL     1-20 KHZ
   11  - MOTOR OUTBOARD HORIZ                   .239 In/Sec       .225 G-s
   12  - MOTOR OUTBOARD VERT                    .330 In/Sec       .315 G-s
   21  - MOTOR INBOARD HORIZ                    .385 In/Sec       .671 G-s
   22  - MOTOR INBOARD VERT                     .132 In/Sec       .750 G-s
   23  - MOTOR INBOARD AXIAL                    .233 In/Sec       .448 G-s

--------------------------------------------------------------------------------
   Clarification Of Vibration Units:
      Acc      -->  G-s      PK
      Vel      -->  In/Sec   PK                      Abbreviated Last Measurement
Summary
                     ***********************************

                Database:  Blues_city.rbm
                Station:   BREWING 1ST FLOOR
                Report Date:  08-Jan-21   15:08

          MEASUREMENT POINT                    OVERALL LEVEL       HFD / VHFD
          -----------------                    -------------       ----------

               ***  NO DATA Was Found That Meets the Report Specification ***
Abbreviated Last Measurement Summary
                     ***********************************

                Database:  Blues_city.rbm
                Station:   BREWING BASEMENT
                Report Date:  08-Jan-21   15:08

          MEASUREMENT POINT                    OVERALL LEVEL       HFD / VHFD
          -----------------                    -------------       ----------

               ***  NO DATA Was Found That Meets the Report Specification ***
Abbreviated Last Measurement Summary
                     ***********************************

                Database:  Blues_city.rbm
                Station:   GRAIN TRANSFER
                Report Date:  08-Jan-21   15:08
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| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|

*** NO DATA Was Found That Meets the Report Specification ***

Abbreviated Last Measurement Summary

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Database: Blues_city.rbm
Station: SUGAR PUMPS
Report Date: 08-Jan-21 15:08

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|
| V3 - SUGAR TANK VIKING PUMP #3 | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OB HORZ | .109 In/Sec | .217 G-s |
| 12 - MOTOR OB VERT | .161 In/Sec | .148 G-s |
| 21 - MOTOR IB HORZ | .053 In/Sec | .589 G-s |
| 22 - MOTOR IB VERT | .121 In/Sec | .292 G-s |
| 23 - MOTOR IB AXIAL | .085 In/Sec | .416 G-s |
| 31 - GEARBOX INPUT HORZ | .148 In/Sec | 1.537 G-s |
| 32 - GEARBOX INPUT VERT | .099 In/Sec | .635 G-s |
| 33 - GEARBOX INPUT AXIAL | .077 In/Sec | .403 G-s |
| 61 - GEARBOX OUTPUT HORZ | .160 In/Sec | .883 G-s |
| 62 - GEARBOX OUTPUT VERT | .170 In/Sec | .089 G-s |
| 63 - GEARBOX OUTPUT AXIAL | .048 In/Sec | .390 G-s |
| 71 - PUMP IB HORZ | .180 In/Sec | .270 G-s |
| 72 - PUMP IB VERT | .066 In/Sec | .168 G-s |
| 73 - PUMP IB AXIAL | .039 In/Sec | .363 G-s |
| V5 - SUGAR TANK VIKING PUMP #5 | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OB HORZ | .057 In/Sec | .503 G-s |
| 12 - MOTOR OB VERT | .026 In/Sec | .501 G-s |
| 21 - MOTOR IB HORZ | .095 In/Sec | .669 G-s |
| 22 - MOTOR IB VERT | .047 In/Sec | .744 G-s |
| 23 - MOTOR IB AXIAL | .055 In/Sec | .556 G-s |
| 71 - PUMP IB HORZ | .114 In/Sec | .945 G-s |
| 72 - PUMP IB VERT | .098 In/Sec | 1.141 G-s |
| 73 - PUMP IB AXIAL | .081 In/Sec | .545 G-s |
| 81 - PUMP OB HORZ | .076 In/Sec | .588 G-s |
| 82 - PUMP OB VERT | .066 In/Sec | .588 G-s |

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

Abbreviated Last Measurement Summary

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Database: Blues_city.rbm
Station: ALCOHOL PUMP ROOM
Report Date: 08-Jan-21 15:08

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|

| | | | |
|---|---|---|---|
| SK1 RO1 | - SKID 1 - RO PUMP #1 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .064 In/Sec | .733 G-s |
| 12 | - MOTOR OUTBOARD VERT | .041 In/Sec | .542 G-s |
| 21 | - MOTOR INBOARD HORIZ | .107 In/Sec | .308 G-s |
| 22 | - MOTOR INBOARD VERT | .183 In/Sec | .282 G-s |
| 23 | - MOTOR INBOARD AXIAL | .103 In/Sec | .415 G-s |
| SK1 RO4 | - SKID 1 - RO PUMP #4 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .061 In/Sec | .133 G-s |
| 12 | - MOTOR OUTBOARD VERT | .107 In/Sec | .189 G-s |
| 21 | - MOTOR INBOARD HORIZ | .070 In/Sec | .141 G-s |
| 22 | - MOTOR INBOARD VERT | .069 In/Sec | .240 G-s |
| 23 | - MOTOR INBOARD AXIAL | .085 In/Sec | .135 G-s |
| SK1 RO3 | - SKID 1 - RO PUMP #3 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .206 In/Sec | .848 G-s |
| 12 | - MOTOR OUTBOARD VERT | .197 In/Sec | .354 G-s |
| 21 | - MOTOR INBOARD HORIZ | .168 In/Sec | .807 G-s |
| 22 | - MOTOR INBOARD VERT | .175 In/Sec | .135 G-s |
| 23 | - MOTOR INBOARD AXIAL | .136 In/Sec | .445 G-s |
| 71 | - PUMP CPLG END HORIZ | .141 In/Sec | .786 G-s |
| 72 | - PUMP CPLG END VERT | .148 In/Sec | .434 G-s |
| 73 | - PUMP CPLG END AXIAL | .163 In/Sec | .296 G-s |
| 81 | - PUMP OPP END HORIZ | .114 In/Sec | .584 G-s |
| 82 | - PUMP OPP END VERT | .129 In/Sec | .820 G-s |
| SK1 RO2 | - SKID 1 - RO PUMP #2 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .063 In/Sec | .456 G-s |
| 12 | - MOTOR OUTBOARD VERT | .049 In/Sec | .706 G-s |
| 21 | - MOTOR INBOARD HORIZ | .061 In/Sec | .733 G-s |
| 22 | - MOTOR INBOARD VERT | .050 In/Sec | .445 G-s |
| 23 | - MOTOR INBOARD AXIAL | .063 In/Sec | .207 G-s |
| 71 | - PUMP CPLG END HORIZ | .082 In/Sec | .880 G-s |
| 72 | - PUMP CPLG END VERT | .030 In/Sec | .398 G-s |
| 73 | - PUMP CPLG END AXIAL | .123 In/Sec | .174 G-s |
| 81 | - PUMP OPP END HORIZ | .081 In/Sec | 1.017 G-s |
| 82 | - PUMP OPP END VERT | .059 In/Sec | .737 G-s |
| SK2 RO1 | - SKID 2 - RO PUMP #1 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .085 In/Sec | .058 G-s |
| 12 | - MOTOR OUTBOARD VERT | .111 In/Sec | .043 G-s |
| 21 | - MOTOR INBOARD HORIZ | .078 In/Sec | .105 G-s |
| 22 | - MOTOR INBOARD VERT | .101 In/Sec | .090 G-s |
| 23 | - MOTOR INBOARD AXIAL | .124 In/Sec | .140 G-s |
| SK2 RO4 | - SKID 2 - RO PUMP #4 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .066 In/Sec | .094 G-s |
| 12 | - MOTOR OUTBOARD VERT | .094 In/Sec | .070 G-s |
| 21 | - MOTOR INBOARD HORIZ | .064 In/Sec | .091 G-s |

| | | | |
|---|---|---|---|
| 22 - MOTOR INBOARD VERT | | .068 In/Sec | .100 G-s |
| 23 - MOTOR INBOARD AXIAL | | .082 In/Sec | .052 G-s |
| SK2 RO3 - SKID 2 - RO PUMP #3 | (08-Jan-21) | | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | | .217 In/Sec | 2.403 G-s |
| 12 - MOTOR OUTBOARD VERT | | .343 In/Sec | .996 G-s |
| 21 - MOTOR INBOARD HORIZ | | .141 In/Sec | .730 G-s |
| 22 - MOTOR INBOARD VERT | | .340 In/Sec | .477 G-s |
| 23 - MOTOR INBOARD AXIAL | | .125 In/Sec | .294 G-s |
| 71 - PUMP CPLG END HORIZ | | .149 In/Sec | .611 G-s |
| 72 - PUMP CPLG END VERT | | .279 In/Sec | .855 G-s |
| 73 - PUMP CPLG END AXIAL | | .329 In/Sec | .287 G-s |
| 81 - PUMP OPP END HORIZ | | .141 In/Sec | .539 G-s |
| 82 - PUMP OPP END VERT | | .164 In/Sec | .443 G-s |
| SK2 RO2 - SKID 2 - RO PUMP #2 | (08-Jan-21) | | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | | .056 In/Sec | .205 G-s |
| 12 - MOTOR OUTBOARD VERT | | .037 In/Sec | .467 G-s |
| 21 - MOTOR INBOARD HORIZ | | .052 In/Sec | .841 G-s |
| 22 - MOTOR INBOARD VERT | | .038 In/Sec | .672 G-s |
| 23 - MOTOR INBOARD AXIAL | | .026 In/Sec | .801 G-s |
| 71 - PUMP CPLG END HORIZ | | .075 In/Sec | .346 G-s |
| 72 - PUMP CPLG END VERT | | .049 In/Sec | .370 G-s |
| 73 - PUMP CPLG END AXIAL | | .150 In/Sec | .059 G-s |
| 81 - PUMP OPP END HORIZ | | .086 In/Sec | .722 G-s |
| 82 - PUMP OPP END VERT | | .094 In/Sec | .481 G-s |

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

Abbreviated Last Measurement Summary

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Database: Blues_city.rbm
Station: ADMINISTRATIVE AREA
Report Date: 08-Jan-21 15:08

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|
| HVAC COLD - HVAC COLD GLYCOL CIRC PUMP | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .073 In/Sec | .859 G-s |
| 12 - MOTOR OUTBOARD VERT | .066 In/Sec | .494 G-s |
| 21 - MOTOR INBOARD HORIZ | .095 In/Sec | .283 G-s |
| 22 - MOTOR INBOARD VERT | .063 In/Sec | .279 G-s |
| 23 - MOTOR INBOARD AXIAL | .084 In/Sec | .122 G-s |
| 71 - PUMP CPLG END HORIZ | .170 In/Sec | .216 G-s |
| 72 - PUMP CPLG END VERT | .147 In/Sec | .293 G-s |
| 73 - PUMP CPLG END AXIAL | .048 In/Sec | .188 G-s |
| 81 - PUMP OPP END HORIZ | .205 In/Sec | .181 G-s |
| 82 - PUMP OPP END VERT | .134 In/Sec | .195 G-s |
| HVAC HOT - HVAC HOT WATER CIRC PUMP | (08-Jan-21) | |

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .162 In/Sec | .495 G-s |
| 12 | - MOTOR OUTBOARD VERT | .185 In/Sec | .885 G-s |
| 21 | - MOTOR INBOARD HORIZ | .152 In/Sec | .587 G-s |
| 22 | - MOTOR INBOARD VERT | .234 In/Sec | 1.024 G-s |
| 23 | - MOTOR INBOARD AXIAL | .268 In/Sec | .261 G-s |
| 71 | - PUMP CPLG END HORIZ | .306 In/Sec | 1.827 G-s |
| 72 | - PUMP CPLG END VERT | .253 In/Sec | 1.890 G-s |
| 73 | - PUMP CPLG END AXIAL | .477 In/Sec | 3.907 G-s |
| 81 | - PUMP OPP END HORIZ | .308 In/Sec | .744 G-s |
| 82 | - PUMP OPP END VERT | .232 In/Sec | .888 G-s |

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

Abbreviated Last Measurement Summary

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Database: Blues_city.rbm
Station: FILTER CELLAR
Report Date: 08-Jan-21 15:08

| MEASUREMENT POINT | | OVERALL LEVEL | HFD / VHFD |
|---|---|---|---|
| CHILL 1 | - CHILL WATER CIRC PUMP #1 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .575 In/Sec | .710 G-s |
| 12 | - MOTOR OUTBOARD VERT | .098 In/Sec | .528 G-s |
| 21 | - MOTOR INBOARD HORIZ | .625 In/Sec | 1.073 G-s |
| 22 | - MOTOR INBOARD VERT | .215 In/Sec | .922 G-s |
| 23 | - MOTOR INBOARD AXIAL | .190 In/Sec | 1.556 G-s |
| 71 | - PUMP CPLG END HORIZ | .192 In/Sec | .598 G-s |
| 72 | - PUMP CPLG END VERT | .081 In/Sec | .575 G-s |
| 73 | - PUMP CPLG END AXIAL | .102 In/Sec | .927 G-s |
| 81 | - PUMP OPP END HORIZ | .100 In/Sec | .910 G-s |
| 82 | - PUMP OPP END VERT | .040 In/Sec | .162 G-s |
| WARM GLY 1 | - WARM GLYCOL PUMP #1 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .043 In/Sec | .209 G-s |
| 12 | - MOTOR OUTBOARD VERT | .029 In/Sec | .292 G-s |
| 21 | - MOTOR INBOARD HORIZ | .079 In/Sec | .349 G-s |
| 22 | - MOTOR INBOARD VERT | .082 In/Sec | .155 G-s |
| 23 | - MOTOR INBOARD AXIAL | .113 In/Sec | .057 G-s |
| 71 | - PUMP CPLG END HORIZ | .312 In/Sec | .687 G-s |
| 72 | - PUMP CPLG END VERT | .176 In/Sec | .429 G-s |
| 73 | - PUMP CPLG END AXIAL | .117 In/Sec | .797 G-s |
| 81 | - PUMP OPP END HORIZ | .114 In/Sec | .371 G-s |
| WARM GLY 2 | - WARM GLYCOL PUMP #2 | (08-Jan-21) | |
| | | OVERALL LEVEL | 1-20 KHZ |
| 11 | - MOTOR OUTBOARD HORIZ | .050 In/Sec | .193 G-s |
| 12 | - MOTOR OUTBOARD VERT | .031 In/Sec | .218 G-s |
| 21 | - MOTOR INBOARD HORIZ | .061 In/Sec | .336 G-s |
| 22 | - MOTOR INBOARD VERT | .031 In/Sec | .373 G-s |

| | | | |
|---|---|---|---|
| 23 | - MOTOR INBOARD AXIAL | .033 In/Sec | .084 G-s |
| 71 | - PUMP CPLG END HORIZ | .032 In/Sec | .036 G-s |
| 72 | - PUMP CPLG END VERT | .052 In/Sec | .108 G-s |
| 73 | - PUMP CPLG END AXIAL | .059 In/Sec | .054 G-s |
| 81 | - PUMP OPP END HORIZ | .027 In/Sec | .067 G-s |
| 82 | - PUMP OPP END VERT | .025 In/Sec | .062 G-s |

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

Abbreviated Last Measurement Summary

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Database: Blues_city.rbm
Station: GOVERNMENT CELLAR
Report Date: 08-Jan-21 15:08

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|
| COLD GLY 3 - COLD GLYCOL PUMP #3 | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .034 In/Sec | .089 G-s |
| 12 - MOTOR OUTBOARD VERT | .032 In/Sec | .422 G-s |
| 21 - MOTOR INBOARD HORIZ | .046 In/Sec | .083 G-s |
| 22 - MOTOR INBOARD VERT | .039 In/Sec | .251 G-s |
| 23 - MOTOR INBOARD AXIAL | .050 In/Sec | .079 G-s |
| 71 - PUMP CPLG END HORIZ | .146 In/Sec | .133 G-s |
| 72 - PUMP CPLG END VERT | .070 In/Sec | .098 G-s |
| 73 - PUMP CPLG END AXIAL | .069 In/Sec | .023 G-s |
| 81 - PUMP OPP END HORIZ | .103 In/Sec | .129 G-s |
| 82 - PUMP OPP END VERT | .043 In/Sec | .112 G-s |
| COLD GLY 4 - COLD GLYCOL PUMP #4 | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .093 In/Sec | .176 G-s |
| 12 - MOTOR OUTBOARD VERT | .038 In/Sec | .431 G-s |
| 21 - MOTOR INBOARD HORIZ | .089 In/Sec | .495 G-s |
| 22 - MOTOR INBOARD VERT | .082 In/Sec | .641 G-s |
| 23 - MOTOR INBOARD AXIAL | .096 In/Sec | .173 G-s |
| 71 - PUMP CPLG END HORIZ | .199 In/Sec | 1.575 G-s |
| 72 - PUMP CPLG END VERT | .137 In/Sec | 1.590 G-s |
| 73 - PUMP CPLG END AXIAL | .193 In/Sec | 1.142 G-s |
| 81 - PUMP OPP END HORIZ | .249 In/Sec | .947 G-s |
| 82 - PUMP OPP END VERT | .129 In/Sec | .940 G-s |
| COLD GLY 5 - COLD GLYCOL PUMP #5 | (08-Jan-21) | |
| | OVERALL LEVEL | 1-20 KHZ |
| 11 - MOTOR OUTBOARD HORIZ | .056 In/Sec | .215 G-s |
| 12 - MOTOR OUTBOARD VERT | .038 In/Sec | .154 G-s |
| 21 - MOTOR INBOARD HORIZ | .067 In/Sec | .183 G-s |
| 22 - MOTOR INBOARD VERT | .042 In/Sec | .209 G-s |
| 23 - MOTOR INBOARD AXIAL | .052 In/Sec | .085 G-s |
| 71 - PUMP CPLG END HORIZ | .049 In/Sec | .038 G-s |
| 72 - PUMP CPLG END VERT | .022 In/Sec | .100 G-s |
| 73 - PUMP CPLG END AXIAL | .039 In/Sec | .079 G-s |

| | | |
|---|---|---|
| 81 - PUMP OPP END HORIZ | .028 In/Sec | .090 G-s |
| 82 - PUMP OPP END VERT | .028 In/Sec | .083 G-s |

COLD GLY 6 - COLD GLYCOL PUMP #6 (08-Jan-21)

| | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|
| 11 - MOTOR OUTBOARD HORIZ | .042 In/Sec | .214 G-s |
| 12 - MOTOR OUTBOARD VERT | .042 In/Sec | .441 G-s |
| 21 - MOTOR INBOARD HORIZ | .093 In/Sec | .354 G-s |
| 22 - MOTOR INBOARD VERT | .044 In/Sec | .351 G-s |
| 23 - MOTOR INBOARD AXIAL | .057 In/Sec | .505 G-s |
| 71 - PUMP CPLG END HORIZ | .036 In/Sec | .090 G-s |
| 72 - PUMP CPLG END VERT | .023 In/Sec | .075 G-s |
| 73 - PUMP CPLG END AXIAL | .036 In/Sec | .174 G-s |
| 81 - PUMP OPP END HORIZ | .028 In/Sec | .096 G-s |
| 82 - PUMP OPP END VERT | .031 In/Sec | .079 G-s |

PACK GLY 2 - PACKAGING COLD GLYCOL PUMP 2 (08-Jan-21)

| | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|
| 11 - MOTOR OUTBOARD HORIZ | .017 In/Sec | 1.765 G-s |
| 12 - MOTOR OUTBOARD VERT | .041 In/Sec | .756 G-s |
| 21 - MOTOR INBOARD HORIZ | .017 In/Sec | 1.632 G-s |
| 22 - MOTOR INBOARD VERT | .019 In/Sec | .605 G-s |
| 23 - MOTOR INBOARD AXIAL | .016 In/Sec | .815 G-s |
| 71 - PUMP CPLG END HORIZ | .030 In/Sec | .423 G-s |
| 72 - PUMP CPLG END VERT | .011 In/Sec | .209 G-s |
| 73 - PUMP CPLG END AXIAL | .028 In/Sec | .272 G-s |
| 81 - PUMP OPP END HORIZ | .022 In/Sec | .149 G-s |
| 82 - PUMP OPP END VERT | .014 In/Sec | .228 G-s |

NANO 126 - NANO SKID PUMP 126 (08-Jan-21)

| | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|
| 11 - MOTOR OUTBOARD HORIZ | .115 In/Sec | .375 G-s |
| 12 - MOTOR OUTBOARD VERT | .068 In/Sec | .348 G-s |
| 21 - MOTOR INBOARD HORIZ | .168 In/Sec | .605 G-s |
| 22 - MOTOR INBOARD VERT | .103 In/Sec | .526 G-s |
| 23 - MOTOR INBOARD AXIAL | .237 In/Sec | .368 G-s |
| 71 - PUMP CPLG END HORIZ | .083 In/Sec | .463 G-s |
| 72 - PUMP CPLG END VERT | .151 In/Sec | .412 G-s |
| 73 - PUMP CPLG END AXIAL | .165 In/Sec | .034 G-s |
| 81 - PUMP OPP END HORIZ | .285 In/Sec | .340 G-s |
| 82 - PUMP OPP END VERT | .090 In/Sec | .269 G-s |

NANO 127 - NANO SKID PUMP 127 (08-Jan-21)

| | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|
| 11 - MOTOR OUTBOARD HORIZ | .091 In/Sec | .284 G-s |
| 12 - MOTOR OUTBOARD VERT | .143 In/Sec | 1.028 G-s |
| 21 - MOTOR INBOARD HORIZ | .163 In/Sec | .575 G-s |
| 22 - MOTOR INBOARD VERT | .232 In/Sec | .551 G-s |
| 23 - MOTOR INBOARD AXIAL | .156 In/Sec | .309 G-s |
| 71 - PUMP CPLG END HORIZ | .073 In/Sec | .467 G-s |
| 72 - PUMP CPLG END VERT | .215 In/Sec | .494 G-s |
| 73 - PUMP CPLG END AXIAL | .146 In/Sec | .235 G-s |
| 81 - PUMP OPP END HORIZ | .103 In/Sec | .221 G-s |
| 82 - PUMP OPP END VERT | .243 In/Sec | .390 G-s |

NANO 128 - NANO SKID PUMP 128 (08-Jan-21)

| | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|

| | | | |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .805 In/Sec | .246 G-s |
| 12 | - MOTOR OUTBOARD VERT | .680 In/Sec | .755 G-s |
| 21 | - MOTOR INBOARD HORIZ | .652 In/Sec | .712 G-s |
| 22 | - MOTOR INBOARD VERT | .218 In/Sec | .621 G-s |
| 23 | - MOTOR INBOARD AXIAL | .474 In/Sec | .300 G-s |
| 71 | - PUMP CPLG END HORIZ | .206 In/Sec | .378 G-s |
| 72 | - PUMP CPLG END VERT | .482 In/Sec | .450 G-s |
| 73 | - PUMP CPLG END AXIAL | .656 In/Sec | .221 G-s |
| 81 | - PUMP OPP END HORIZ | .211 In/Sec | .363 G-s |
| 82 | - PUMP OPP END VERT | .337 In/Sec | .380 G-s |

NANO 129 - NANO SKID PUMP 129 (08-Jan-21)

| | | OVERALL LEVEL | 1-20 KHZ |
|---|---|---|---|
| 11 | - MOTOR OUTBOARD HORIZ | .107 In/Sec | .649 G-s |
| 12 | - MOTOR OUTBOARD VERT | .149 In/Sec | 2.104 G-s |
| 21 | - MOTOR INBOARD HORIZ | .151 In/Sec | 2.011 G-s |
| 22 | - MOTOR INBOARD VERT | .156 In/Sec | 2.019 G-s |
| 23 | - MOTOR INBOARD AXIAL | .135 In/Sec | .587 G-s |
| 71 | - PUMP CPLG END HORIZ | .144 In/Sec | .497 G-s |
| 72 | - PUMP CPLG END VERT | .110 In/Sec | .559 G-s |
| 73 | - PUMP CPLG END AXIAL | .168 In/Sec | .128 G-s |
| 81 | - PUMP OPP END HORIZ | .065 In/Sec | .431 G-s |
| 82 | - PUMP OPP END VERT | .124 In/Sec | .457 G-s |

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

Abbreviated Last Measurement Summary

**********

Database: Blues_city.rbm
Station: UNUSED / REMOVED
Report Date: 08-Jan-21 15:08

| MEASUREMENT POINT | OVERALL LEVEL | HFD / VHFD |
|---|---|---|

*** NO DATA Was Found That Meets the Report Specification ***