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January 21, 2021

NUCOR Melt Shop Subject: January 2021 vibration survey

Most of the machines surveyed were found to be in good condition except for the following:

QualiTest® uses a four-step rating system for defects.

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

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

<u>Class III</u>; 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.

<u>Class IV</u>; 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.

Defects

West Caster Mold Water Pump

High 1 x rpm vibration is present in the motor axial. This indicates angular misalignment. Motor and pump may also have some internal wear. Perform a precision alignment with less than .003" offset and angularity. Ensure there is no soft foot present in the motor. Rated as a **CLASS II** defect.

East Caster Mold Water Pump

Pump is still showing some signs of internal wear. Coupling may also be wearing due to misalignment. Perform a precision alignment with less than .003" offset and angularity. Ensure there is no soft foot present. Rated as a **CLASS I** defect.

West Booster Pump

Pump data shows another increase in non-synchronous vibration at the outboard end of the pump. This is good indication of bearing defects taking place in the pump bearings. Pump will need attention SOON. Rated as a **CLASS III** defect.

Cooling Tower #2 Supply Pump

The pump appears to have cavitation which is causing a high noise floor in the spectrum. This is also making the ODE pump bearing have high acceleration. This could also be a bearing issues, but the noise floor is masking the data somewhat. Pump impeller or other pump internals may also be worn which could be causing this vibration. Pump needs to be inspected as time allows. Rated as a **CLASS II** defect.

Cooling Tower #3 Supply Pump

The pump appears to have cavitation which is causing a high noise floor in the spectrum. This is also making the ODE pump bearing have high acceleration. This could also be a bearing issues, but the noise floor is masking the data somewhat. Pump impeller or other pump internals could also be worn which could be causing this vibration. Pump needs to be inspected as time allows. Rated as a **CLASS II** defect.

Cooling Tower #6 Supply Pump

The pump vibration data is still indicating that there is bearing wear, and possibly cavitation in the pump. Inspect ODE pump bearing SOON. Ensure the pump has no inlet restrictions and is operating in the correct part of the curve. Rated as a **CLASS II** defect.

Middle 2nd Deck Hyd. Pump

Pump data indicates internal wear of the hydraulic pump. Ensure coupling is good as well. Rated as a **CLASS II** defect.

South 2nd Deck Hyd. Pump

Pump data indicates internal wear of the hydraulic pump. Pump/coupling likely need attention soon. Rated as a CLASS II defect.

Spray Chamber Exhaust Fan

Fan vibration is lower this survey; however, issues still exist. Outboard fan bearing is showing signs of defects/wear. Inspect fan bearings especially the ODE fan bearing for defects and proper lubrication. This unit is very likely operating near a critical speed and is resonant which is likely influencing the high vibration in the motor and fan. It is recommended to replace the fan and fan shaft assembly as downtime allows. Fan has excessive build up and fan shaft is possibly bent and or worn. We will continue to monitor this closely. Rated as a **CLASS III** defect.

West Furnace Baghouse Fan

Fan data is showing a slight uprise in fan speed vibration that is likely due to imbalance of the fan wheel. There has also been an increase in high frequency vibration which most appears to be possible lubrication issue. Bearing also appears to have some peaks that indicate possible cage or race issue. It is recommended to inspect the bearing gaps and cage for issues at next down day. Ensure grease is adequate and clean. Rated as a **CLASS II** defect.

Caster Baghouse Reverse Air Fan

Abbreviated Last Measurement Summary

Motor has had a sudden increase in acceleration in the motor axial position. A good bit of noise can be seen in the spectrum. This may be caused by the drive end bearing being a two-piece NU series bearing. Lubrication may also play a factor. Two-piece bearings can sometimes have some skidding of the rollers if minimal radial load exists. For now, ensure motor has adequate grease. We will monitor this issue closely. Rated as a **CLASS I** defect.

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	Database: n	ucorja9.rbm	
	Station: M	elt Shop	
MEASUREM	ENT POINT	OVERALL LEVEL	HFD / VHFD
WCMWP	- WEST CAS	TER MOLD WATER PUMP (15-Jan-21)
		OVERALL LEVEL	1K-20KHz
M	ОН	.117 In/Sec	.688 G-s
M	IH	.106 In/Sec	.924 G-s
M		.231 In/Sec	.766 G-s
P	IA 	.214 In/Sec	.991 G-s
P	IH OH	.195 In/Sec 205 In/Sec	.629 G-s 747 C-s
E	011	.205 11/360	. / 4/ 6-5
ICMWP	- MID CAST	ER MOLD WATER PUMP (15-Jan-21)
		OVERALL LEVEL	1K-20KHz
M	ОН	.069 In/Sec	.603 G-s
M	IH 	.076 In/Sec	.614 G-s
M		.109 In/Sec	.747 G-s
P	IA 	.116 In/Sec	1.024 G-s
P	IH	.163 In/Sec	.917 G-s
P	ОН	.086 In/Sec	1.093 G-s
EBOSTRP	- EAST Boo	ster PUMP (15-Jan-21)
		OVERALL LEVEL	1K-20KHz
м	ОН	.061 In/Sec	.422 G-s
M	IH	.054 In/Sec	.239 G-s
M	IA	.052 In/Sec	.105 G-s
P	IA	.084 In/Sec	.092 G-s
P	IH	.077 In/Sec	.065 G-s
P	ОН	.050 In/Sec	.141 G-s
ECSWP 1L	FT - EAST CAS	TER SPRAY WP 1 LEFT (15-Jan-21)
		OVERALL LEVEL	1K-20KHz
м	ОН	.227 In/Sec	.318 G-s
м	IH	.132 In/Sec	.627 G-s
М	IA	.125 In/Sec	.498 G-s
MCSWP 21	FT - MID CAST	ER SPRAY WP 2 LEFT (15-Jan-21)
		OVERALL LEVEL	1K-20KHz
М	ОН	.288 In/Sec	.242 G-s
м	IH	.187 In/Sec	.341 G-s
M	IA	.130 In/Sec	.426 G-s
WCSWP 4R	T - WEST CAS	TER SPRAY WP 4 RIGH (15-Jan-21)
		OVERALL LEVEL	1K-20KHz
м	ОН	.121 In/Sec	.208 G-s

MIH					.096	In/Sec	.910 G-s
MIA					.108	In/Sec	.360 G-s
ESERVOHYDP	_	EAST S	SERVO) Hvd	PUMP		(15-Jan-21)
				1	OVERA	.T. T.F.VFT	1K-20KHz
мон					028		182 C-s
MTH					.020	In/Sec	.102 G S
MIH					.040	In/Sec	.150 G-S
PIV					.215	In/Sec	.426 G-S
							(1 F - 01)
WSERVOHYDP	-	WEST S	SERVO) Hyd	PUMP		(15-Jan-21)
					OVERA	LL LEVEL	1K-20KHz
MOH					.088	In/Sec	.211 G-s
MIH					.073	In/Sec	.213 G-s
PIV					.100	In/Sec	.845 G-s
SERVOHRECP	-	SERVO	Hyd	RECI	RC PUMP		(15-Jan-21)
			-		OVERA	LL LEVEL	1K-20KHz
мон					.048	In/Sec	.086 G-s
мтн					050	In/Sec	193 C-s
DTV					.030	In/Sec	.195 G-S
PIV					.081	In/Sec	.24/ G-S
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ZDEKRECIP	-	2ND DE	CK I	'es H	Ya RECIR	2 PUM	(15-Jan-21)
					OVERA	LL LEVEL	1K-20KHz
MOH					.108	In/Sec	.546 G-s
MIH					.122	In/Sec	.322 G-s
PIV					. 322	In/Sec	2.181 G-s
M2DECKHYDP	_	MIDDLE	E 2NE	DEC	K Hyd PUI	MP	(15-Jan-21)
					OVERA	LL LEVEL	1K-20KHz
мон					112		740 C-s
мти					124	In/Sec	071 C-2
MIII					.124	In/Sec	.071 G-S
PIV					.570	In/Sec	1.594 G-S
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S2DECKHYDP	-	SOUTH	2ND	DECK	Hyd PUM	P	(15-Jan-21)
S2DECKHYDP	-	SOUTH	2ND	DECK	Hyd PUM OVERAI	P LL LEVEL	(15-Jan-21) 1K-20KHz
S2DECKHYDP MOH	-	SOUTH	2ND	DECK	Hyd PUM OVERAI .205	P LL LEVEL In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s
S2DECKHYDP MOH MIH	-	SOUTH	2ND	DECK	Hyd PUM OVERA .205 .205	P LL LEVEL In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s
S2DECKHYDP MOH MIH PIV	-	SOUTH	2nd	DECK	Hyd PUM OVERA .205 .205 .209	P LL LEVEL In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s
S2DECKHYDP MOH MIH PIV	-	SOUTH	2nd	DECK	Hyd PUM OVERAL .205 .205 .209	P LL LEVEL In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP	-	SOUTH #1 Sup	2ND	DECK	Hyd PUM OVERA .205 .205 .209	P LL LEVEL In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21)
S2DECKHYDP MOH MIH PIV 1SUPLYP	-	SOUTH #1 Sur	2ND	DECK	Hyd PUM OVERA .205 .205 .209 OVERA	P LL LEVEL In/Sec In/Sec LL LEVEL	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH	-	SOUTH #1 Sur	2ND	DECK Pump	Hyd PUMI OVERAL .205 .205 .209 OVERAL .042	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MTH	-	SOUTH #1 Sur	2ND	DECK	Hyd PUMI OVERAU .205 .205 .209 OVERAU .042 .055	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s 170 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH	-	SOUTH #1 Sug	2ND	DECK Pump	Hyd PUMI OVERA .205 .205 .209 OVERA .042 .055 .78	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s 103 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA	-	SOUTH #1 Sug	2ND	DECK	Hyd PUM OVERA 205 205 209 OVERA .042 .055 .078	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA	-	SOUTH #1 Sur	2ND	DECK	Hyd PUM OVERA 205 205 209 OVERA .042 .055 .078 .181	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .103 G-s 1.014 G-s 742 C c
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA PIH	-	SOUTH #1 Sur	2ND	DECK	Hyd PUM OVERA 205 205 209 OVERA .042 .055 .078 .181 .173	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA PIH POH	-	SOUTH #1 Sur	2ND	DECK	Hyd PUM OVERA 205 205 209 OVERA 042 055 078 181 173 188	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA PIH POH	-	SOUTH #1 Sup	2ND oply	DECK	Hyd PUM OVERA 205 205 209 OVERA .042 .055 .078 .181 .173 .188	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA PIH POH 2SUPLYP	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump Pump	Hyd PUMI OVERAI .205 .209 OVERAI .042 .055 .078 .181 .173 .188	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21)
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA PIH POH 2SUPLYP	-	SOUTH #1 Sur #2 Sur	2ND oply	DECK Pump Pump	Hyd PUMI OVERAI .205 .209 OVERAI .042 .055 .078 .181 .173 .188 OVERAI	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA PIH POH 2SUPLYP MOH	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump Pump	Hyd PUMI OVERAI .205 .209 OVERAI .042 .055 .078 .181 .173 .188 OVERAI .043	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec LL LEVEL In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIH POH 2SUPLYP MOH MIH	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump Pump	Hyd PUMI OVERAI .205 .209 OVERAI .042 .055 .078 .181 .173 .188 OVERAI .043 .065	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIA PIH POH 2SUPLYP MOH MIH MIA	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump Pump	Hyd PUMI OVERAI .205 .209 OVERAI .042 .055 .078 .181 .173 .188 OVERAI .043 .065 .068	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIH POH 2SUPLYP MOH MIH MIA PIA	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump	Hyd PUMI OVERAI .205 .209 OVERAI .042 .055 .078 .181 .173 .188 OVERAI .043 .065 .068 .191	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIA PIA POH 2SUPLYP MOH MIH MIA PIA PIA PIA PIA PIA	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump	Hyd PUMI OVERAI .205 .209 OVERAI .042 .055 .078 .181 .173 .188 OVERAI .043 .043 .065 .068 .191 .205	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA POH 2SUPLYP MOH MIH MIA PIA PIA PIH POH	-	SOUTH #1 Sup	2ND oply	DECK Pump	Hyd PUMI OVERAL .205 .209 OVERAL .042 .055 .078 .181 .173 .188 OVERAL .043 .065 .068 .191 .205	P LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.193 G-s .534 G-s .448 G-s 1.396 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA POH 2SUPLYP MOH MIH MIA PIA PIH POH	-	SOUTH #1 Sup	2ND oply	DECK Pump	Hyd PUMI OVERAL .205 .209 OVERAL .042 .055 .078 .181 .173 .188 OVERAL .043 .065 .068 .191 .205 .254	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s .448 G-s 1.396 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIH POH SSUPLYP MOH MIH MIA PIA PIH POH	-	SOUTH #1 Sup #2 Sup	2ND oply	Pump	Hyd PUMI OVERAL .205 .209 OVERAL .042 .055 .078 .181 .173 .188 OVERAL .043 .065 .068 .191 .205 .254	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIH POH 2SUPLYP MOH MIH MIA PIA PIH POH	-	SOUTH #1 Sur #2 Sur #5 Sur	2ND oply oply	Pump Pump	Hyd PUMI OVERAL .205 .209 OVERAL .042 .055 .078 .181 .173 .188 OVERAL .043 .065 .068 .191 .205 .254	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21)
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIA POH 2SUPLYP MOH MIH MIA PIA PIA PIA PIA PIA PIA	-	SOUTH #1 Sup #2 Sup #5 Sup	2ND oply oply	DECK Pump Pump	Hyd PUM OVERA 205 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .396 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIA PIA PIA POH 2SUPLYP MOH MIH PIA PIA PIA PIA PIA PIA PIA PIA PIA	-	SOUTH #1 Sur #2 Sur #5 Sur	2ND oply oply	DECK Pump Pump	Hyd PUM OVERA 205 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254 OVERA 043	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH 2SUPLYP MOH MIH 5SUPLYP MOH MIH	-	SOUTH #1 Sup #2 Sup	2ND oply oply	DECK Pump Pump	Hyd PUM OVERA .205 .209 OVERA .042 .055 .078 .181 .173 .188 OVERA .043 .065 .068 .191 .205 .254 OVERA .044 .043	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIA PIH POH 2SUPLYP MOH MIA PIA PIH POH 5SUPLYP MOH MIH MIA	-	SOUTH #1 Sup #2 Sup #5 Sup	2ND oply oply	DECK Pump Pump	Hyd PUM OVERA 205 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254 OVERA 044 043 064	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s .385 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIA PIA PIA PIA PIA PIA PIA PIA PIA	-	SOUTH #1 Sup #2 Sup #5 Sup	2ND oply	DECK Pump Pump	Hyd PUM OVERA 205 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254 OVERA 044 043 064 160	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s .385 G-s 1.406 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIH POH 2SUPLYP MOH MIH MIA PIA PIH POH 5SUPLYP MOH MIH MIA PIA PIH	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump Pump	Hyd PUM OVERA 205 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254 OVERA 044 043 064 160 181	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s .385 G-s 1.406 G-s 1.006 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA POH 2SUPLYP MOH MIH MIA PIA POH 5SUPLYP SSUPLYP MOH MIH POH	-	SOUTH #1 Sup #2 Sup	2ND oply	DECK Pump Pump	Hyd PUM OVERA 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254 OVERA 044 043 064 160 181 209	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s .385 G-s 1.406 G-s 1.006 G-s .999 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA POH 2SUPLYP MOH MIH MIA PIA PIH POH 5SUPLYP SSUPLYP	-	<pre>\$</pre>	2ND oply	DECK Pump Pump	Hyd PUM OVERA 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254 OVERA 044 043 064 160 181 209	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s .385 G-s 1.406 G-s 1.006 G-s .999 G-s
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH MIA PIA POH 2SUPLYP MOH MIH MIA PIA PIH POH 5SUPLYP MOH MIH MIA PIH POH	-	SOUTH #1 Sup #2 Sup #5 Sup #6 Sur	2ND oply oply	DECK Pump Pump Pump	Hyd PUM OVERA 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 068 191 205 254 OVERA 044 043 064 160 181 209	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s .385 G-s 1.006 G-s .999 G-s (15-Jan-21)
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIH POH 2SUPLYP MOH MIH MIA PIA PIH POH 5SUPLYP MOH MIH MIA PIA PIH POH	-	SOUTH #1 Sur #2 Sur #5 Sur #6 Sur	2ND oply oply	DECK Pump Pump Pump	Hyd PUM OVERAL .205 .209 OVERAL .042 .042 .055 .078 .181 .173 .188 OVERAL .043 .065 .254 OVERAL .044 .043 .064 .160 .181 .209	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .573 G-s .385 G-s 1.406 G-s 1.006 G-s .999 G-s (15-Jan-21) 1K-20KHz
S2DECKHYDP MOH MIH PIV 1SUPLYP MOH MIH PIA PIA PIA PIA PIH POH 5SUPLYP MOH MIH MIA PIA PIH POH 5SUPLYP	-	SOUTH #1 Sur #2 Sur #5 Sur #6 Sur	2ND oply oply	DECK Pump Pump Pump	Hyd PUM OVERA 205 205 209 OVERA 042 055 078 181 173 188 OVERA 043 065 205 254 OVERA 044 043 064 160 181 209 OVERA	P LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	(15-Jan-21) 1K-20KHz 2.863 G-s 2.800 G-s 1.891 G-s (15-Jan-21) 1K-20KHz .171 G-s .170 G-s .103 G-s 1.014 G-s .742 G-s .644 G-s (15-Jan-21) 1K-20KHz .354 G-s 1.162 G-s 1.193 G-s .534 G-s 1.396 G-s (15-Jan-21) 1K-20KHz .501 G-s .385 G-s 1.406 G-s 1.006 G-s .999 G-s (15-Jan-21) 1K-20KHz .401 G-s

	MIA		.077	In/Sec	.231 G-s
	PIA		.184	In/Sec	.871 G-s
	PIH		.208	In/Sec	.941 G-s
	POH		.249	In/Sec	1.833 G-s
CBRA		- CASTER BA	AGHOUSE REVERSE	E AIR (15-	Jan-21)
			OVERA	T. T.EVET.	1K-20KH7
	MOH		048		608 C-s
	MTH		.040		.050 G 3
	MIH		.048	In/Sec	.641 G-S
	MIA		.032	In/Sec	3.278 G-s
	FIH		.033	In/Sec	.336 G-s
	FOH		.031	In/Sec	.239 G-s
CBID		- CASTER BA	AGHOUSE ID FAN	(15-	Jan-21)
			OVERA	LL LEVEL	1K-20KHz
	MOH		.067	In/Sec	.082 G-s
	MOV		025		072 G-s
	MTU		.023		125 C-2
	MIII		.072		.125 G-5
	MIV		.037	In/Sec	.1/4 G-S
	MIA		.031	In/Sec	.155 G-s
	FIA		.082	In/Sec	.642 G-s
	FIH		.131	In/Sec	.899 G-s
	FIV		.068	In/Sec	1.351 G-s
	FOH		129	Tn/Sec	541 G-s
	FOV		025		537 C-s
	FOV		.025	In/Sec	.537 G-S
	FOA		.049	In/Sec	.91/G-s
FRAF		- Furnace H	REVERSE AIR Fai	n (15-,	Jan-21)
			OVERA	LL LEVEL	1K-20KHz
	MOH		.137	In/Sec	.299 G-s
	MIH		.105	In/Sec	.197 G-s
	MIA		.051	In/Sec	.137 G-s
	FTA		080		307 G-s
	EIA		126		.507 G S
	F I H		.136	In/Sec	.811 G-S
	FOH		.140	In/Sec	.343 G-s
				- /1 -	- 011
EFBHF		- East Furr	ace Bag House	Fan (15-	Jan-21)
EFBHF		- East Furr	ace Bag House OVERAI	Fan (15-, LL LEVEL	Jan-21) 1K-20KHz
EFBHF	мон	- East Furn	nace Bag House OVERAN .069	Fan (15-, LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s
EFBHF	МОН МІН	- East Furr	nace Bag House OVERAJ .069 .068	Fan (15-, LL LEVEL In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s
EFBHF	MOH MIH MIA	- East Furr	nace Bag House OVERAI .069 .068 .068	Fan (15 LL LEVEL In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s
EFBHF	MOH MIH MIA FIA	- East Furr	Dace Bag House OVERAN .069 .068 .068 .064	Fan (15 LL LEVEL In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s
EFBHF	MOH MIH MIA FIA FIH	- East Furr	Dace Bag House OVERAN .069 .068 .068 .064 .064	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s 491 G-s
EFBHF	MOH MIH MIA FIA FIH FOH	- East Furr	Dace Bag House OVERAN .069 .068 .068 .064 .082 .117	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s
EFBHF	MOH MIH FIA FIH FOH	- East Furr	Dace Bag House OVERAN .069 .068 .068 .064 .082 .117	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s
EFBHF	MOH MIH FIA FIH FOH	- East Furr	Dace Bag House OVERAN .069 .068 .068 .064 .082 .117	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s
EFBHF	MOH MIH MIA FIA FIH FOH	- East Furn - WEST Furn	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15-	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21)
EFBHF	MOH MIH MIA FIA FIH FOH	- East Furr - WEST Furr	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz
EFBHF	MOH MIH FIA FIH FOH	- East Furr - WEST Furr	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN .115	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s
EFBHF	MOH MIH FIA FIH FOH MOH MIH	- East Furr - WEST Furr	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN .115 .128	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s
EFBHF	MOH MIH FIA FIH FOH MOH MIH	- East Furr - WEST Furr	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s
EFBHF	MOH MIH FIA FIH FOH MOH MIH MIA FIA	- East Furr - WEST Furr	hace Bag House OVERAJ .069 .068 .068 .064 .082 .117 hace Bag House OVERAJ .115 .128 .114 .113	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s
EFBHF	MOH MIH MIA FIA FOH MOH MIH MIA FIA	- East Furr	hace Bag House OVERAJ .069 .068 .064 .082 .117 hace Bag House OVERAJ .115 .128 .114 .113 185	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec Fan (15- LLEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2 350 G-s
EFBHF	MOH MIH FIA FIH FOH MOH MIH MIA FIH FOH	- East Furr	hace Bag House OVERAJ .069 .068 .068 .064 .082 .117 hace Bag House OVERAJ .115 .128 .114 .113 .185 .148	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s
EFBHF WFBHF	MOH MIH FIA FIH FOH MOH MIH MIA FIA FIH FOH	- East Furr	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN .115 .128 .114 .113 .185 .148	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LLEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.201 C-s
EFBHF WFBHF	MOH MIH FIA FIH FOH MOH MIH MIA FIA FIH FOH FIV	- East Furr	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN .115 .128 .114 .113 .185 .148 .083	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LLEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s
EFBHF	MOH MIH FIA FIH FOH MOH MIH MIA FIA FIH FOH FIV	- East Furr	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN .115 .128 .114 .113 .185 .148 .083	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s
EFBHF	MOH MIH FIA FIH FOH MOH MIH MIA FIA FIH FOH FIV	- East Furr	Dace Bag House OVERAL .069 .068 .068 .064 .082 .117 Dace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec Fan (15- LLEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21)
EFBHF	MOH MIH FIA FIH FOH MOH MIH MIA FIA FIH FOH FIV	- East Furr - WEST Furr - MIDDLE CA	Dace Bag House OVERAL .069 .068 .068 .064 .082 .117 Dace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz
EFBHF	MOH MIH FIA FIH FOH MOH FIN FIN FIN FIV DP MOH	- East Furr - WEST Furr - MIDDLE CA	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s
EFBHF WFBHF MIDCHY	MOH MIH FIA FIH FOH MOH MIH FIN FIN FIV DP MOH MIH	- East Furr - WEST Furr - MIDDLE CA	Dace Bag House OVERAL .069 .068 .068 .064 .082 .117 Dace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049	Fan (15- L LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- L LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s
EFBHF WFBHF MIDCHY	MOH MIH FIA FIH FOH MOH MIH FIA FIH FOH FIV DP MOH MIH PIH	- East Furr - WEST Furr - MIDDLE CA	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177	Fan (15- L LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- L LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s
EFBHF WFBHF MIDCHY	MOH MIH MIA FIA FIH FOH MOH MIH FIV DP MOH MIH PIH	- East Furr - WEST Furr - MIDDLE CA	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH MIA FIA FIH FOH MOH MIH FIV DP MOH MIH PIH	 East Furr WEST Furr MIDDLE CA SOUTH CAS 	Dace Bag House OVERAL .069 .068 .068 .064 .082 .117 Dace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP	Fan (15- L LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- L LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21)
EFBHF WFBHF MIDCHY	MOH MIH MIA FIA FIH FOH MOH MIH FIV DP MOH MIH PIH	 East Furr WEST Furr MIDDLE CA SOUTH CAS 	Dace Bag House OVERAL .069 .068 .068 .064 .082 .117 Dace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP OVERAL	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH FIA FIH FOH MOH MIH FIA FIH FOH FIV DP MOH MIH PIH	 East Furr WEST Furr MIDDLE CA SOUTH CAS 	bace Bag House OVERAL .069 .068 .068 .064 .082 .117 bace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP OVERAL .055	Fan (15-4 LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.370 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz .444 G-s
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH FIA FIH FOH MOH MIH FIV DP MOH MIH PIH MOH MIH	 East Furr WEST Furr MIDDLE CA SOUTH CAS 	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAN .107 .049 .177 STER Hyd PUMP OVERAN .055 .030	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.371 G-s 2.350 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz .444 G-s .472 G-s
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH FIA FIH FOH MOH MIH FIV DP MOH MIH PIH	 East Furr WEST Furr MIDDLE CA SOUTH CAS 	hace Bag House OVERAN .069 .068 .068 .064 .082 .117 hace Bag House OVERAN .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAN .107 .049 .177 STER Hyd PUMP OVERAN .055 .030 135	Fan (15- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15- L LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz .444 G-s .444 G-s .472 G-s .974 G-s
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH MIA FIA FIH FOH MOH MIH FIV DP MOH MIH PIH	- East Furr - WEST Furr - MIDDLE CA	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP OVERAL .135	Fan (15-4 LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15-4 LLEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz .444 G-s .472 G-s .974 G-s
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH MIA FIA FIH FOH MOH MIH FIV DP MOH MIH PIH	- East Furr - WEST Furr - MIDDLE CA - SOUTH CAS	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP OVERAL .135 .030 .135	Fan (15-4 LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec Fan (15-4 LLEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz .444 G-s .472 G-s .974 G-s 1an-21)
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH FIA FIH FOH MOH MIH FIV DP MOH MIH PIH MOH MIH PIH	 East Furr WEST Furr MIDDLE CA SOUTH CAS SPRAY CHA 	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP OVERAL .105 .030 .135	Fan (15-4 LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz .444 G-s .472 G-s .974 G-s Jan-21) 1K-20WHZ
EFBHF WFBHF MIDCHY SCHYDP	MOH MIH MIA FIA FIH FOH MOH MIH FIV DP MOH MIH PIH MOH MIH PIH	 East Furr WEST Furr MIDDLE CAS SOUTH CAS SPRAY CHA 	hace Bag House OVERAL .069 .068 .068 .064 .082 .117 hace Bag House OVERAL .115 .128 .114 .113 .185 .148 .083 ASTER Hyd PUMP OVERAL .107 .049 .177 STER Hyd PUMP OVERAL .055 .030 .135 MBER EXHAUST I OVERAL	Fan (15- LL LEVEL In/Sec	Jan-21) 1K-20KHz .457 G-s .357 G-s .610 G-s .176 G-s .491 G-s 1.757 G-s Jan-21) 1K-20KHz .571 G-s .322 G-s .603 G-s 1.137 G-s 2.350 G-s .954 G-s 1.301 G-s Jan-21) 1K-20KHz .467 G-s 1.426 G-s 5.001 G-s Jan-21) 1K-20KHz .444 G-s .472 G-s .974 G-s Jan-21) 1K-20KHz

MIH		.813	In/Sec	.093	G-s	
MIA		.568	In/Sec	.067	G-s	
FIH		.509	In/Sec	.462	G-s	
FOH		.367	In/Sec	. 902	G-s	
ENARCOHYDP - 1	EAST NARCO Hyd	PUMP		(15-Jan-21))	
		OVERAI	L LEVEL	1K-201	KHz	
MOH		.045	In/Sec	.043	G-s	
MIH		.047	In/Sec	.040	G-s	
PIV		.358	In/Sec	.794	G-s	
NC OCTLLA - 1	North Caster O	scillator	-	(15Tan-21)	`	
	dien caster o	OVERAI	- LL LEVEL	1K-20	, KHz	
MOH		.310	In/Sec	.090	G-s	
MIH		.264	In/Sec	.073	G-s	
MIA		.206	In/Sec	.184	G-s	
GIA		.155	In/Sec	.112	G-s	
GIH		.192	In/Sec	.107	G-s	
GOH		.206	In/Sec	.291	G-s	
MC OCILLA - 1	Middle Caster	Oscillato	or	(15-Jan-21))	
		OVERAL	L LEVEL	1K-201	KHZ	
MOH		. 365	In/Sec	.084	G-s	
MIH		.290	In/Sec	.223	G-s	
MIA		.206	In/Sec	.164	G-S	
GIA		.160	In/Sec	.044	G-S	
GIH		.186	In/Sec	.195	G-S	
GOH		.180	In/Sec	. 599	G-S	
SC OCILLA -	South Caster O	scillato	2	(15-Jan-21))	
		OVERAI	L LEVEL	1K-20	KHz	
MOH		.190	In/Sec	.066	G-s	
MIH		.164	In/Sec	.145	G-s	
MIA		.129	In/Sec	.169	G-s	
GIA		.106	In/Sec	.152	G-s	
GIH		.153	In/Sec	.159	G-s	
GOH		.120	In/Sec	.796	G-s	
Clarification of	Vibration Uni	 te·				
Vel>						
ver>	III/ Sec PR					

As always, it has been a pleasure to serve NUCOR Steel Flowood-Jackson, MS. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

Kerin W. Maxuell

ISO Certified Vibration Analyst, Category III



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