



September 30, 2016

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: PennEast Pipeline Company, LLC, Docket No. CP15-558-000
Supplemental Response to February 10, 2016 Environmental Information Request
OEP/DG2E/Gas 2

Dear Ms. Bose:

On February 10, 2016, the Federal Energy Regulatory Commission (FERC or Commission) issued its second Environmental Information Request (February Data Request) to PennEast Pipeline Company, LLC (PennEast) related to the above-referenced proceeding. PennEast provided responses to the items contained in the February Data Request on February 22, 2016, and noted in certain responses that it would provide additional information in a supplemental filing. PennEast filed the majority of its outstanding responses in its first supplemental response on February 26, 2016, and filed additional responses in its second supplemental response on March 25, 2016 and its third supplemental response on August 5, 2016.

PennEast hereby submits its fourth supplemental response to the Commission's February Data Request, providing the results of ambient sound surveys, including a two-week continuous ambient sound survey, and a noise impact analysis associated with the proposed Kidder Compressor Station. PennEast is also providing as attachments revised tables and figures that incorporate information from the completed ambient sound surveys and noise impact analysis and supersede and replace the previous tables and figures.

The reports provided as attachments herein contain critical energy infrastructure information (CEII). PennEast is requesting privileged treatment for the CEII contained in the reports, which have been marked "**Contains Critical Energy Infrastructure Information—Do Not Release.**"¹ Information that is CEII should be treated as confidential pursuant to Order No. 630, *et seq.* and is for use by the Commission Staff only and not to be released to the public.² Questions pertaining to confidential information may be submitted to:

¹ 18 C.F.R. §§ 388.112(b), 388.113 (2016).

² *Critical Energy Infrastructure Information*, Order No. 630, FERC Stats. & Regs. Regulations Preambles ¶ 31,140 (2003), 68 Fed. Reg. 9857 (Mar. 3, 2003), *order on reh'g*, Order No. 630-A, 104 FERC ¶ 61,106 (2003), 68 Fed. Reg. 46456 (Aug. 6, 2003).

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Pursuant to Section 385.2010 of the Commission's regulations, 18 C.F.R. § 385.2010 (2015), PennEast is contemporaneously serving copies of the public portion of this filing to persons whose names appear on the Official Service List in this proceeding.

Should you have any questions concerning this filing, please contact me at (610) 406-4322.

Sincerely,
/s/ Anthony C. Cox
Anthony C. Cox
PennEast Pipeline Company, LLC,
By its Project Manager
UGI Energy Services, LLC

cc: Medha Kochhar (FERC) (redlined tables and CEII provide on CD only)
All Parties of Record (public information)

February Data Request

Noise

Data Request 26

As requested in our November 24, 2015 Environmental Information Request question 112, provide a noise analysis from the operation of the meter stations and mainline valves within ½ mile of the Noise Sensitive Areas, which includes the ambient noise, estimate noise, and total noise in Ldn. In addition, identify any mitigation measures, including specific control equipment that PennEast would use to reduce noise.

Supplemental Response 26

In PennEast Pipeline Company, LLC's (PennEast) August 5, 2016 filing of its third supplemental responses to the February 10, 2016 data request, PennEast committed to provide the completed ambient sound survey findings for the Kidder Compressor Station. Accordingly, PennEast is providing herein an ambient sound survey and noise impact analysis report and a two-week continuous ambient sound survey report, as Attachments 1 and 2, respectively, for the PennEast Pipeline Project (Project) Kidder Compressor Station. Certain pages in Attachments 1 and 2 contain Critical Energy Infrastructure Information (CEII), which PennEast has separated, marked as CEII, and filed accordingly.

In addition, PennEast has updated Resource Report table 9.2-3 (Summary of Existing Outdoor Ambient Sound Level Measurement Results) and figure 9.2-2 (Existing Outdoor Ambient Sound Level Measurement Locations) to reflect the additional information presented in the attached reports, and the updated Resource Report table and figure are attached hereto as Attachment 3. PennEast has also included, as Attachment 4, clean and redline versions of tables 4.10.2-2 (Kidder Compressor Station – Summary of Ambient Sound Survey Results) and 4.10.2-8 (Summary of Noise Quality Analysis - Kidder Compressor Station) from the Draft Environmental Impact Study for the Project to show the updates to those tables given the information provided in the attached reports.

PennEast notes that Table A of the ambient sound survey and noise impact analysis report in Attachment 1 provides the updated information for data that was previously provided in Resource Report Tables 9.2-7 and 9.2-8. PennEast has not provided an updated Resource Report Figure 9.2-3 with this filing because the workspace and equipment layout for the Kidder Compressor Station has already been provided in Civil Site Plan No. 023A-03-00-001, which was filed in

Attachment 27 to PennEast's September 23, 2016 Supplemental Information Filing.

KIDDER COMPRESSOR STATION

NOISE IMPACT ANALYSIS

(associated with the PennEast Project)

H&K Report No. 3420

H&K Job No. 5022

Date of Report: August 15, 2016 (Rev. 2)

Prepared for: **Mott MacDonald**
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REPORT SUMMARY

In this report, Hoover and Keith, Inc. (H&K) present the results of an ambient sound survey and noise impact analysis associated with the proposed **Kidder Compressor Station** (“Station”), a new compressor station to be owned and operated by **PennEast Pipeline Company, LLC**. The purpose of the acoustical analysis is to:

- Project the sound level contribution that would result from operating the proposed Station installation.
- Determine noise control measures and noise specifications for the Station equipment to insure that the facility meets applicable sound level criteria.

FERC Criteria

The following table summarizes the measured ambient sound levels and noise quality analysis for the proposed Kidder Compressor Station at the closest NSAs:

NSAs	Distance to Center of Proposed Compressor Units	Ambient L_d ⁽¹⁾ (dBA)	Ambient L_n ⁽¹⁾ (dBA)	Calc'd Ambient L_{dn} ⁽¹⁾ (dBA)	Est'd L_{dn} of Station at Full Load (dBA)	Station L_{dn} + Ambient L_{dn} (dBA)	Potential Increase Above Ambient (dB)
NSA #2 (Hickory Run State Park)	5,600 ft. SW	35.0	34.4	40.9	21.7	41.0	0.1
NSA #1 (Houses & St. Game Lands)	2,300 ft. N to NW	47.2	36.9	47.1	38.6	47.7	0.6

⁽¹⁾ Average L_{90} sound levels from two week ambient sound survey. Via Ambient L_d and L_n .

Noise Quality Analysis for the Proposed Kidder Station at the Closest NSAs

The results of our measurements, observations and analysis indicate that the estimated full load station sound level contribution at the nearby NSAs will be significantly less than an L_{dn} of **55 dBA**. Therefore, assuming the recommended noise control measures are followed and successfully implemented, it is our opinion that the sound level attributable to the proposed Station should not exceed the FERC criterion of **55 dBA L_{dn}** at the nearby NSAs and there should be no perceptible increase in vibration. PennEast intends to implement the recommended noise control measures for the project facilities, which could be further refined in the detailed design phase.

Kidder Township

Kidder Township has noise ordinance that may be applicable to the Station. Kidder Township Ordinance No. 174 requires:

-continued on next page-

REPORT SUMMARY (continued)

- That the operation of the Station equipment shall not create any noise that causes the exterior noise level to exceed the pre-development ambient noise levels as measured within three hundred (300) feet of the compressor station building(s).
- That the Station sound level contribution not exceed the existing ambient noise level by 10 dBA at the Station property boundaries, or at any point in the Township outside the property boundaries, noting that the ambient noise level is determined by a two week continuous sound level survey.
- That the Station sound level contribution, at the limits of receiving land uses, cannot exceed maximum sound levels for daytime and nighttime periods.
- That Station operation shall not create any perceptible vibration at or beyond the Station boundary.

The following table summarizes the assessment to the Kidder Township ambient noise level threshold for the proposed Station:

Property Boundaries or NSA	Distance to Center of Proposed Compressor Units	Est'd L _{eq} of Station at Full Load (dBA)	Ambient Noise Level (1) (dBA)	Station L _{eq} Sound Level minus Ambient Noise Level (dBA)	Kidder Township Ambient Noise Level Threshold (dBA)
South Boundary	350 ft. S-SE	58.3	68.4	-10.1	10
East Boundary	750 ft. E-NE	47.5	55.6	-8.1	
North Boundary	550 ft. N-NW	48.1	50.5	-2.4	
North Boundary	1,250 ft. NW	38.7	51.0	-12.3	
Hickory Run State Park (NSA #2)	5,600 ft. SW	15.3	45.1	-29.8	
Houses and St. Game Lands (NSA #1)	2,300 ft. N to NW	32.2	53.0	-20.8	
(1) Measured two week ambient noise level in accordance with Kidder Township Ordinance (180-98 Noise)					

Assessment to Kidder Township Ambient Noise Level Threshold

As noted in the above table, the sound level contribution of the proposed Station complies with the Kidder Township ambient noise level threshold. As noted above, the estimated sound level contributions of the proposed Station are less than the existing ambient noise levels.

-continued on next page-

REPORT SUMMARY (continued)

The following table summarizes the assessment to the Kidder Township maximum noise level criteria for the proposed Station:

Closest Receiving Lands in Representative Directions	Distance to Center of Proposed Compressor Units	Est'd L_{eq} Sound Level of Station at Full Load (dBA)	Most Stringent Kidder Township Maximum Noise Level Criteria ⁽¹⁾ (dBA)
Light Industrial - East	350 ft. E-NE	47.5	70
Light Industrial - South	800 ft. S-SE	48.7	70
Light Industrial - North	550 ft. N-NW	48.1	70
Light Industrial - West	3,600 ft. W-SW	27.4	70
Open Space (Hickory Run State Park)	5,600 ft. SW	15.3	50
Existing Dwellings / Open Space (St. Game Lands)	2,300 ft. N to NW	32.2	50
⁽¹⁾ Maximum Sound Levels for Receiving Land Limits (Saturday, 9 PM to Monday, 7 AM / Monday - Friday, 9 PM to 7 AM) - Kidder Township Ordinance (180-98 Noise).			

Assessment to Kidder Township Maximum Noise Level Criteria

As noted in the above table, the sound level contribution of the proposed Station complies with the Kidder Township maximum sound level criteria. As noted above, the sound level contributions of the proposed Station do not exceed the maximum sound level criteria at the closest receiving lands in representative directions.

Final Comments Regarding Kidder Township

1. Our report did not assess the requirement “that the operation of the Station equipment shall not create any noise that causes the exterior noise level to exceed the pre-development ambient noise levels as measured within three hundred (300) feet of the compressor station building(s)”.
2. It must be clarified that statements regarding compliance with the Kidder Township ordinance, as contained in this report, are made with respect to *our perceived intent* of specific ordinance requirements and criteria. There are provisions in Ordinance No. 174 which may be onerous, from the perspective of an Owner / Operator.
3. It is our opinion that the extensive noise mitigation measures to be employed by PennEast are consistent with a state of the art low-noise compressor station, which is consistent with a minimum noise impact scenario for the proposed Station at the closest and surrounding NSAs.

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1.0 INTRODUCTION

In this report, Hoover and Keith, Inc. (H&K) present the results of a noise impact analysis associated with the proposed **Kidder Compressor Station** (“Station”), a new compressor station to be owned and operated by **PennEast Pipeline Company, LLC**. The purpose of the acoustical analysis is to:

- Project the sound level contribution that would result from operating the proposed Station installation.
- Determine noise control measures and noise specifications for the Station equipment to insure that the facility meets applicable sound level criteria.

2.0 FEDERAL SOUND CRITERIA

Typically, certificate conditions set forth by the Federal Energy Regulatory Commission (FERC) require that the sound level attributable to a new compressor station not exceed an equivalent day-night sound level (L_{dn}) of **55 dBA** at any nearby NSA, such as residences, hospitals or schools. The L_{dn} is an energy average of the daytime L_{eq} (i.e., L_d) and nighttime L_{eq} (i.e., L_n) plus 10 dB. For an essentially steady sound source (e.g., gas compressor station) that operates continuously over a 24-hour period and controls the environmental sound level, the L_{dn} is approximately **6.4 dB** above the measured L_{eq} . Consequently, an L_{dn} of **55 dBA** corresponds to a L_{eq} of **48.6 dBA**.

For reference, a summary of acoustical terminology and typical metrics used to measure and regulate environmental noise is provided at the end of this report in **Appendix C** (pp. C-1 to C-3).

3.0 STATE AND LOCAL NOISE REGULATIONS

We are unaware of any applicable Pennsylvania or Carbon County noise regulations for the Station.

Kidder Township

Kidder Township has a noise ordinance¹ that may be applicable to the facility. The following text is from the ordinance:

¹ Kidder Township Ordinance No. 174. August 19, 2015. (Changes: *Article XII to Article XIII, §180-80 to §180-91 and following sections in sequence.*)

T. Transmission Pipelines and Hazardous Liquid Pipelines and Pipeline Compressor Station, Metering Station or Operation/Maintenance Facilities. (from §180-23T)

(10) Noise

- (a) *In addition to the requirements of §§180-98, all construction activities and the operation of the transmission pipeline and associated facilities shall comply with the requirements of Chapter 121 (Noise) and all applicable state and federal statutes.*
- (b) *All compressors, engines and any mechanical equipment which requires noise reduction to meet Township standards shall be located within a fully enclosed building with soundproofing and blow down silencers and mufflers adequate to comply with the noise standards established by §180-98 or as otherwise established as a condition of approval. In any case, the operation of the equipment shall not create any noise that causes the exterior noise level to exceed the pre-development ambient noise levels as measured within three hundred (300) feet of the compressor station building(s). The applicant and or operator shall be responsible for establishing and reporting to the Township the pre-development ambient noise level prior to the issuance of the zoning permit for the station.*

§180-98 Noise

A. Definitions.

- (1) A-weighted Noise Level (dBA). *A measure of sound pressure in decibels with the sound pressure scale adjusted to conform with the frequency response of the human ear. A sound level meter that measures A-weighted decibels, designated as dBA, has an electrical circuit that allows the meter to have the same sensitivity to sound at different frequencies as the average human ear (2007, Australian Academy of Science).*
- (2) Equivalent Noise Level (Leq). *The dBA level of a steady state sound which has the same dBA weighted sound energy as that contained in the actual time-varying sound being measured over a specific time period (2003, Eilar Associates, Encinitas, CA).*
- (3) Ambient Noise Level. *The average A-weighted Noise Level (Leq) at any specified point which is representative of the noise level of that environment*

over an extended period of time. It is a composite of all sounds from sources, both near and far.

- (4) *Noise Source. A single piece of equipment, or a collection of equipment under the control and operation of a single entity (e.g. wind farm), that produces noise as a consequence of its operation. A collection of equipment may not necessarily be connected or related, if they may be operated simultaneously.*
- (5) *Suspect Source. A Noise Source that may be in violation of this §180-98 identified by the nature of the sounds or a correlation with the times of operation and the alleged violation.*

B. Limits.

- (1) *Ambient Noise Level Threshold.*
 - (a) *No Noise Source shall produce an A-Weighted Noise Level at any point in the Township outside the boundaries of the property on which the Noise Source is located (or in the case of a project considered a single Noise Source, the boundaries of the collective project area) at a level in excess of ten (10) dBA above the Ambient Noise Level.*
 - (b) *An increase in excess of ten (10) dBA shall be permitted provided the owner/operator of the Noise Source acquires a noise easement in form and content approved the Township (solely with respect to the noise easement) from the affected property owner which establishes the maximum increase. However no increase shall be permitted for properties separated by an any public road right of way and in no case shall the maximum noise level exceed the level established by §180-98B(3).*
- (2) *Ambient Noise Level. For projects being developed, the Ambient Noise Level for the entire project may be established prior to construction of such project for the duration of construction and operation of such project by measuring the noise level near the boundaries of the property on which the project is to be constructed in accord with §180-98C for a continuous two (2)-week period no more than (2) years prior to the start of construction of such project.*

Maximum Sound Levels					
<i>Period</i>	<i>Receiving Land Limits (dBA)</i>				
	<i>Existing Dwelling</i>	<i>Zoning District</i>			
		<i>OS, R-1, R-2</i>	<i>R-3</i>	<i>R/RC, VC, C</i>	<i>BD/LI</i>
<i>Monday-Saturday, 7:00 a.m.-9:00 p.m.</i>	60	60	60	65	70
<i>Saturday, 9:00 p.m. – Monday, 7:00 a.m. Monday-Friday, 9:00 p.m.-7:00 a.m.</i>	50	50	55	60	70

- (3) Maximum Noise Level. Notwithstanding any of the foregoing provisions of this 180-98B, in no event shall a Noise Source produce an A-Weighted Noise Level outside the boundaries of the property on which the Noise Source is located (or in the case of a project considered a single Noise Source, the boundaries of the collective project area) at a level in excess of the limits established in the Maximum Sound Levels Table.

C. Measurements.

- (1) Type and Certification. All noise level measurements shall be made using a sound level meter meeting American National Standard Specification for Sound Level Meters (ANSI S1.4-1983 (R2001)/ANSI S1.4A-1985 or the current revision of that standard) for Type 1 instruments. The instrument shall have been laboratory re-certified according to the manufacturer’s directions within the periodicity required by the manufacture (usually 1- or 2-year interval) prior to the measurements.
- (2) Methods. All measurements shall be taken using the FAST response time and A-weighting.
- (3) Field Calibration. A field calibration check, using a certified field calibrator, shall be performed at the beginning and end of the measurement period and reported with the other data.
- (4) Proposed Projects.
- (a) For projects establishing an Ambient Noise Level for the project prior to the approval of such project, the average A-weighted Noise Level (Leq) shall be measured at multiple points near the outside boundaries of the property on which the project is to be construed for a continuous two-

week period no more than one (1) year to the start of construction of such project.

- (b) Measurements should be attempted to be performed near outside boundaries which are closest in proximity to where the Noise Source will be located and/or where noise is reasonably expected to be the loudest.*
- (c) The measurements must be made by an independent professional using the commonly-accepted measurement procedures specified in ANSI/ASA S1.13-2005 (R2010) standard “American National Standard Methods for the Measurement of Sound Pressure Levels in Air”.*

*D. Investigation of Complaints. {Refer to **Appendix E** (pp. 12-14)}*

*E. Report. {Refer to **Appendix E** (pp. 14-15)}*

F. Studies for Proposed Use.

- (1) Compliance with Standards. Applicants for a specific proposed use shall be required to demonstrate that the proposed use will not violate the standards in this 180-09 by providing reasonable documentary evidence, which may include:
 - (a) Engineering studies which estimate the environmental noise levels from the proposed equipment operations and the impact of mitigation measures applied to the equipment and/or site; and/or*
 - (b) Environmental noise measurements from similar operations and sites (same number and types of equipment, comparable topography and prevailing weather conditions).**
- (2) Loudspeakers. The applicant shall provide specifications for any proposed exterior loudspeakers and detail how compliance will be attained.*
- (3) Conditions. Given the inherent vagaries of acoustic predictions and the variability of acoustic measurements, the Board of Supervisors may apply conditions which are more conservative than would be indicated by the studies. In any case, the acceptance of proposed control or mitigation measures does not relieve the applicant from complying with the standards provide in this §180-98 and/or any zoning approval.*

G. Exceptions. *The standards in this §180-98 do not apply to:*

- (1) Radiated noise levels for vehicles or other operations subject to state or federal preemption.*
- (2) The operation of lawn mowers, leaf blowers, sting trimmers, chain saws and other small yard maintenance equipment between sunrise and sunset.*
- (3) Emergency equipment and signals.*
- (4) Emergency operations of any kind, including, but not limited to road repairs, utility repairs, response to accidents, injuries, fires, flooding, or hazardous material spills.*
- (5) Short duration activities, such as construction or repair of facilities or infrastructure.*
- (6) Discharge of firearms.*

§180-9 Vibration

Operating or permitting the operations of any device that creates vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at fifty (50) feet from the source if on a public space or public right of way shall be prohibited. For the purposes of this section, vibration perception threshold means the minimum ground-or- structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to sensation by touch or visual observation of moving objects.

In summary, Kidder Township Ordinance No. 174 requires:

- That the operation of the Station equipment shall not create any noise that causes the exterior noise level to exceed the pre-development ambient noise levels as measured within three hundred (300) feet of the compressor station building(s).
- That the Station sound level contribution not exceed the existing ambient noise level by 10 dBA at the Station property boundaries, or at any point in the Township outside the property boundaries, noting that the ambient noise level is determined by a two week continuous sound level survey.

- That the Station sound level contribution, at the limits of receiving land uses, cannot exceed maximum sound levels for daytime and nighttime periods.
- That Station operation shall not create any perceptible vibration at or beyond the Station boundary.

Kidder Township has another noise ordinance² that may be applicable to the facility. The following text is from the ordinance:

§ 121-4. Loud, unnecessary or unusual noise prohibited.

It shall be unlawful for any person to make, continue or cause to be made or continued any loud, unnecessary or unusual noise or any noise which either annoys disturbs, injures or endangers the comfort, repose, health, peace of safety of others, within the limits of Kidder Township, Pennsylvania.

In summary Kidder Township Chapter 121 prohibits loud, unusual or unnecessary noise.

4.0 DESCRIPTION OF SITE AND PROPOSED COMPRESSOR STATION

4.1 Description of the Site

Figure 1 (p. A-1) depicts the proposed Station and surrounding area. The Station is located approximately 15 miles SE of Wilkes Barre in Kidder Township, Carbon County, Pennsylvania, and the Station is located directly adjacent to I-80. The surrounding area consists of mostly heavily wooded lands situated upon level to gently sloping lands. The closest NSAs are houses approximately 2,300 ft. N to NW of the proposed Station. The closest boundaries of Hickory Run State Park and PA State Game Lands 40 are 5,600 ft. SW and 2,300 ft. NW of the proposed Station, respectively.

4.2 Description of the Station Equipment

Figure 2 (p. A-2) depicts the proposed Station Plot Plan. The noise impact analysis assumes that the Station will include one (3) Solar Mars 100 Turbine Compressor Units that are ISO rated at 15,900 HP each. The following describes auxiliary equipment and other notable items associated with the Station:

- Acoustically designed compressor building for each compressor unit.
- High performance turbine exhaust systems with oxidation catalysts.

² Kidder Township Chapter 121. Noise. Adopted by the Board of Supervisors of the Township of Kidder 11-14-1972 y Ord. No. 13.

- High performance turbine air inlet systems.
- Low noise turbine lube oil coolers.
- Low noise Station gas aftercooler.
- Aboveground gas piping and low noise station recycle valve.
- Control / MCC building, station air compressors and standby generator.
- Unit blowdown silencers.

5.0 AMBIENT SOUND LEVEL SURVEY

5.1 Kidder Township Ordinance No. 174

PennEast has performed a two week continuous ambient sound survey at the property boundaries to determine and establish the “Ambient Noise Level” in accordance with Kidder Township Ordinance No. 174, and the ambient sound survey data and associated information are contained in RN 3454, dated August 15, 2016. **Table 1** below depicts the “Ambient Noise Level” at the property boundaries and at the closest NSAs:

Measurement Positions at the Property Boundaries and Closest NSAs	Distance to Center of Proposed Compressor Units	Ambient (L _{eq}) Noise Level ⁽¹⁾ (dBA)
NS 1, South Boundary	350 ft. S-SE	68.4
NS 2, East Boundary	750 ft. E-NE	55.6
NS 3, North Boundary	550 ft. N-NW	50.5
NS 4, North Boundary	1,250 ft. NW	51.0
NS 5, NSA #2 (Hickory Run State Park)	5,600 ft. SW	45.1
NS 6, NSA #1 (Houses & St. Game Lands)	2,300 ft. N to NW	53.0

⁽¹⁾ Measured two week L_{eq} ambient sound level in accordance with Kidder Township Ordinance (180-98 Noise).

Table 1: “Ambient Noise Levels” in Accordance with Kidder Township Ordinance No. 174 at the Property Boundaries and NSAs

5.2 L90 Sound Levels

Table 2 (p. 9) summarizes the measured and calculated L_{eq} and L₉₀ sound levels, respectively, for measurement locations NS-1 thru NS-6 for the 14 day measurement period.

Pos.	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7		Day 8		Day 9		Day 10		Day 11		Day 12		Day 13		Day 14		Avg.	
	Leq	L90	Leq	L90	Leq	L90	Leq	L90	Leq	L90	Leq	L90	Leq	L90																
NS 1																														
L_n	67.5	61.6	66.2	59.4	63.0	53.1	66.2	60.2	67.3	60.9	67.5	61.6	67.6	61.8	67.8	61.8	66.3	58.9	62.3	53.9	65.8	60.0	66.7	59.7	67.4	60.7	67.5	61.9	66.4	59.7
L_d	69.6	66.6	67.8	64.0	67.4	64.0	70.1	66.4	69.9	66.1	69.9	66.0	69.9	66.7	69.7	66.5	67.3	63.8	67.0	63.4	69.8	66.1	69.9	66.2	69.8	66.4	69.6	66.2	69.1	65.6
NS 2																														
L_n	56.7	53.4	55.2	50.6	54.3	44.0	57.2	52.9	54.5	49.9	58.1	53.9	59.1	55.6	58.0	54.2	55.3	50.8	53.6	47.7	55.2	51.0	51.2	46.2	57.7	53.5	58.2	54.5	56.0	51.3
L_d	55.1	51.7	56.4	48.9	52.8	48.2	56.3	52.2	54.0	49.4	54.7	50.3	56.8	51.5	55.6	52.6	52.6	49.3	52.7	47.9	54.3	50.4	54.2	50.6	55.0	50.3	56.1	51.9	54.7	50.4
NS 3																														
L_n	53.2	49.8	51.2	46.1	54.1	39.6	54.4	50.3	46.2	40.9	51.1	47.4	55.3	52.3	53.9	50.4	50.0	45.7	47.5	40.2	50.1	45.2	43.7	39.3	51.1	46.5	54.3	51.0	51.2	46.0
L_d	49.6	44.6	56.4	40.8	46.9	39.5	52.4	45.4	46.4	41.9	47.9	41.5	51.6	44.6	51.8	47.3	45.5	41.3	47.5	39.4	52.2	42.9	46.7	42.6	47.6	41.3	50.5	45.2	49.5	42.7
NS 4																														
L_n	47.4	43.1	51.7	48.0	49.8	44.8	53.8	38.8	52.9	48.7	45.2	40.3	50.3	46.7	54.0	50.8	52.1	48.2	47.6	43.5	46.2	38.9	48.7	44.6	43.5	39.3	50.5	46.0	49.5	44.4
L_d	54.2	47.5	48.6	44.2	57.0	41.2	46.3	40.1	52.6	44.8	46.3	42.7	47.2	42.3	50.2	44.3	52.4	46.5	45.1	41.0	47.1	40.5	54.2	43.2	46.5	42.9	47.5	42.3	49.7	43.1
NS 5																														
L_n	36.9	31.5	42.3	38.6	39.8	34.1	47.0	33.2	42.1	37.6	38.8	33.6	37.0	33.3	41.4	34.6	43.1	38.5	40.2	36.7	33.7	28.6	39.5	33.8	39.7	33.8	36.9	33.3	39.9	34.4
L_d	49.3	38.3	42.8	38.2	51.9	30.7	39.6	32.6	50.1	37.3	41.1	35.7	39.5	31.5	41.5	36.7	47.2	40.5	40.0	34.9	38.1	31.4	51.0	37.0	39.7	34.2	38.7	31.0	43.6	35.0
NS 6																														
L_n	51.4	35.2	54.9	33.6	49.4	42.1	47.1	29.7	47.9	37.2	49.0	40.5	49.4	43.4	47.0	35.1	46.4	27.1	48.2	40.4	46.5	35.1	47.1	35.6	48.8	40.9	49.8	40.1	48.8	36.9
L_d	55.3	49.1	58.2	48.8	53.9	47.9	55.0	47.1	52.7	45.6	53.4	45.7	52.9	47.5	54.9	49.4	53.5	47.9	52.9	47.2	55.5	45.9	51.9	44.5	52.1	45.6	53.0	48.5	53.9	47.2

Table 2: Measured Leq and Calculated L90 Sound Levels at the Property Boundaries and NSAs

The sound level data from the two seek continuous ambient sound survey has also been utilized to calculate the L_{90} sound levels for the daytime periods (i.e., L_d) and nighttime periods (i.e., L_n). The L_{90} sound level is the sound level that is exceeded for 90% of the measurement period and it is common to utilize the L_{90} sound level as the background or ambient noise level.

6.0 NOISE IMPACT EVALUATION

6.1 Significant Sound Sources

The noise impact evaluation considers the noise produced by all significant sound sources associated with the proposed Station that could impact the sound contribution at the nearby NSAs. A description of the analysis methodology and source of sound data is provided in **Appendix B** (p. B-2). The following sound sources are considered significant:

- Turbine-compressor casing noise that penetrates the compressor buildings.
- Noise of the turbine unit exhaust systems.
- Noise of the turbine air intake systems.
- Noise of the electric motor driven lube oil coolers.
- Noise of the electric motor driven Station gas aftercooler.
- Noise radiated by above ground compressor station piping.

6.2 Estimated Sound Contribution

Table A (p. B-1) shows the calculation (i.e., spreadsheet analysis) of the estimated octave-band SPLs and the A-wt. sound level at NSA #1 contributed by the significant noise sources associated with the proposed facilities for standard day propagating conditions (i.e., no wind, 60 deg. F., 70% R.H.) and any shielding from buildings, terrain or foliage has been conservatively ignored and/or conservatively applied. This spreadsheet analysis includes the potential noise reduction due to the anticipated and/or recommended noise control measures for equipment.

6.3 FERC Noise Quality Analysis

Table 3 below summarizes the Noise Quality Analysis for the closest NSAs for the proposed Station:

NSAs	Distance to Center of Proposed Compressor Units	Ambient $L_d^{(1)}$ (dBA)	Ambient $L_n^{(1)}$ (dBA)	Calc'd Ambient $L_{dn}^{(1)}$ (dBA)	Est'd L_{dn} of Station at Full Load (dBA)	Station $L_{dn} +$ Ambient L_{dn} (dBA)	Potential Increase Above Ambient (dB)
NSA #2 (Hickory Run State Park)	5,600 ft. SW	35.0	34.4	40.9	21.7	41.0	0.1
NSA #1 (Houses & St. Game Lands)	2,300 ft. N to NW	47.2	36.9	47.1	38.6	47.7	0.6

⁽¹⁾ Average L_{90} sound levels from two week ambient sound survey. Via Ambient L_d and L_n .

Table 3: Proposed Kidder Compressor Station - Noise Quality Analysis

As noted above in **Table 3**, the sound contribution of the proposed Station is estimated to be significantly less than the 55 dBA L_{dn} FERC Criteria at the nearby NSAs.

6.4 Assessment to Kidder Township Ordinance

Table 4 below summarizes the assessment to the Kidder Township ambient noise level threshold for the proposed Station:

Property Boundaries or NSA	Distance to Center of Proposed Compressor Units	Est'd L_{eq} of Station at Full Load (dBA)	Ambient Noise Level ⁽¹⁾ (dBA)	Station L_{eq} Sound Level minus Ambient Noise Level (dBA)	Kidder Township Ambient Noise Level Threshold (dBA)
South Boundary	350 ft. S-SE	58.3	68.4	-10.1	10
East Boundary	750 ft. E-NE	47.5	55.6	-8.1	
North Boundary	550 ft. N-NW	48.1	50.5	-2.4	
North Boundary	1,250 ft. NW	38.7	51.0	-12.3	
Hickory Run State Park (NSA #2)	5,600 ft. SW	15.3	45.1	-29.8	
Houses and St. Game Lands (NSA #1)	2,300 ft. N to NW	32.2	53.0	-20.8	

⁽¹⁾ Measured two week ambient noise level in accordance with Kidder Township Ordinance (180-98 Noise)

Table 4: Assessment to Kidder Township Ambient Noise Level Threshold

As noted above in **Table 4**, the sound level contribution of the proposed Station complies with the Kidder Township ambient noise level threshold. As noted above, the sound level contributions of the proposed Station are less than the existing ambient sound levels.

Table 5 below summarizes the assessment to the Kidder Township maximum noise level criteria for the proposed Station:

Closest Receiving Lands in Representative Directions	Distance to Center of Proposed Compressor Units	Est'd L_{eq} Sound Level of Station at Full Load (dBA)	Most Stringent Kidder Township Maximum Noise Level Criteria ⁽¹⁾ (dBA)
Light Industrial - East	350 ft. E-NE	47.5	70
Light Industrial - South	800 ft. S-SE	48.7	70
Light Industrial - North	550 ft. N-NW	48.1	70
Light Industrial - West	3,600 ft. W-SW	27.4	70
Open Space (Hickory Run State Park)	5,600 ft. SW	15.3	50
Existing Dwellings / Open Space (St. Game Lands)	2,300 ft. N to NW	32.2	50

⁽¹⁾ Maximum Sound Levels for Receiving Land Limits (Saturday, 9 PM to Monday, 7 AM / Monday - Friday, 9 PM to 7 AM) - Kidder Township Ordinance (180-98 Noise).

Table 5: Assessment to Kidder Township Maximum Noise Level Criteria

As noted above in **Table 5**, the sound level contribution of the proposed Station complies with the Kidder Township maximum sound level criteria. As noted above, the sound level contributions of the proposed Station do not exceed the maximum sound level criteria at the closest receiving lands in representative directions.

7.0 NOISE CONTROL RECOMMENDATIONS

The following section provides recommended noise control measures and equipment noise specifications along with other assumptions that may affect the noise generated by the facility. PennEast intends to implement the recommended noise control measures for the project facilities, which could be further refined in the detailed design phase.

7.1 Compressor Buildings

Special Note

It is extremely important that the recommended compressor building noise control requirements are followed in detail, due to the stringent acoustical requirements for the project. Alternate and lighter weight compressor building designs are not endorsed by H&K if proposed by any Compressor Building vendor.

Building Structure

- As a minimum, walls/roof should be constructed with exterior steel of 22 gauge and interior layer of 8-inch thick unfaced mineral wool (e.g., 6.0-8.0 pcf uniform

density) covered with a 24 gauge perforated liner. Thermal insulation, such as "R-19", should not be used as a substitute for the 6.0-8.0 pcf material. A maximum 2 mil vapor barrier may be utilized, if desired.

- Personnel entry doors should have a minimum STC-36 sound rating and could include door glazing if a 2' x 2' maximum view port is employed (e.g., 1/2 inch thick laminated glazing or double pane safety glass). Doors should seal well with the doorframe and be self-closing.
- No windows, skylights or louvers should be installed. No ridge vent shall be permitted.
- All voids and openings in the building walls resulting from penetrations should be patched and well sealed.
- A double roll-up equipment door system is recommended; although a single overhead roll-up door system may be initially installed, if desired. As a minimum, each roll-up door shall a 22 gauge insulated type design (e.g., 22 gauge exterior with a 24 gauge backskin with insulation core, or equal) and be completely weather sealed. Each roll-up equipment door shall have a minimum STC of 22.

Building Ventilation

- The building ventilation system should be designed to properly ventilate (and cool) the building and equipment during maximum outside ambient temperatures with all personnel and equipment doors closed. Personnel and/or equipment doors should only be opened during maintenance activities.
- The A-wt. sound level for each ventilation inlet should not exceed **45 dBA** at **50 feet** from the building penetration (i.e., inlet louver, acoustic inlet hood, etc.). The A-wt. sound level for each ventilation exhaust outlet should not exceed **45 dBA** at **50 feet** from the building penetration (i.e., exhaust louver, exhaust hood, etc.). Each ventilation inlet and exhaust outlet shall assume that the following sound pressure levels exist inside the compressor building at and adjacent to the ventilation equipment:

SPLs per Octave-Band Center Freq. & A-Wt. Level

31.5	63	125	250	500	1000	2000	4000	8000	dBA
85	90	90	95	95	95	95	95	90	101

- The ventilation system inlet and exhaust systems shall be designed to control interior building sound paths from the inlet and exhaust flow paths, interior building sound paths across ventilation system components (i.e., ducting break-in noise, etc.) and sound that is generated by ventilation equipment (i.e., supply fans, exhaust fans, louvers, tempering coils, etc.).

7.2 Air Compressor Building

Building Structure

- As a minimum, walls/roof should be constructed with exterior steel of 24 gauge and interior layer of 4-inch thick unfaced mineral wool (e.g., 6.0-8.0 pcf uniform density) covered with a 24 gauge perforated liner. Thermal insulation, such as "R-19", should not be used as a substitute for the 6.0-8.0 pcf material. A maximum 2 mil vapor barrier may be utilized, if desired.
- Personnel entry doors should be insulated steel doors with 1/4 inch thick laminated glass. Doors should seal well with the doorframe and be self-closing.
- No windows or "open" louvers should be installed.
- All voids and openings in the building walls resulting from penetrations should be patched and well sealed.
- Overhead roll-up doors, as a minimum, should be a 22 gauge insulated type design (e.g., 20 gauge exterior with a 24 gauge backskin with insulation core) and should be completely weather stripped.

Building Ventilation

- The building ventilation system should be designed to properly ventilate (and cool) the building and equipment during maximum outside ambient temperatures with all personnel and equipment doors closed. Personnel and/or equipment doors should only be opened during maintenance activities.
- The A-wt. sound level for each ventilation inlet should not exceed **45 dBA at 50 feet** from the building penetration (i.e., inlet louver, acoustic inlet hood, etc.). The A-wt. sound level for each ventilation exhaust outlet should not exceed **45 dBA at 50 feet** from the building penetration (i.e., exhaust louver, exhaust hood, etc.). Each ventilation inlet and exhaust outlet shall assume that the following sound pressure levels exist inside the air compressor building at and adjacent to the ventilation equipment:

SPLs per Octave-Band Center Freq. & A-Wt. Level

31.5	63	125	250	500	1000	2000	4000	8000	dBA
85	85	85	85	90	90	90	85	75	95

- The ventilation system inlet and exhaust systems shall be designed to control interior building sound that escapes from the inlet and exhaust flow paths, interior building sound paths across ventilation system components (i.e., ducting break-in noise, etc.) and sound that is generated by ventilation equipment (i.e., supply fans, exhaust fans, louvers, tempering coils, etc.).
- As a minimum, air-supply fans used for ventilation should include a metal boot enclosing the fan; a minimum 36-inch length exterior silencer and a weather hood lined with acoustical insulation.
- Assuming separate roof exhaust vents will be utilized, each roof exhaust vent, as a minimum, should include a 36-inch length silencer (i.e., baffle-type design) mounted between the building surface and vent/hood (i.e., in the ventilator throat).

7.3 Turbine Exhaust Systems

The silenced exhaust system sound level, at 400 ft. and in any direction from the exhaust stack centerline, shall not exceed the following octave-band sound pressure levels:

**Maximum (i.e., Guaranteed) Sound Pressure Level (SPL)
 at 400 ft. from the Exhaust System**

31.5	63	125	250	500	1000	2000	4000	8000
63	57	47	40	35	30	30	30	25

The exhaust system acoustical requirement shall include:

- Exhaust stack outlet noise and all exhaust system breakout noise (i.e., for exterior exhaust system components, including all exterior duct sections, expansion joints and any oxidation catalyst system).
- Part load to full load turbine unit operation

7.4 Turbine Air Inlet Systems

The intake systems should include two silencers in series (i.e., two stage silencing system) between the air intake filter and turbine unit. It is recommended that the first

silencer is located inside the building to the extent possible, while the second stage silencer can be located outside the building, if required.

It is also required that the first stage silencer (and support system) is acoustically isolated from the second stage silencer (and support structure) with an acoustical vibration break (i.e., 3" flexible fabric joint) located inside the compressor building. The Solar supplied support structure for the 1st stage and 2nd stage silencers should be separated (i.e., not span across the flexible joint). *(The 3" flexible fabric joint shall be located inside the compressor building, with care not to locate the joint inside the wall cavity).*

The first stage silencer can either be a "tubular" design or parallel baffle construction. The second stage silencer should be a parallel baffle construction. The combined insertion loss of the 1st and 2nd stage silencers should approximately meet the following values:

IL Values in dB per Octave-Band Center Freq. for 1st and 2nd Stage Silencers

31.5	63	125	250	500	1000	2000	4000	8000
5	18	38	52	60	65	65	90	80

It is assumed that a pulse style, up-draft, air inlet filter that will provide the following static insertion loss (IL values) at the rated turbine operation is utilized:

IL Values in dB per Octave-Band Center Freq. for Pulse Style Up-draft Filter

31.5	63	125	250	500	1000	2000	4000	8000
0	0	8	9	13	26	27	27	33

7.5 Turbine Unit Lube Oil Coolers

The Solar low noise lube oil cooler (i.e., 85 dBA PWL) with V-Belt drive is recommended for each compressor unit.

7.6 Station Gas Aftercooler

The gas aftercooler fans and drive system selected by PennEast (i.e., 12 ft. diameter Moore Class 10000 EC fans, 10 blades per fan, 5,400 fpm fan tip speed and 12.7 HP/Fan draw) are acceptable.

7.7 Aboveground Gas Piping

The Station high pressure gas piping including the Unit suction, discharge and bypass valves, and the Station suction and discharge headers should be buried, to the extent possible. Any remaining aboveground piping can be acoustically lagged with a minimum 3" thick fiberglass or mineral wool (e.g., 8.0 pcf uniform density) that is covered with a mass-filled vinyl jacket (e.g., composite of 1.0 psf mass-filled vinyl laminated to 0.020" thick aluminum) if necessary.

Aboveground valves can be covered with removable and/or reusable acoustic material and/or blankets, if necessary. The blanket material typically consists of a core of 2-inch thick needled fiber mat (6.0-8.0 pcf density) and a liner material of mass-loaded vinyl (1.0-1.25 psf surface weight) that is covered with a coated fiberglass cloth. The inner layer of insulation should be covered with a stainless steel mesh instead of coated fiberglass cloth. It is also recommended that any aboveground gas piping should be separated from other metal structures such as metal gratings, walkways and stairs around the piping, to the greatest extent possible to facility acoustical lagging.

Please note that thermal insulation (i.e., calcium silicate and banded metal jacketing) is not suitable for attenuating piping noise. If thermal insulation for any piping systems is required for personnel protection, etc., then consideration to utilize the acoustical system described above should be given.

7.8 Station Recycle Valve

The Station recycle valves shall be a low noise style valve (i.e., Globe Style) with Whisperflo or Whisper III noise trim., with a maximum sound level of 80 dBA at 3 ft. for worse case conditions. An attenuated ball style valve is not acceptable.

7.9 Miscellaneous Equipment

Gas Blowdown Silencer (i.e., unit piping purge/unit blowdown): It is recommended that this sound source is silenced to **50 dBA** at **300 ft.** (as measured 5 ft. above the ground).

Fuel Gas Skids: It is recommended that any fuel gas skids be designed with regulators that can achieve **85 dBA** at **3 ft.** for the worst case design conditions (i.e., anticipated maximum pressure drop and flow across the regulator valve).

Standby Generator: It is recommended that the remote standby generator JW/AW cooler is a horizontal type and that the sound level should not exceed 65 dBA at a distance of

50 feet from the unit perimeter. The generator shall be equipped with a high performance exhaust silencer (i.e., hospital grade or better).

Pneumatic Valve Operator Exhaust Vents: It is recommended that each pneumatic operator exhaust vent is silenced with the manufacturer's standard exhaust vent, such as supplied by Shafer Valve Company.

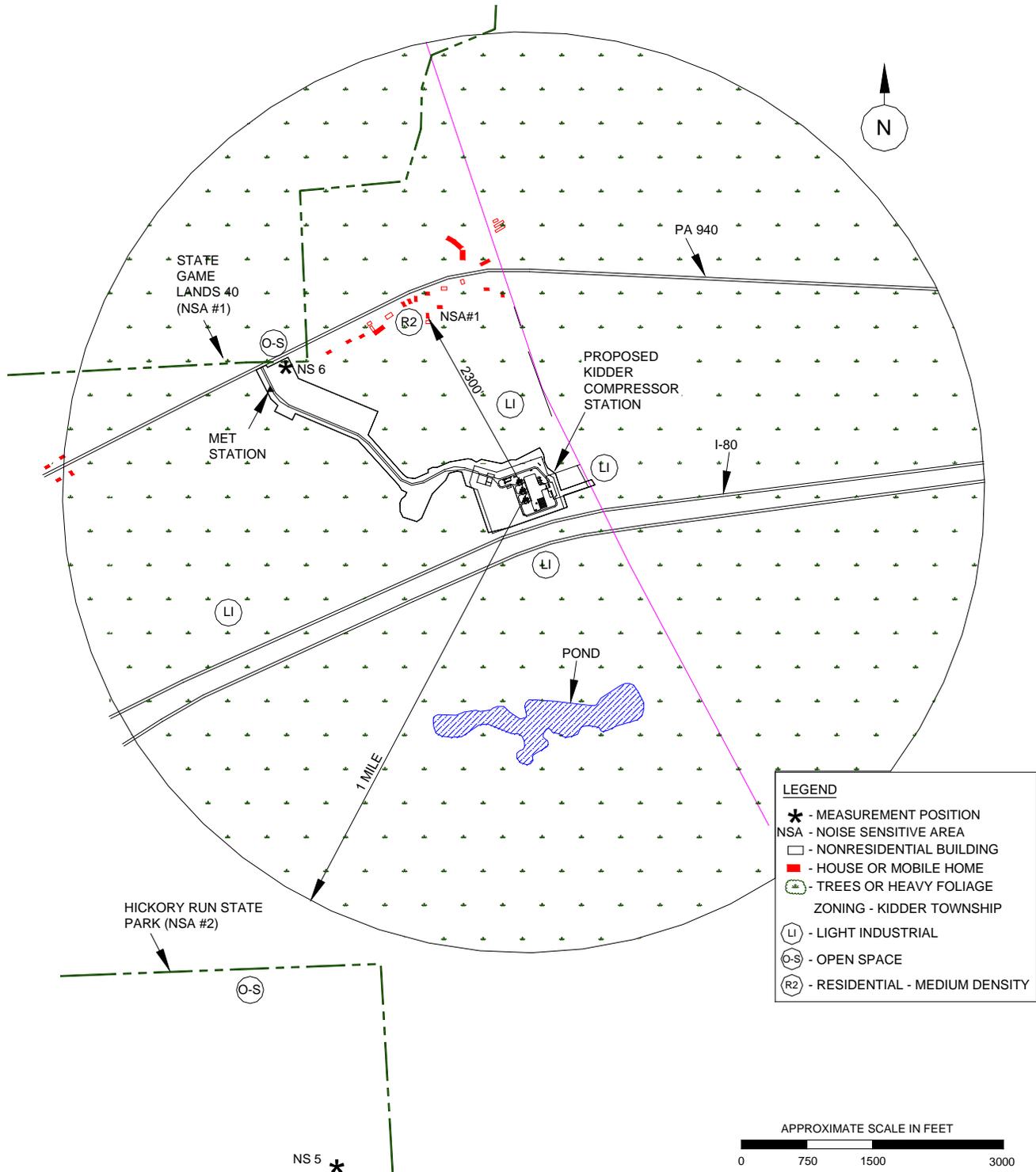


Figure 1: Proposed Kidder Compressor Station and Surrounding Area

This page contains Critical Energy Infrastructure Information and has been removed and filed under separate cover.

Source No. & Dist (Ft)	SOURCE PWL & EST'D. SOUND LEVEL CONTRIBUTIONS AT SPEC. DISTANCE	PWL or SPL in dB Per Octave-Band Center Freq. (Hz)									A-Wt. Level	
		31.5	63	125	250	500	1000	2000	4000	8000		
1)	PWL of Turbine-Comp. Casing Noise	118	117	117	115	115	115	120	124	120	128	
	PWL of Eng.-Comp. Casing Noise (3 units)	123	122	122	120	120	120	125	129	125	132	
	NR of Noise Control	-10	-18	-26	-38	-50	-50	-50	-50	-50		
	Misc. Atten.	0	0	0	0	0	0	0	0	0		
	2300 Hemispherical Radiation	-65	-65	-65	-65	-65	-65	-65	-65	-65		
	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	-1	-2	-3	-7	-17	-32		
	Source Sound Level Contribution	48	39	30	16	3	1	3	0	0	18	
2)	SPL of Silenced Exhaust at 400 ft.	63	57	47	40	35	30	30	30	25	40	
	PWL of Unsil. Turbine Exhaust (3 units)	68	62	52	45	40	35	35	35	30	45	
	Misc. Atten.	0	0	0	0	0	0	0	0	0		
	2300 Hemispherical Radiation	-15	-15	-15	-15	-15	-15	-15	-15	-15		
	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	-1	-1	-3	-6	-14	-26		
	Source Sound Level Contribution	52	46	36	29	23	17	14	5	0	27	
3)	PWL of Turbine Intake System	113	119	126	126	127	130	133	167	158	168	
	PWL of Turbine Int. System (3 units)	118	124	131	131	132	135	138	172	163	173	
	Atten of 1st Stage Silencer	-5	-18	-38	-52	-60	-65	-65	-90	-80		
	Misc. Atten.	0	0	0	0	0	0	0	0	0		
	2300 Hemispherical Radiation	-65	-65	-65	-65	-65	-65	-65	-65	-65		
	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	-1	-2	-3	-7	-17	-32		
Source Sound Level Contribution	48	41	27	13	5	1	1	0	0	18		
4)	PWL of Turbine L.O. Cooler	91	89	86	83	81	79	77	77	73	85	
	PWL of Turbine L.O. Cooler (3 units)	96	94	91	88	86	84	82	82	78	90	
	NR of Noise Control	0	0	0	0	0	0	0	0	0		
	Ground Level Shielding	0	0	0	0	0	0	0	0	0		
	2300 Hemispherical Radiation	-65	-65	-65	-65	-65	-65	-65	-65	-65		
	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	-1	-2	-3	-7	-17	-32		
Source Sound Level Contribution	31	29	25	22	19	15	10	0	0	21		
6)	PWL of Single Gas Cooler Fan	98	94	93	90	85	83	77	70	68	88	
	PWL of (18) Fans	111	107	106	103	98	96	90	83	81	100	
	NR of Noise Control	0	0	0	0	0	0	0	0	0		
	Ground Level Shielding	-1	-2	-3	-4	-5	-5	-5	-5	-5		
	2300 Hemispherical Radiation	-65	-65	-65	-65	-65	-65	-65	-65	-65		
	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	-1	-2	-3	-7	-17	-32		
Source Sound Level Contribution	44	39	37	33	26	22	13	0	0	29		
7)	PWL of Aboveground Gas Piping	89	94	94	94	94	104	104	104	94	110	
	PWL of Aboveground Gas Piping (3 units)	94	99	99	99	99	109	109	109	99	114	
	NR of Acoustical Pipe Insulation	0	1	3	-7	-12	-14	-16	-16	-16		
	Ground Level Shielding	-1	-2	-3	-4	-5	-5	-5	-5	-5		
	2300 Hemispherical Radiation	-65	-65	-65	-65	-65	-65	-65	-65	-65		
	Atm. Absorption (70% R.H., 60 deg F)	0	0	0	-1	-2	-3	-7	-17	-32		
Source Sound Level Contribution	23	28	29	17	10	17	11	1	0	20	Calc'd Ldn	
Est'd Total Contribution of Proposed Units 1-3		55	49	41	35	29	25	18	9	8	32.2	38.6

Table A: Kidder CS - Est'd Station Sound Level of Proposed Station at NSA #1

DESCRIPTION OF THE STATION NOISE ANALYSIS METHODOLOGY AND THE SOURCE OF SOUND DATA

In general, the predicted sound level contributed by the proposed Station was calculated as a function of frequency from estimated octave-band sound power levels (PWLs) for each significant sound source associated with the proposed Station. The following summarizes the analysis procedure:

- Initially, unweighted octave-band PWLs for each noise source (without noise control) were determined from actual sound measurements performed by H&K on similar equipment and/or obtained from the equipment manufacturer.
- Then, expected noise reductions in dB per octave-band frequency due to any designated noise control measures for each source were subtracted from the estimated PWL.
- Next, octave-band SPLs for each source (with noise control) were determined by compensating for sound attenuation due to propagation (hemispherical radiation) and atmospheric sound absorption.
- Shielding from buildings, terrain or foliage has been conservatively ignored and/or conservatively applied.
- Finally, the estimated octave-band SPLs for each source (with noise control and other sound attenuation effects) were corrected for A-weighting, and the total SPLs of all sound sources were logarithmically summed and corrected for A-weighting to provide the estimated A-wt. sound level contributed at the specified distance(s) by the proposed Station.

Summary of Typical Metrics for Regulating Environmental Noise & Acoustical Terminology Discussed in the Report

- (1) Decibel (dB): A unit for expressing the relative power level difference between acoustical or electrical signals. It is ten times the common logarithm of the ratio of two related quantities that are proportional to power. When adding dB or dBA values, the values must be added logarithmically. For example, the logarithmic addition of **35 dB** plus **35 dB** is **38 dB**.
- (2) Human Perception of Change in Sound Level
 - A **3 dB** change of sound level is barely perceivable by the human ear
 - A **5 or 6 dB** change of sound level is noticeable
 - If sound level increases by **10 dB**, it appears as if the sound intensity has doubled.
- (3) A-Weighted Sound Level (dBA): The A-wt. sound level is a single-figure sound rating, expressed in decibels, which correlates to the human perception of the loudness of sound. The dBA level is commonly used to measure industrial and environmental noise since it is easy to measure and provides a reasonable indication of the human annoyance value of the noise. The dBA measurement is not a good descriptor of a noise consisting of strong low-frequency components or for a noise with tonal components.
- (4) Background or Ambient Noise: The total noise produced by all other sources associated with a given environment in the vicinity of a specific sound source of interest, and includes any Residual Noise.
- (5) Sound Pressure Level (L_p or SPL): Ten times the common logarithm to the base 10 of the ratio of the mean square sound pressure to the square of a reference pressure. Therefore, the sound pressure level is equal to 20 times the common logarithm of the ratio of the sound pressure to a reference pressure (20 micropascals or 0.0002 microbar).
- (6) Octave Band Sound Pressure Level (SPL): Sound is typically measured in frequency ranges (e.g., high-pitched sound, low-pitched sound, etc.) that provides more meaningful sound data regarding the sound character of the noise. When measuring two noise sources for comparison, it is better to measure the spectrum of each noise, such as in octave band SPL frequency ranges. Then, the relative loudness of two sounds can be compared frequency range by frequency range. As an illustration, two noise sources can have the same dBA rating and yet sound completely different. For example, a high-

pitched sound concentrated at a frequency of 2000 Hz could have the same dBA rating as a much louder low-frequency sound concentrated at 50 Hz.

- (7) Daytime Sound Level (L_d) & Nighttime Sound Level (L_n): L_d is the equivalent A-weighted sound level, in decibels, for a 15 hour time period, between 07:00 to 22:00 Hours (7:00 a.m. to 10:00 p.m.). L_n is the equivalent A-weighted sound level, in decibels, for a 9 hour time period, between 22:00 to 07:00 Hours (10:00 p.m. to 7:00 a.m.).
- (8) Equivalent Sound Level (L_{eq}): The equivalent sound level (L_{eq}) can be considered an average sound level measured during a period of time, including any fluctuating sound levels during that period. In this report, the L_{eq} is equal to the level of a steady (in time) A-weighted sound level that would be equivalent to the sampled A-weighted sound level on an energy basis for a specified measurement interval. The concept of the measuring L_{eq} has been used broadly to relate individual and community reaction to aircraft and other environmental noises.
- (9) Day-Night Sound Level (L_{dn}): The L_{dn} is an energy average of the measured daytime L_{eq} (L_d) and the measured nighttime L_{eq} (L_n) plus **10 dB**. The **10-dB** adjustment to the L_n is intended to compensate for nighttime sensitivity. As such, the L_{dn} is not a true measure of the sound level but represents a skewed average that correlates generally with past sound surveys which attempted to relate environmental sound levels with physiological reaction and physiological effects. For a steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, an L_{dn} is approx. **6.4 dB** above the measured L_{eq} .
- (10) Sound Level Meter (SLM): An instrument used to measure sound pressure level, sound level, octave-band SPL, or peak sound pressure level, separately or in any combinations thereof. The measured weighted SPL (i.e., A-Wt. Sound Level or dBA) is obtained by the use of a SLM having a standard frequency-filter for attenuating part of the sound spectrum.

SOUND LEVELS FOR TYPICAL ACTIVITIES

REFERENCE AND COMMUNITY RESPONSES

Subjective Human Response and Conversation	Home and Industrial (Indoor Noise)	dB(A) Scale (Level)	Community and Traffic (Outdoor Noise)	Reference Loudness	Community Reaction To Outdoor Noise
Threshold of Pain		-- 140 --	Aircraft Carrier Military Jet Aircraft		
		-- 130 --	Large Siren at 100 Ft. Jet Takeoff at 200 Ft.		
Threshold of Discomfort	Rock Band (Max.)	-- 120 --	Thunderstorm Activity	8 Times as Loud	
	Discotheque (Max.)	-- 110 --	Elevated Train		
Maximum Vocal Effort	Symphonic Music (Max.)	-- 110 --			
	Industrial Plant	-- 100 --	Auto Horn at 5 Ft.	4 Times as Loud	
Very Loud	Newspaper Printing Rm.	-- 90 --	Compacting Trash Truck	2 Times as Loud	Vigorous Action and Law Suits
Shouting in Ear	Food Blender Symphonic Music (Typ.)	-- 90 --	Heavy Truck at 25 Ft.		
Shouting	Garbage Disposal	-- 80 --	Motorcycle at 25 Ft.	Reference Loudness	Threats of Legal Action Appeals to Officials
Very Annoying	Alarm Clock	-- 80 --	Small Truck at 25 Ft. Heavy Traffic at 50 Ft.		
Moderately Loud	Vacuum Cleaner Electric Typewriter	-- 70 --	Avg. Traffic at 100 Ft.	1/2 as Loud	Widespread Complaints
Normal Conversation	Air Conditioner at 20 Ft.	-- 60 --		1/4 as Loud	Sporadic Complaints
	Typical Office	-- 50 --	Light Traffic at 100 Ft.	1/8 as Loud	No Reaction, Although Noise is Noticeable
Quiet	Living Room Bedroom	-- 40 --	Typical Suburban Area		
	Very Quiet	Library	-- 30 --	Birdsong	
Soft Whisper		Broadcasting Studio	-- 20 --	Rural Area	Just Audible
					Threshold of Hearing
Hoover & Keith Inc. (Consultants in Acoustics) 11391 Meadowglen, Suite D Houston, Texas 77082		-- 0 --			

KIDDER COMPRESSOR STATION
TWO WEEK AMBIENT SOUND SURVEY
(associated with the PennEast Pipeline Project)

H&K Report No. 3454

H&K Job No. 5022

Date of Report: August 15, 2016 (Rev. 2)

Prepared for: **Mott MacDonald**
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REPORT SUMMARY

In this report, Hoover and Keith, Inc. (H&K) present the results of a two (2) week continuous ambient sound survey (“Ambient Survey”) for the proposed **Kidder Compressor Station** (“Station”), a new compressor station to be owned and operated by **PennEast Pipeline Company, LLC**. The Ambient Survey was performed in response to Kidder Township Ordinance No. 174, §180-98 Noise.

The following table summarizes the measured “Ambient Sound Levels” for the project boundaries and distant NSAs.

Measurement Positions at the Property Boundaries and Closest NSAs	Distance to Center of Proposed Compressor Units	Ambient (L_{eq}) Noise Level ⁽¹⁾ (dBA)
NS 1, South Boundary	350 ft. S-SE	68.4
NS 2, East Boundary	750 ft. E-NE	55.6
NS 3, North Boundary	550 ft. N-NW	50.5
NS 4, North Boundary	1,250 ft. NW	51.0
NS 5, NSA #2 (Hickory Run State Park)	5,600 ft. SW	45.1
NS 6, NSA #1 (Houses & St. Game Lands)	2,300 ft. N to NW	53.0

⁽¹⁾ Measured two week L_{eq} ambient sound level in accordance with Kidder Township Ordinance (180-98 Noise).

“Ambient Noise Levels” at the Property Boundaries and NSAs

Our measurements, observations and analysis indicate the following:

- The “Ambient Noise Levels”, as defined in Kidder Township Ordinance No. 174, at the boundaries of the Compressor Station range from 51 to 68 dBA.
- The “Ambient Noise Level”, as defined in Kidder Township Ordinance No. 174, at NSA #1 (i.e., houses and St. Game Lands approximately 2,300 ft. N to NW) is 53 dBA.
- The “Ambient Noise Level”, as defined in Kidder Township Ordinance No. 174, at NSA #2 (i.e., Hickory Run State Park approximately 5,600 ft. SW of the Compressor Station) is 45 dBA.

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1.0 INTRODUCTION

In this report, Hoover and Keith, Inc. (H&K) present the results of a two (2) week continuous ambient sound survey (“Ambient Survey”) for the proposed **Kidder Compressor Station** (“Station”), a new compressor station to be owned and operated by **PennEast Pipeline Company, LLC**. The Ambient Survey was performed in response to Kidder Township Ordinance No. 174, §180-98 Noise.

2.0 AMBIENT SURVEY REQUIREMENTS

The following selected language from Kidder Township Ordinance No. 174, §180-98 Noise summarizes the Ambient Survey requirements:

§180-98 Noise

A. Definitions.

- (1) A-weighted Noise Level (dBA). *A measure of sound pressure in decibels with the sound pressure scale adjusted to conform with the frequency response of the human ear. A sound level meter that measures A-weighted decibels, designated as dBA, has an electrical circuit that allows the meter to have the same sensitivity to sound at different frequencies as the average human ear (2007, Australian Academy of Science).*
- (2) Equivalent Noise Level (Leq). *The dBA level of a steady state sound which has the same dBA weighted sound energy as that contained in the actual time-varying sound being measured over a specific time period (2003, Eilar Associates, Encinitas, CA).*
- (3) Ambient Noise Level. *The average A-weighted Noise Level (Leq) at any specified point which is representative of the noise level of that environment over an extended period of time. It is a composite of all sounds from sources, both near and far.*

B. Limits.

- (2) Ambient Noise Level. *For projects being developed, the Ambient Noise Level for the entire project may be established prior to construction of such project for the duration of construction and operation of such project by measuring the noise level near the boundaries of the property on which the project is to be*

constructed in accord with §180-98C for a continuous two (2)-week period no more than (2) years prior to the start of construction of such project.

- (3) Maximum Noise Level. *Notwithstanding any of the foregoing provisions of this 180-98B, in no event shall a Noise Source produce an A-Weighted Noise Level outside the boundaries of the property on which the Noise Source is located (or in the case of a project considered a single Noise Source, the boundaries of the collective project area) at a level in excess of the limits established in the Maximum Sound Levels Table.*

C. Measurements.

- (1) Type and Certification. *All noise level measurements shall be made using a sound level meter meeting American National Standard Specification for Sound Level Meters (ANSI S1.4-1983 (R2001)/ANSI S1.4A-1985 or the current revision of that standard) for Type 1 instruments. The instrument shall have been laboratory re-certified according to the manufacturer's directions within the periodicity required by the manufacture (usually 1- or 2-year interval) prior to the measurements.*
- (2) Methods. *All measurements shall be taken using the FAST response time and A-weighting.*
- (3) Field Calibration. *A field calibration check, using a certified field calibrator, shall be performed at the beginning and end of the measurement period and reported with the other data.*
- (4) Proposed Projects.
 - (a) *For projects establishing an Ambient Noise Level for the project prior to the approval of such project, the average A-weighted Noise Level (Leq) shall be measured at multiple points near the outside boundaries of the property on which the project is to be construed for a continuous two-week period no more than one (1) year to the start of construction of such project.*
 - (b) *Measurements should be attempted to be performed near outside boundaries which are closest in proximity to where the Noise Source will be located and/or where noise is reasonably expected to be the loudest.*
 - (c) *The measurements must be made by an independent professional using the commonly-accepted measurement procedures specified in ANSI/ASA*

S1.13-2005 (R2010) standard “American National Standard Methods for the Measurement of Sound Pressure Levels in Air”.

3.0 MEASUREMENT METHODOLOGY

Six (6) unattended sound level monitors, meeting the requirements of §180-98 Noise, measured the continuous sound level for two week periods in July, 2016. The sound level monitor locations are depicted on **Figures 1 & 2** in **Appendix A**. Instrumentation certificates for the sound level equipment utilized in the Ambient Survey are included in **Appendix C**.

The sound level monitors measured and stored the A-Wt. sound level in 1 minute increments (i.e., 1 minute L_{eq}) and linear octave band sound pressure levels (from 16 Hz. to 16,000 Hz.). The following is a description of the selected sound measurement positions, including the distant NSAs¹ (i.e., noise sensitive areas):

- Pos. NS 1: South Boundary approximately 350 ft. S-SE of the center of the compressor units.
- Pos. NS 2: East Boundary approximately 750 ft. E-NE of the center of the compressor units.
- Pos. NS 3: North Boundary approximately 550 ft. N-NW of the center of the compressor units.
- Pos. NS 4: North Boundary approximately 1,250 ft. NW of the center of the compressor units.
- Pos. NS 5: NSA #2 (Hickory Run State Park) approximately 5,600 ft. SW of the center of the compressor units.
- Pos. NS 6: NSA #1 (Houses and St. Game Lands) approximately 2,300 ft. N to NW of the center of the compressor units.

¹ Typically, certificate conditions set forth by the Federal Energy Regulatory Commission (FERC) require that the sound level attributable to a new compressor station not exceed an equivalent day-night sound level (L_{dn}) of **55 dBA** at any nearby NSA, such as residences, hospitals or schools.

4.0 MEASUREMENT RESULTS

Table 1 below summarizes the measured “Ambient Sound Levels” for the project boundaries and distant NSAs. Meteorological data during the sound survey is included in **Appendix D**.

Measurement Positions at the Property Boundaries and Closest NSAs	Distance to Center of Proposed Compressor Units	Ambient (L_{eq}) Noise Level ⁽¹⁾ (dBA)
NS 1, South Boundary	350 ft. S-SE	68.4
NS 2, East Boundary	750 ft. E-NE	55.6
NS 3, North Boundary	550 ft. N-NW	50.5
NS 4, North Boundary	1,250 ft. NW	51.0
NS 5, NSA #2 (Hickory Run State Park)	5,600 ft. SW	45.1
NS 6, NSA #1 (Houses & St. Game Lands)	2,300 ft. N to NW	53.0

⁽¹⁾ Measured two week L_{eq} ambient sound level in accordance with Kidder Township Ordinance (180-98 Noise).

Table 1: “Ambient Noise Levels” at the Property Boundaries and NSAs

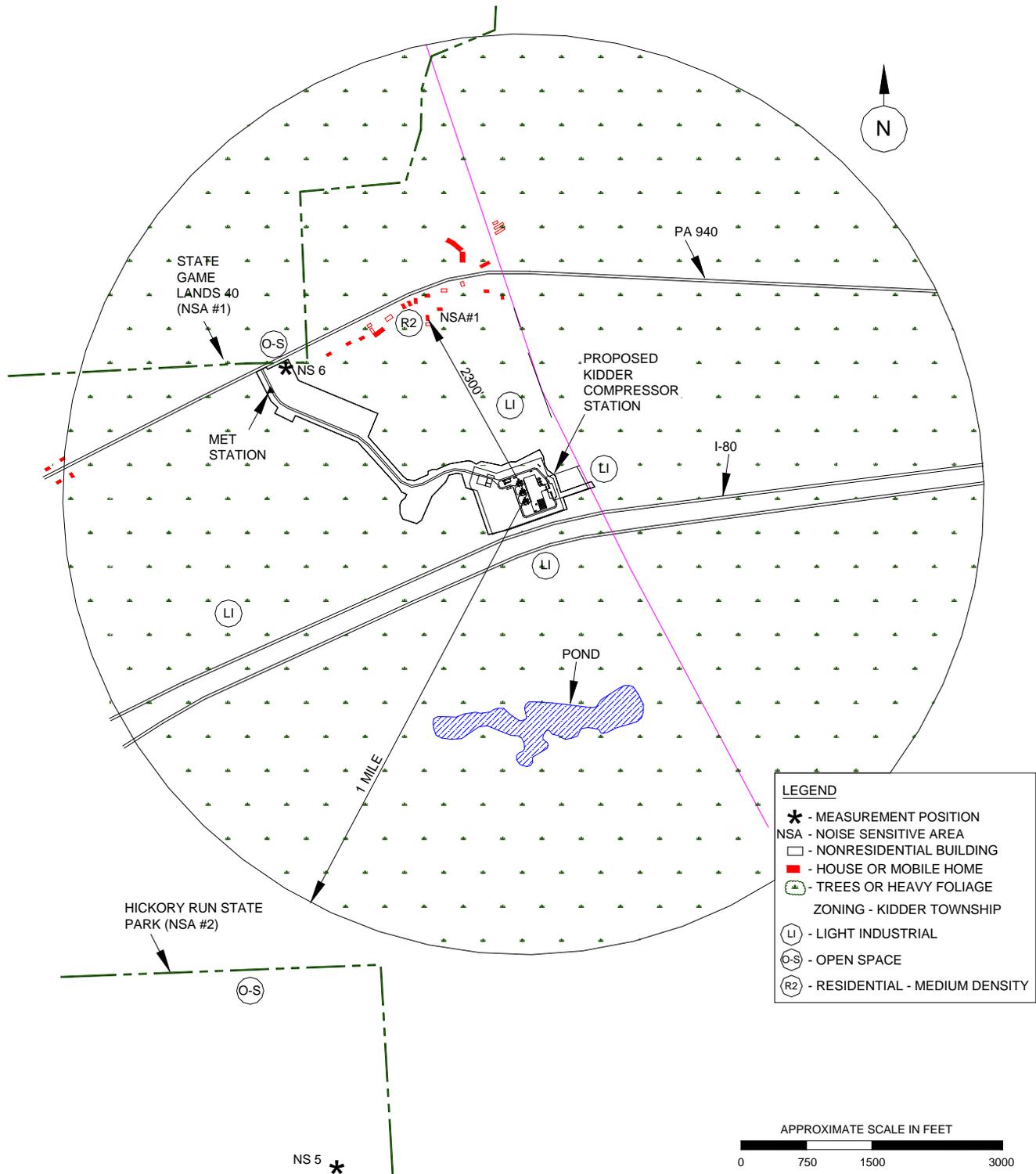


Figure 1: Proposed Kidder Compressor Station and Surrounding Area with Measurement Locations

This page contains Critical Energy Infrastructure Information and has been removed and filed under separate cover.

Met Station Data (44 pages)

(follow this page)

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/13/2016	3:00 PM	81.3	78	1	WSW	0.25	2	SW	28.718	0	0
7/13/2016	3:15 PM	79.1	81	2	SW	0.5	8	SSW	28.711	0	0
7/13/2016	3:30 PM	79.1	83	2	SW	0.5	7	SW	28.702	0	0
7/13/2016	3:45 PM	79.7	80	3	SW	0.75	10	SW	28.701	0	0
7/13/2016	4:00 PM	79.4	81	2	SW	0.5	7	WSW	28.7	0	0
7/13/2016	4:15 PM	78	83	2	SW	0.5	6	SW	28.696	0	0
7/13/2016	4:30 PM	78.1	83	2	SW	0.5	8	E	28.687	0	0
7/13/2016	4:45 PM	77.9	85	3	SW	0.75	8	WSW	28.686	0	0
7/13/2016	5:00 PM	76.9	86	2	SSE	0.5	8	WSW	28.68	0	0
7/13/2016	5:15 PM	75.8	88	3	SSW	0.75	12	E	28.678	0	0
7/13/2016	5:30 PM	74.9	89	3	SW	0.75	9	WSW	28.68	0	0
7/13/2016	5:45 PM	74.1	90	3	SSE	0.75	9	WSW	28.678	0	0
7/13/2016	6:00 PM	73.6	91	2	SW	0.5	8	SSW	28.685	0	0
7/13/2016	6:15 PM	71.4	92	4	SW	1	12	WSW	28.682	0	0
7/13/2016	6:30 PM	69.8	95	3	SW	0.75	9	SE	28.679	0.05	0.62
7/13/2016	6:45 PM	69.3	96	3	S	0.75	9	WSW	28.682	0.02	0.26
7/13/2016	7:00 PM	69.4	97	3	S	0.75	9	WSW	28.675	0.01	0.17
7/13/2016	7:15 PM	69.5	96	2	SW	0.5	7	SW	28.685	0.01	0.04
7/13/2016	7:30 PM	69.5	97	2	SW	0.5	7	WSW	28.688	0	0
7/13/2016	7:45 PM	69.7	97	2	SSW	0.5	7	WSW	28.683	0	0
7/13/2016	8:00 PM	69.7	97	2	SSW	0.5	7	SSE	28.687	0	0
7/13/2016	8:15 PM	69.6	97	2	SSW	0.5	7	W	28.688	0	0
7/13/2016	8:30 PM	69.5	97	2	S	0.5	7	SE	28.681	0	0
7/13/2016	8:45 PM	69.4	97	2	SW	0.5	4	ESE	28.687	0	0
7/13/2016	9:00 PM	69.2	97	2	SW	0.5	7	NW	28.685	0	0
7/13/2016	9:15 PM	69	97	1	WSW	0.25	5	SSW	28.689	0	0
7/13/2016	9:30 PM	68.9	98	2	SW	0.5	7	SE	28.683	0	0
7/13/2016	9:45 PM	68.8	98	1	SW	0.25	5	S	28.678	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/13/2016	10:00 PM	68.8	98	1	SSW	0.25	5	SSW	28.675	0	0
7/13/2016	10:15 PM	68.7	98	2	SW	0.5	5	WSW	28.676	0	0
7/13/2016	10:30 PM	68.8	98	1	ESE	0.25	6	SW	28.674	0	0
7/13/2016	10:45 PM	68.8	98	1	SW	0.25	6	W	28.672	0	0
7/13/2016	11:00 PM	68.8	98	2	SSW	0.5	5	S	28.672	0	0
7/13/2016	11:15 PM	68.8	98	1	SSW	0.25	3	SE	28.676	0	0
7/13/2016	11:30 PM	68.9	98	2	SSW	0.5	6	W	28.675	0	0
7/13/2016	11:45 PM	69	98	2	SW	0.5	8	SW	28.677	0	0
7/14/2016	12:00 AM	69	98	2	SW	0.5	7	WSW	28.672	0	0
7/14/2016	12:15 AM	69	98	1	SW	0.25	3	S	28.672	0	0
7/14/2016	12:30 AM	69	98	1	SW	0.25	5	S	28.677	0	0
7/14/2016	12:45 AM	69	98	2	WSW	0.5	8	SSE	28.676	0	0
7/14/2016	1:00 AM	69.1	98	2	WNW	0.5	8	WNW	28.682	0	0
7/14/2016	1:15 AM	69.1	98	2	SW	0.5	5	SSE	28.685	0	0
7/14/2016	1:30 AM	69.1	98	2	SW	0.5	6	W	28.683	0	0
7/14/2016	1:45 AM	69.1	98	1	S	0.25	7	SE	28.671	0	0
7/14/2016	2:00 AM	69.1	98	2	SSW	0.5	5	SSW	28.665	0	0
7/14/2016	2:15 AM	69.1	98	2	SW	0.5	6	S	28.659	0	0
7/14/2016	2:30 AM	69.2	99	2	S	0.5	6	S	28.661	0	0
7/14/2016	2:45 AM	69.2	99	2	S	0.5	6	SSW	28.652	0	0
7/14/2016	3:00 AM	69.2	99	1	SW	0.25	4	SW	28.646	0	0
7/14/2016	3:15 AM	69.2	99	1	WSW	0.25	5	SW	28.643	0	0
7/14/2016	3:30 AM	69.2	99	1	SW	0.25	5	SSW	28.648	0	0
7/14/2016	3:45 AM	69.3	99	2	SSW	0.5	5	SW	28.646	0	0
7/14/2016	4:00 AM	69.3	99	1	SSW	0.25	3	SW	28.64	0	0
7/14/2016	4:15 AM	69.3	99	1	SW	0.25	4	SW	28.633	0	0
7/14/2016	4:30 AM	69.4	99	1	SSE	0.25	4	S	28.635	0	0
7/14/2016	4:45 AM	69.4	99	2	WSW	0.5	5	WSW	28.628	0	0
7/14/2016	5:00 AM	69.4	99	1	SSW	0.25	5	WSW	28.624	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/14/2016	5:15 AM	69.4	99	2	SSW	0.5	5	SW	28.622	0	0
7/14/2016	5:30 AM	69.3	99	1	SW	0.25	3	SSW	28.623	0	0
7/14/2016	5:45 AM	69.4	99	1	SW	0.25	5	WSW	28.622	0	0
7/14/2016	6:00 AM	69.4	99	1	SW	0.25	4	WSW	28.622	0	0
7/14/2016	6:15 AM	69.5	99	1	SW	0.25	4	SW	28.613	0	0
7/14/2016	6:30 AM	69.6	99	1	SSW	0.25	4	SW	28.611	0	0
7/14/2016	6:45 AM	69.7	99	1	SSW	0.25	3	SW	28.611	0	0
7/14/2016	7:00 AM	69.8	99	1	SW	0.25	5	SSE	28.608	0	0
7/14/2016	7:15 AM	69.8	99	1	SW	0.25	4	SSE	28.607	0	0
7/14/2016	7:30 AM	69.9	99	2	SW	0.5	5	SSE	28.605	0	0
7/14/2016	7:45 AM	70.1	99	1	SSW	0.25	5	SW	28.608	0	0
7/14/2016	8:00 AM	70.2	99	1	SSW	0.25	4	SSW	28.611	0	0
7/14/2016	8:15 AM	70.3	99	1	SSW	0.25	5	SSE	28.614	0	0
7/14/2016	8:30 AM	70.3	99	2	SSW	0.5	6	S	28.611	0	0
7/14/2016	8:45 AM	70.3	99	2	SW	0.5	5	SW	28.614	0	0
7/14/2016	9:00 AM	70.5	99	2	SSW	0.5	6	SSE	28.61	0	0
7/14/2016	9:15 AM	70.6	99	2	S	0.5	9	SSE	28.606	0	0
7/14/2016	9:30 AM	70.7	99	2	SSW	0.5	7	SW	28.605	0	0
7/14/2016	9:45 AM	70.9	99	2	SSW	0.5	7	WSW	28.607	0	0
7/14/2016	10:00 AM	70.8	99	3	SW	0.75	7	SW	28.61	0	0
7/14/2016	10:15 AM	71	99	2	SSW	0.5	5	SSW	28.608	0	0
7/14/2016	10:30 AM	70.9	99	2	SW	0.5	7	SSW	28.612	0	0
7/14/2016	10:45 AM	71.1	99	2	S	0.5	7	SSE	28.611	0	0
7/14/2016	11:00 AM	71.4	99	2	WSW	0.5	8	SW	28.606	0	0
7/14/2016	11:15 AM	72.2	99	2	SW	0.5	7	SSE	28.601	0	0
7/14/2016	11:30 AM	72.8	98	2	SW	0.5	5	S	28.599	0	0
7/14/2016	11:45 AM	73.8	97	2	S	0.5	7	SW	28.594	0	0
7/14/2016	12:00 PM	75	95	3	SW	0.75	11	SW	28.586	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/14/2016	12:15 PM	75.7	94	2	SW	0.5	10	SW	28.58	0	0
7/14/2016	12:30 PM	78.6	93	3	SW	0.75	8	ESE	28.569	0	0
7/14/2016	12:45 PM	79.2	86	4	SW	1	10	SW	28.561	0	0
7/14/2016	1:00 PM	80.3	87	3	S	0.75	9	SE	28.55	0	0
7/14/2016	1:15 PM	79.7	83	4	SW	1	10	SW	28.547	0	0
7/14/2016	1:30 PM	78.8	83	3	W	0.75	11	W	28.538	0	0
7/14/2016	1:45 PM	77	89	1	WSW	0.25	4	SW	28.557	0.04	2.16
7/14/2016	2:00 PM	71.9	93	2	SE	0.5	7	SSW	28.548	0.3	7.2
7/14/2016	2:15 PM	70.4	96	1	SW	0.25	4	SSW	28.551	0	0
7/14/2016	2:30 PM	73.3	97	2	SW	0.5	5	SW	28.552	0	0
7/14/2016	2:45 PM	75.6	95	2	SW	0.5	9	WNW	28.539	0	0
7/14/2016	3:00 PM	77.1	93	2	SSW	0.5	6	S	28.529	0	0
7/14/2016	3:15 PM	78.7	89	2	S	0.5	8	ESE	28.529	0	0
7/14/2016	3:30 PM	79.2	88	3	SSW	0.75	14	SSE	28.527	0	0
7/14/2016	3:45 PM	80.1	85	3	SW	0.75	8	SW	28.523	0	0
7/14/2016	4:00 PM	80.4	84	2	SW	0.5	10	WSW	28.519	0	0
7/14/2016	4:15 PM	81.7	80	2	ENE	0.5	7	SSW	28.523	0	0
7/14/2016	4:30 PM	81.8	78	3	SSW	0.75	9	S	28.526	0	0
7/14/2016	4:45 PM	82	74	2	NE	0.5	10	SSE	28.525	0	0
7/14/2016	5:00 PM	82.1	75	2	SSW	0.5	7	SSE	28.524	0	0
7/14/2016	5:15 PM	82	74	2	S	0.5	9	ENE	28.518	0	0
7/14/2016	5:30 PM	82	75	2	E	0.5	13	SSW	28.515	0	0
7/14/2016	5:45 PM	81.6	71	2	SSW	0.5	9	SSE	28.512	0	0
7/14/2016	6:00 PM	80.9	72	2	SSW	0.5	7	SSE	28.517	0	0
7/14/2016	6:15 PM	80.3	73	2	NNW	0.5	12	W	28.52	0	0
7/14/2016	6:30 PM	80	73	1	SW	0.25	12	SSE	28.522	0	0
7/14/2016	6:45 PM	79.4	75	1	S	0.25	5	SSE	28.524	0	0
7/14/2016	7:00 PM	78.8	75	1	W	0.25	4	SSW	28.53	0	0
7/14/2016	7:15 PM	78.4	77	1	ESE	0.25	4	S	28.529	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/14/2016	7:30 PM	77.4	79	0	E	0	2	E	28.536	0	0
7/14/2016	7:45 PM	76.3	82	0	E	0	2	E	28.537	0	0
7/14/2016	8:00 PM	75.4	83	0	E	0	2	E	28.539	0	0
7/14/2016	8:15 PM	74.7	86	0	---	0	0	---	28.542	0	0
7/14/2016	8:30 PM	73.6	87	0	---	0	0	---	28.548	0	0
7/14/2016	8:45 PM	72.4	88	0	---	0	0	---	28.548	0	0
7/14/2016	9:00 PM	71.4	89	0	---	0	0	---	28.548	0	0
7/14/2016	9:15 PM	70.6	90	0	---	0	0	---	28.55	0	0
7/14/2016	9:30 PM	69.6	92	0	---	0	0	---	28.55	0	0
7/14/2016	9:45 PM	69.1	93	0	---	0	0	---	28.556	0	0
7/14/2016	10:00 PM	68.7	93	0	---	0	0	---	28.556	0	0
7/14/2016	10:15 PM	68.3	94	0	---	0	0	---	28.556	0	0
7/14/2016	10:30 PM	68.1	94	0	---	0	0	---	28.554	0	0
7/14/2016	10:45 PM	67.8	94	0	---	0	0	---	28.557	0	0
7/14/2016	11:00 PM	67.7	95	0	---	0	0	---	28.557	0	0
7/14/2016	11:15 PM	67.3	95	0	---	0	0	---	28.557	0	0
7/14/2016	11:30 PM	67.1	95	0	---	0	0	---	28.556	0	0
7/14/2016	11:45 PM	67	95	0	---	0	0	---	28.561	0	0
7/15/2016	12:00 AM	67	95	0	---	0	0	---	28.567	0	0
7/15/2016	12:15 AM	67	95	0	---	0	0	---	28.567	0	0
7/15/2016	12:30 AM	67	95	0	---	0	0	---	28.564	0	0
7/15/2016	12:45 AM	67.1	94	0	---	0	0	---	28.559	0	0
7/15/2016	1:00 AM	65.5	95	0	---	0	0	---	28.56	0	0
7/15/2016	1:15 AM	65.4	95	0	---	0	0	---	28.559	0	0
7/15/2016	1:30 AM	64.8	97	0	---	0	0	---	28.559	0	0
7/15/2016	1:45 AM	65.2	97	0	---	0	0	---	28.557	0	0
7/15/2016	2:00 AM	64.9	97	0	---	0	0	---	28.554	0	0
7/15/2016	2:15 AM	64.8	97	0	---	0	0	---	28.555	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/15/2016	2:30 AM	64.8	97	0	---	0	0	---	28.555	0	0
7/15/2016	2:45 AM	65	98	0	---	0	0	---	28.559	0	0
7/15/2016	3:00 AM	64.8	97	0	---	0	0	---	28.561	0	0
7/15/2016	3:15 AM	64.4	98	0	---	0	0	---	28.561	0	0
7/15/2016	3:30 AM	64	98	0	---	0	0	---	28.564	0	0
7/15/2016	3:45 AM	64.8	98	0	---	0	0	---	28.56	0	0
7/15/2016	4:00 AM	65	98	0	---	0	0	---	28.553	0	0
7/15/2016	4:15 AM	65	97	0	---	0	0	---	28.558	0	0
7/15/2016	4:30 AM	64.1	97	0	E	0	2	E	28.565	0	0
7/15/2016	4:45 AM	65	98	1	E	0.25	2	E	28.564	0	0
7/15/2016	5:00 AM	65.4	97	0	E	0	1	E	28.569	0	0
7/15/2016	5:15 AM	65	97	0	---	0	0	---	28.579	0	0
7/15/2016	5:30 AM	64.9	96	0	---	0	0	---	28.583	0	0
7/15/2016	5:45 AM	64.6	98	0	---	0	0	---	28.589	0	0
7/15/2016	6:00 AM	64.8	98	0	---	0	0	---	28.594	0	0
7/15/2016	6:15 AM	65.2	98	0	---	0	0	---	28.597	0	0
7/15/2016	6:30 AM	65.1	98	0	---	0	0	---	28.596	0	0
7/15/2016	6:45 AM	65.5	98	0	---	0	0	---	28.597	0	0
7/15/2016	7:00 AM	66.1	98	0	---	0	0	---	28.6	0	0
7/15/2016	7:15 AM	67	98	0	---	0	0	---	28.602	0	0
7/15/2016	7:30 AM	68	98	0	E	0	2	E	28.604	0	0
7/15/2016	7:45 AM	69.4	96	0	E	0	2	SW	28.608	0	0
7/15/2016	8:00 AM	70.9	93	1	SSW	0.25	5	SSE	28.607	0	0
7/15/2016	8:15 AM	71.8	91	1	S	0.25	2	SSE	28.607	0	0
7/15/2016	8:30 AM	72.4	91	1	S	0.25	4	SE	28.615	0	0
7/15/2016	8:45 AM	71.9	91	1	SW	0.25	2	S	28.62	0	0
7/15/2016	9:00 AM	72	92	0	S	0	2	SSE	28.619	0	0
7/15/2016	9:15 AM	72.4	91	1	S	0.25	4	SSW	28.622	0	0
7/15/2016	9:30 AM	72.8	92	1	SW	0.25	3	E	28.624	0.02	0.05

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/15/2016	9:45 AM	73	90	1	SSW	0.25	5	S	28.623	0	0.04
7/15/2016	10:00 AM	74.9	89	2	SW	0.5	6	SSW	28.622	0	0
7/15/2016	10:15 AM	76.3	85	2	W	0.5	7	E	28.621	0	0
7/15/2016	10:30 AM	77.3	83	2	NNE	0.5	6	S	28.62	0	0
7/15/2016	10:45 AM	77.8	82	2	SW	0.5	9	SSW	28.623	0	0
7/15/2016	11:00 AM	78.9	81	2	SSW	0.5	9	S	28.626	0	0
7/15/2016	11:15 AM	79.2	80	2	W	0.5	7	E	28.626	0	0
7/15/2016	11:30 AM	78.7	80	2	NNE	0.5	8	SSE	28.63	0	0
7/15/2016	11:45 AM	77.1	81	2	NNW	0.5	6	E	28.631	0	0
7/15/2016	12:00 PM	78.1	82	1	S	0.25	5	SSE	28.623	0	0
7/15/2016	12:15 PM	79.8	77	3	ENE	0.75	8	S	28.614	0	0
7/15/2016	12:30 PM	80.5	78	2	SSW	0.5	7	SW	28.613	0	0
7/15/2016	12:45 PM	81.8	74	2	W	0.5	10	SSW	28.61	0	0
7/15/2016	1:00 PM	80.5	71	3	SSW	0.75	8	WNW	28.608	0	0
7/15/2016	1:15 PM	79.3	74	2	ENE	0.5	10	SW	28.608	0	0
7/15/2016	1:30 PM	81.2	72	2	WSW	0.5	8	SE	28.6	0	0
7/15/2016	1:45 PM	82.7	70	3	SW	0.75	11	SSW	28.601	0	0
7/15/2016	2:00 PM	82.8	71	3	S	0.75	9	SSW	28.596	0	0
7/15/2016	2:15 PM	82.6	69	3	SSW	0.75	9	S	28.59	0	0
7/15/2016	2:30 PM	83	69	2	SW	0.5	7	SSW	28.587	0	0
7/15/2016	2:45 PM	83.3	66	3	SSE	0.75	12	S	28.581	0	0
7/15/2016	3:00 PM	82.7	69	3	S	0.75	9	SW	28.584	0	0
7/15/2016	3:15 PM	81.2	68	2	W	0.5	10	S	28.586	0	0
7/15/2016	3:30 PM	80.1	73	2	W	0.5	8	WSW	28.587	0	0
7/15/2016	3:45 PM	80.2	72	2	ENE	0.5	5	S	28.584	0	0
7/15/2016	4:00 PM	80.1	73	2	S	0.5	6	E	28.576	0	0
7/15/2016	4:15 PM	81.2	68	2	WSW	0.5	12	ESE	28.575	0	0
7/15/2016	4:30 PM	81.7	67	3	SSW	0.75	10	S	28.573	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/15/2016	4:45 PM	80.6	67	2	SSE	0.5	8	WSW	28.576	0	0
7/15/2016	5:00 PM	80.4	69	1	E	0.25	6	SSW	28.577	0	0
7/15/2016	5:15 PM	81.3	69	2	SSW	0.5	7	S	28.575	0	0
7/15/2016	5:30 PM	81.4	67	2	E	0.5	9	SSW	28.575	0	0
7/15/2016	5:45 PM	80.8	67	2	SSW	0.5	6	S	28.571	0	0
7/15/2016	6:00 PM	79.8	68	2	WSW	0.5	8	W	28.574	0	0
7/15/2016	6:15 PM	79.2	69	2	SW	0.5	10	SSW	28.569	0	0
7/15/2016	6:30 PM	78.6	71	1	SSW	0.25	5	NE	28.568	0	0
7/15/2016	6:45 PM	78	71	1	SW	0.25	5	ENE	28.567	0	0
7/15/2016	7:00 PM	77.3	71	1	SW	0.25	4	ESE	28.563	0	0
7/15/2016	7:15 PM	76.6	75	1	SW	0.25	5	SSE	28.57	0	0
7/15/2016	7:30 PM	76.2	74	1	S	0.25	4	SSW	28.572	0	0
7/15/2016	7:45 PM	75.7	75	1	S	0.25	3	SSE	28.573	0	0
7/15/2016	8:00 PM	74.8	77	0	SSW	0	2	SSW	28.578	0	0
7/15/2016	8:15 PM	73.7	80	0	---	0	0	---	28.582	0	0
7/15/2016	8:30 PM	72.4	82	0	---	0	0	---	28.587	0	0
7/15/2016	8:45 PM	70.9	82	0	SSW	0	1	SSW	28.592	0	0
7/15/2016	9:00 PM	69.8	84	0	SSW	0	1	SSW	28.604	0	0
7/15/2016	9:15 PM	68.9	85	0	SSW	0	1	SSW	28.613	0	0
7/15/2016	9:30 PM	68.2	86	0	---	0	0	---	28.62	0	0
7/15/2016	9:45 PM	67.7	87	0	SSW	0	1	SSW	28.629	0	0
7/15/2016	10:00 PM	67.4	88	0	SSW	0	1	SSW	28.636	0	0
7/15/2016	10:15 PM	66.7	89	0	SSW	0	1	SSW	28.642	0	0
7/15/2016	10:30 PM	66.5	88	0	---	0	0	---	28.653	0	0
7/15/2016	10:45 PM	66.1	89	0	---	0	0	---	28.658	0	0
7/15/2016	11:00 PM	65.4	90	0	---	0	0	---	28.661	0	0
7/15/2016	11:15 PM	65.3	89	0	---	0	0	---	28.663	0	0
7/15/2016	11:30 PM	64.7	89	0	---	0	0	---	28.664	0	0
7/15/2016	11:45 PM	64.4	89	0	---	0	0	---	28.666	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/16/2016	12:00 AM	63.5	91	0	---	0	0	---	28.667	0	0
7/16/2016	12:15 AM	61.9	93	0	---	0	0	---	28.671	0	0
7/16/2016	12:30 AM	61.3	94	0	---	0	0	---	28.668	0	0
7/16/2016	12:45 AM	60.9	96	0	---	0	0	---	28.667	0	0
7/16/2016	1:00 AM	60.9	96	0	---	0	0	---	28.669	0	0
7/16/2016	1:15 AM	61.5	95	0	---	0	0	---	28.666	0	0
7/16/2016	1:30 AM	61.9	94	0	---	0	0	---	28.665	0	0
7/16/2016	1:45 AM	61.4	95	0	---	0	0	---	28.664	0	0
7/16/2016	2:00 AM	61.1	95	0	---	0	0	---	28.665	0	0
7/16/2016	2:15 AM	61.4	97	0	---	0	0	---	28.661	0	0
7/16/2016	2:30 AM	61.4	96	0	SSW	0	2	SSW	28.662	0	0
7/16/2016	2:45 AM	61	96	0	SSW	0	1	SSW	28.668	0	0
7/16/2016	3:00 AM	61	96	0	---	0	0	---	28.665	0	0
7/16/2016	3:15 AM	60.9	96	0	SSW	0	1	SSW	28.668	0	0
7/16/2016	3:30 AM	61.3	97	0	SSW	0	1	SSW	28.666	0	0
7/16/2016	3:45 AM	61.4	95	0	---	0	0	---	28.67	0	0
7/16/2016	4:00 AM	61.2	96	0	---	0	0	---	28.669	0	0
7/16/2016	4:15 AM	61.4	96	0	---	0	0	---	28.669	0	0
7/16/2016	4:30 AM	60.8	96	0	---	0	0	---	28.674	0	0
7/16/2016	4:45 AM	60.4	96	0	---	0	0	---	28.678	0	0
7/16/2016	5:00 AM	60.2	97	0	---	0	0	---	28.682	0	0
7/16/2016	5:15 AM	60.7	97	0	---	0	0	---	28.681	0	0
7/16/2016	5:30 AM	61.1	97	0	---	0	0	---	28.683	0	0
7/16/2016	5:45 AM	60.7	95	0	---	0	0	---	28.684	0	0
7/16/2016	6:00 AM	60.2	97	0	---	0	0	---	28.695	0	0
7/16/2016	6:15 AM	60.2	96	0	---	0	0	---	28.7	0	0
7/16/2016	6:30 AM	60.4	97	0	---	0	0	---	28.706	0	0
7/16/2016	6:45 AM	60.9	96	0	---	0	0	---	28.709	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/16/2016	7:00 AM	61.2	95	0	---	0	0	---	28.711	0	0
7/16/2016	7:15 AM	61.9	96	0	---	0	0	---	28.72	0	0
7/16/2016	7:30 AM	62.9	95	0	SSW	0	2	SSW	28.72	0	0
7/16/2016	7:45 AM	64.1	94	1	SSW	0.25	2	SSW	28.72	0	0
7/16/2016	8:00 AM	65.7	94	0	SSW	0	1	SSW	28.727	0	0
7/16/2016	8:15 AM	68.2	88	0	---	0	0	---	28.731	0	0
7/16/2016	8:30 AM	69.4	87	0	---	0	0	---	28.734	0	0
7/16/2016	8:45 AM	70.7	79	0	---	0	0	---	28.734	0	0
7/16/2016	9:00 AM	71.8	83	0	SSW	0	2	SSW	28.735	0	0
7/16/2016	9:15 AM	74.1	75	1	SSW	0.25	3	SSW	28.735	0	0
7/16/2016	9:30 AM	74.7	78	1	SSW	0.25	3	SSW	28.735	0	0
7/16/2016	9:45 AM	74.8	77	1	SSW	0.25	2	SSW	28.735	0	0
7/16/2016	10:00 AM	75.2	73	1	S	0.25	2	SSW	28.736	0	0
7/16/2016	10:15 AM	75.8	71	1	SSW	0.25	3	ENE	28.74	0	0
7/16/2016	10:30 AM	76.8	73	1	ENE	0.25	2	NE	28.743	0	0
7/16/2016	10:45 AM	78	67	1	E	0.25	4	ENE	28.745	0	0
7/16/2016	11:00 AM	78.9	67	1	NNE	0.25	3	NNE	28.742	0	0
7/16/2016	11:15 AM	78.8	67	1	S	0.25	3	S	28.75	0	0
7/16/2016	11:30 AM	79	70	1	SW	0.25	5	SW	28.747	0	0
7/16/2016	11:45 AM	79.3	72	1	SW	0.25	2	SW	28.749	0	0
7/16/2016	12:00 PM	79.1	69	1	ESE	0.25	3	SW	28.748	0	0
7/16/2016	12:15 PM	78.8	69	1	S	0.25	3	SSW	28.744	0	0
7/16/2016	12:30 PM	78.7	68	2	NNW	0.5	6	SSE	28.745	0	0
7/16/2016	12:45 PM	79	69	2	S	0.5	4	SSE	28.745	0	0
7/16/2016	1:00 PM	78.4	73	2	SSE	0.5	5	SSE	28.745	0	0
7/16/2016	1:15 PM	79.3	73	1	W	0.25	3	N	28.746	0	0
7/16/2016	1:30 PM	81.2	67	1	WNW	0.25	4	W	28.743	0	0
7/16/2016	1:45 PM	81.3	69	2	NNE	0.5	7	SE	28.743	0	0
7/16/2016	2:00 PM	80.4	66	2	SW	0.5	9	SSE	28.739	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/16/2016	2:15 PM	80.5	68	1	SSW	0.25	4	S	28.738	0	0
7/16/2016	2:30 PM	80.8	68	1	SSW	0.25	3	SSW	28.733	0	0
7/16/2016	2:45 PM	80.6	71	1	SSW	0.25	5	SSW	28.73	0	0
7/16/2016	3:00 PM	80.5	68	2	SSW	0.5	4	SSW	28.721	0	0
7/16/2016	3:15 PM	81.1	70	2	SSW	0.5	6	SSW	28.715	0	0
7/16/2016	3:30 PM	80.6	68	1	ESE	0.25	4	N	28.711	0	0
7/16/2016	3:45 PM	80.9	68	2	SW	0.5	7	SE	28.708	0	0
7/16/2016	4:00 PM	80.3	72	2	SW	0.5	5	SSE	28.704	0	0
7/16/2016	4:15 PM	80.1	72	1	S	0.25	5	S	28.703	0	0
7/16/2016	4:30 PM	80.4	72	1	SSW	0.25	4	S	28.699	0	0
7/16/2016	4:45 PM	80.6	68	1	SSW	0.25	4	SSE	28.698	0	0
7/16/2016	5:00 PM	81.2	69	0	S	0	2	S	28.703	0	0
7/16/2016	5:15 PM	80.3	74	1	SSW	0.25	3	SSW	28.706	0	0
7/16/2016	5:30 PM	78.8	77	1	N	0.25	3	NNE	28.705	0	0
7/16/2016	5:45 PM	77.7	80	1	NNW	0.25	2	NNW	28.705	0	0
7/16/2016	6:00 PM	76.7	80	0	NNW	0	1	NNW	28.709	0	0
7/16/2016	6:15 PM	78.1	76	1	SSE	0.25	5	SE	28.71	0	0
7/16/2016	6:30 PM	78.4	71	1	S	0.25	4	NE	28.714	0	0
7/16/2016	6:45 PM	77.3	81	0	NE	0	1	NE	28.714	0	0
7/16/2016	7:00 PM	75.5	84	0	---	0	0	---	28.711	0	0
7/16/2016	7:15 PM	74.5	83	0	---	0	0	---	28.714	0	0
7/16/2016	7:30 PM	73.4	87	0	ENE	0	2	ENE	28.721	0	0
7/16/2016	7:45 PM	70.3	88	1	SSE	0.25	4	S	28.733	0.26	2.56
7/16/2016	8:00 PM	64.4	89	4	SSW	1	19	SSW	28.732	0.4	5.28
7/16/2016	8:15 PM	64.8	92	3	SSE	0.75	11	SSE	28.739	0	0
7/16/2016	8:30 PM	64.6	95	2	NNW	0.5	7	S	28.749	0.04	1.84
7/16/2016	8:45 PM	64.5	97	2	NNE	0.5	8	SSE	28.747	0.37	5.59
7/16/2016	9:00 PM	64.5	96	1	NNW	0.25	4	NW	28.758	0	0.04

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/16/2016	9:15 PM	64.2	97	0	NNW	0	2	NNW	28.757	0	0
7/16/2016	9:30 PM	63.9	97	0	NNW	0	1	NNW	28.758	0	0
7/16/2016	9:45 PM	63.8	97	0	NNW	0	2	NNW	28.765	0	0
7/16/2016	10:00 PM	64	98	0	NNW	0	2	NNW	28.772	0	0
7/16/2016	10:15 PM	63.9	98	1	NNW	0.25	4	SSE	28.787	0.15	5.05
7/16/2016	10:30 PM	63.9	98	1	ENE	0.25	3	NE	28.78	0.08	2.78
7/16/2016	10:45 PM	63.7	98	1	E	0.25	3	N	28.77	0.02	0.42
7/16/2016	11:00 PM	63.8	98	1	NNE	0.25	3	NNE	28.763	0	0
7/16/2016	11:15 PM	63.4	98	1	NNE	0.25	2	NNE	28.76	0	0
7/16/2016	11:30 PM	62.8	97	0	NNE	0	1	NNE	28.758	0	0
7/16/2016	11:45 PM	62.3	98	0	E	0	2	NE	28.763	0	0
7/17/2016	12:00 AM	62.3	98	0	E	0	2	E	28.773	0	0
7/17/2016	12:15 AM	62.4	98	1	E	0.25	3	E	28.775	0	0
7/17/2016	12:30 AM	62.6	98	0	E	0	2	E	28.768	0	0
7/17/2016	12:45 AM	62.9	98	1	E	0.25	2	E	28.766	0	0
7/17/2016	1:00 AM	62.8	98	0	ENE	0	2	ENE	28.764	0	0
7/17/2016	1:15 AM	62.7	98	0	ENE	0	1	ENE	28.764	0	0
7/17/2016	1:30 AM	63	99	0	ENE	0	2	ENE	28.766	0	0
7/17/2016	1:45 AM	62.4	98	0	---	0	0	---	28.762	0	0
7/17/2016	2:00 AM	62.5	98	0	---	0	0	---	28.757	0	0
7/17/2016	2:15 AM	62.4	98	0	ENE	0	2	ENE	28.753	0	0
7/17/2016	2:30 AM	62.1	98	0	ENE	0	2	ENE	28.751	0	0
7/17/2016	2:45 AM	61.5	98	0	ENE	0	1	ENE	28.748	0	0
7/17/2016	3:00 AM	61.4	98	0	---	0	0	---	28.753	0	0
7/17/2016	3:15 AM	61.7	99	1	ENE	0.25	2	ENE	28.759	0	0
7/17/2016	3:30 AM	61.5	98	1	NNE	0.25	2	NNE	28.76	0	0
7/17/2016	3:45 AM	61.5	98	0	NNE	0	2	NNE	28.761	0	0
7/17/2016	4:00 AM	61.3	98	0	NNE	0	1	NNE	28.76	0	0
7/17/2016	4:15 AM	61.3	98	0	---	0	0	---	28.766	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/17/2016	4:30 AM	61.6	99	0	---	0	0	---	28.769	0	0
7/17/2016	4:45 AM	61.2	98	0	---	0	0	---	28.772	0	0
7/17/2016	5:00 AM	60.5	98	0	---	0	0	---	28.767	0	0
7/17/2016	5:15 AM	60.5	99	0	---	0	0	---	28.775	0	0
7/17/2016	5:30 AM	60.8	99	0	NNE	0	1	NNE	28.776	0	0
7/17/2016	5:45 AM	60.5	99	0	NNE	0	1	NNE	28.781	0	0
7/17/2016	6:00 AM	60.3	98	0	NNE	0	1	NNE	28.776	0	0
7/17/2016	6:15 AM	60.3	98	0	NNE	0	1	NNE	28.782	0	0
7/17/2016	6:30 AM	60.4	99	0	NNE	0	1	NNE	28.788	0	0
7/17/2016	6:45 AM	60.7	99	0	NNE	0	1	NNE	28.791	0	0
7/17/2016	7:00 AM	61.1	99	0	NNE	0	1	NNE	28.799	0	0
7/17/2016	7:15 AM	61.2	99	0	---	0	0	---	28.796	0	0
7/17/2016	7:30 AM	62.3	99	0	---	0	0	---	28.804	0	0
7/17/2016	7:45 AM	63	99	0	---	0	0	---	28.807	0	0
7/17/2016	8:00 AM	65	99	0	---	0	0	---	28.808	0	0
7/17/2016	8:15 AM	66.1	99	0	---	0	0	---	28.807	0	0
7/17/2016	8:30 AM	67.2	99	0	---	0	0	---	28.806	0	0
7/17/2016	8:45 AM	67.2	98	1	NNE	0.25	2	NNE	28.805	0	0
7/17/2016	9:00 AM	68.3	95	0	NW	0	2	NW	28.815	0	0
7/17/2016	9:15 AM	69.2	94	1	NW	0.25	3	NNW	28.815	0	0
7/17/2016	9:30 AM	70.4	94	1	NE	0.25	4	SSE	28.818	0	0
7/17/2016	9:45 AM	71.2	91	1	ENE	0.25	3	NNE	28.828	0	0
7/17/2016	10:00 AM	71.1	91	2	ESE	0.5	4	SSE	28.833	0	0
7/17/2016	10:15 AM	71.6	90	1	WNW	0.25	4	ESE	28.835	0	0
7/17/2016	10:30 AM	72.1	89	1	NNW	0.25	4	NNE	28.834	0	0
7/17/2016	10:45 AM	72.9	88	1	W	0.25	4	SSE	28.831	0	0
7/17/2016	11:00 AM	72.7	88	2	SSW	0.5	4	SSE	28.826	0	0
7/17/2016	11:15 AM	73	88	2	SW	0.5	6	W	28.828	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/17/2016	11:30 AM	73.9	86	2	S	0.5	6	W	28.835	0	0
7/17/2016	11:45 AM	74.6	84	2	W	0.5	7	WSW	28.838	0	0
7/17/2016	12:00 PM	74.8	79	2	SSW	0.5	7	E	28.842	0	0
7/17/2016	12:15 PM	75	82	2	WSW	0.5	7	W	28.833	0	0
7/17/2016	12:30 PM	75.7	81	2	NNE	0.5	7	WSW	28.829	0	0
7/17/2016	12:45 PM	76.7	75	2	NNE	0.5	5	ENE	28.827	0	0
7/17/2016	1:00 PM	77.6	77	2	WSW	0.5	5	SSW	28.826	0	0
7/17/2016	1:15 PM	78.3	76	2	SSW	0.5	4	W	28.82	0	0
7/17/2016	1:30 PM	77.7	76	1	N	0.25	4	ESE	28.819	0	0
7/17/2016	1:45 PM	76.7	73	1	SSW	0.25	4	SSW	28.819	0	0
7/17/2016	2:00 PM	78.4	74	1	NNE	0.25	5	SSW	28.812	0	0
7/17/2016	2:15 PM	79.7	72	1	NNE	0.25	4	NE	28.813	0	0
7/17/2016	2:30 PM	79.9	70	2	SE	0.5	7	SSE	28.822	0	0
7/17/2016	2:45 PM	79.7	66	2	SSW	0.5	7	SSW	28.819	0	0
7/17/2016	3:00 PM	80.2	71	2	S	0.5	5	SSW	28.808	0	0
7/17/2016	3:15 PM	80.7	67	1	SW	0.25	6	S	28.809	0	0
7/17/2016	3:30 PM	80.1	65	3	SSW	0.75	8	SSW	28.806	0	0
7/17/2016	3:45 PM	79.4	67	3	SSW	0.75	10	S	28.815	0	0
7/17/2016	4:00 PM	80.2	66	1	NE	0.25	4	ENE	28.814	0	0
7/17/2016	4:15 PM	79.8	69	2	ENE	0.5	7	E	28.811	0	0
7/17/2016	4:30 PM	79.7	68	2	E	0.5	5	SW	28.809	0	0
7/17/2016	4:45 PM	79.6	66	2	S	0.5	7	SE	28.808	0	0
7/17/2016	5:00 PM	79.5	66	2	S	0.5	6	S	28.805	0	0
7/17/2016	5:15 PM	79.2	70	2	NE	0.5	6	SSW	28.8	0	0
7/17/2016	5:30 PM	79	68	1	SSW	0.25	4	SSW	28.805	0	0
7/17/2016	5:45 PM	78.8	67	2	S	0.5	5	S	28.802	0	0
7/17/2016	6:00 PM	78	71	1	SSW	0.25	9	SSW	28.801	0	0
7/17/2016	6:15 PM	77.3	73	1	E	0.25	5	ENE	28.801	0	0
7/17/2016	6:30 PM	76.6	71	1	SSE	0.25	3	ESE	28.795	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/17/2016	6:45 PM	75.8	75	1	SSE	0.25	4	SSE	28.797	0	0
7/17/2016	7:00 PM	75.1	76	1	SSW	0.25	2	SSW	28.798	0	0
7/17/2016	7:15 PM	74.3	78	0	SE	0	2	SE	28.802	0	0
7/17/2016	7:30 PM	73.3	81	0	SE	0	2	SE	28.8	0	0
7/17/2016	7:45 PM	72.3	81	0	SE	0	1	SE	28.799	0	0
7/17/2016	8:00 PM	71.5	85	0	---	0	0	---	28.805	0	0
7/17/2016	8:15 PM	70.4	86	0	SE	0	1	SE	28.806	0	0
7/17/2016	8:30 PM	69.5	87	0	---	0	0	---	28.805	0	0
7/17/2016	8:45 PM	68.6	88	0	---	0	0	---	28.808	0	0
7/17/2016	9:00 PM	67.6	89	0	---	0	0	---	28.806	0	0
7/17/2016	9:15 PM	66.7	91	0	---	0	0	---	28.808	0	0
7/17/2016	9:30 PM	65.6	92	0	---	0	0	---	28.818	0	0
7/17/2016	9:45 PM	65.2	93	0	---	0	0	---	28.82	0	0
7/17/2016	10:00 PM	65.1	93	0	---	0	0	---	28.818	0	0
7/17/2016	10:15 PM	64.8	94	0	---	0	0	---	28.819	0	0
7/17/2016	10:30 PM	64.5	93	0	---	0	0	---	28.816	0	0
7/17/2016	10:45 PM	64.3	93	0	---	0	0	---	28.818	0	0
7/17/2016	11:00 PM	64.1	93	0	---	0	0	---	28.816	0	0
7/17/2016	11:15 PM	63.8	93	0	---	0	0	---	28.814	0	0
7/17/2016	11:30 PM	63.4	94	0	---	0	0	---	28.816	0	0
7/17/2016	11:45 PM	63.1	94	0	---	0	0	---	28.817	0	0
7/18/2016	12:00 AM	62.5	95	0	---	0	0	---	28.821	0	0
7/18/2016	12:15 AM	62.1	96	0	---	0	0	---	28.819	0	0
7/18/2016	12:30 AM	62.5	97	0	---	0	0	---	28.821	0	0
7/18/2016	12:45 AM	62.4	96	0	---	0	0	---	28.819	0	0
7/18/2016	1:00 AM	61.8	96	0	---	0	0	---	28.82	0	0
7/18/2016	1:15 AM	61.6	96	0	---	0	0	---	28.822	0	0
7/18/2016	1:30 AM	61.3	97	0	---	0	0	---	28.816	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/18/2016	1:45 AM	61	97	0	---	0	0	---	28.811	0	0
7/18/2016	2:00 AM	61.4	97	0	---	0	0	---	28.808	0	0
7/18/2016	2:15 AM	61.3	97	0	---	0	0	---	28.807	0	0
7/18/2016	2:30 AM	61.4	97	0	---	0	0	---	28.811	0	0
7/18/2016	2:45 AM	61.3	96	0	---	0	0	---	28.811	0	0
7/18/2016	3:00 AM	61.4	97	0	---	0	0	---	28.808	0	0
7/18/2016	3:15 AM	61.3	96	0	SE	0	1	SE	28.807	0	0
7/18/2016	3:30 AM	61.2	97	0	---	0	0	---	28.803	0	0
7/18/2016	3:45 AM	61.4	96	0	SE	0	1	SE	28.8	0	0
7/18/2016	4:00 AM	61.6	95	0	SE	0	2	SE	28.799	0	0
7/18/2016	4:15 AM	61.8	95	0	SE	0	1	SE	28.797	0	0
7/18/2016	4:30 AM	61.5	95	0	SE	0	1	SE	28.791	0	0
7/18/2016	4:45 AM	61.5	97	0	---	0	0	---	28.789	0	0
7/18/2016	5:00 AM	62.1	95	0	---	0	0	---	28.795	0	0
7/18/2016	5:15 AM	62	95	0	---	0	0	---	28.794	0	0
7/18/2016	5:30 AM	61.9	95	0	---	0	0	---	28.796	0	0
7/18/2016	5:45 AM	61.6	96	0	---	0	0	---	28.794	0	0
7/18/2016	6:00 AM	61.8	96	0	---	0	0	---	28.797	0	0
7/18/2016	6:15 AM	62.4	95	0	---	0	0	---	28.797	0	0
7/18/2016	6:30 AM	62.8	94	0	---	0	0	---	28.794	0	0
7/18/2016	6:45 AM	63.1	93	0	---	0	0	---	28.794	0	0
7/18/2016	7:00 AM	63.3	94	0	SE	0	2	SE	28.797	0	0
7/18/2016	7:15 AM	63.9	95	0	SE	0	1	SE	28.796	0	0
7/18/2016	7:30 AM	65.1	96	0	---	0	0	---	28.793	0	0
7/18/2016	7:45 AM	66.4	94	0	SE	0	1	SE	28.792	0	0
7/18/2016	8:00 AM	67.6	94	0	SE	0	1	SE	28.793	0	0
7/18/2016	8:15 AM	70.1	87	1	S	0.25	4	SSW	28.793	0	0
7/18/2016	8:30 AM	72.4	84	1	SSW	0.25	4	S	28.791	0	0
7/18/2016	8:45 AM	73.3	83	2	SSW	0.5	7	S	28.785	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/18/2016	9:00 AM	74.1	82	2	SSW	0.5	6	SW	28.783	0	0
7/18/2016	9:15 AM	75.6	80	2	S	0.5	6	SSE	28.78	0	0
7/18/2016	9:30 AM	77.3	80	2	SW	0.5	5	S	28.78	0	0
7/18/2016	9:45 AM	78.3	79	1	W	0.25	4	WSW	28.788	0	0
7/18/2016	10:00 AM	79.2	81	2	SW	0.5	6	SSW	28.792	0	0
7/18/2016	10:15 AM	79.3	79	2	SSW	0.5	7	S	28.796	0	0
7/18/2016	10:30 AM	80.6	78	2	SSW	0.5	6	SSW	28.794	0	0
7/18/2016	10:45 AM	80.5	78	2	SSW	0.5	10	WSW	28.791	0	0
7/18/2016	11:00 AM	81.3	77	2	SSW	0.5	10	S	28.788	0	0
7/18/2016	11:15 AM	81.3	76	2	S	0.5	7	SSW	28.781	0	0
7/18/2016	11:30 AM	81.2	78	2	SW	0.5	8	SW	28.782	0	0
7/18/2016	11:45 AM	82.9	76	2	SSW	0.5	9	SSW	28.782	0	0
7/18/2016	12:00 PM	82.5	76	2	WNW	0.5	9	SSE	28.781	0	0
7/18/2016	12:15 PM	82	79	2	SW	0.5	6	E	28.773	0	0
7/18/2016	12:30 PM	83.6	76	2	SSW	0.5	7	S	28.771	0	0
7/18/2016	12:45 PM	84.1	74	2	ENE	0.5	10	S	28.762	0	0
7/18/2016	1:00 PM	81.7	75	2	S	0.5	8	SSW	28.753	0	0
7/18/2016	1:15 PM	80.3	79	1	SSE	0.25	4	ENE	28.758	0	0
7/18/2016	1:30 PM	78.9	81	1	E	0.25	3	ESE	28.759	0	0
7/18/2016	1:45 PM	77.4	85	1	ENE	0.25	2	E	28.765	0	0
7/18/2016	2:00 PM	69.3	87	4	SSW	1	14	SSE	28.799	0.04	3.06
7/18/2016	2:15 PM	66.4	93	1	SW	0.25	5	S	28.779	0.01	0.34
7/18/2016	2:30 PM	66.3	96	1	SE	0.25	3	SE	28.765	0.01	0.19
7/18/2016	2:45 PM	68.8	96	1	SSW	0.25	3	SE	28.755	0	0
7/18/2016	3:00 PM	70.6	95	2	SSW	0.5	5	SSW	28.748	0	0
7/18/2016	3:15 PM	72	93	1	SW	0.25	6	S	28.737	0	0
7/18/2016	3:30 PM	72.4	93	1	S	0.25	3	S	28.736	0	0
7/18/2016	3:45 PM	73.8	92	1	SSW	0.25	3	SSW	28.734	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/18/2016	4:00 PM	74.3	89	1	SSW	0.25	5	SSW	28.734	0	0
7/18/2016	4:15 PM	75.4	88	1	SSW	0.25	3	SSW	28.727	0	0
7/18/2016	4:30 PM	77	87	1	ENE	0.25	4	SSW	28.723	0	0
7/18/2016	4:45 PM	77.8	86	1	SSE	0.25	6	E	28.717	0	0
7/18/2016	5:00 PM	77.4	85	1	S	0.25	4	S	28.715	0	0
7/18/2016	5:15 PM	77.2	88	1	ESE	0.25	3	ESE	28.718	0	0
7/18/2016	5:30 PM	77.3	84	1	SSW	0.25	4	SSW	28.712	0	0
7/18/2016	5:45 PM	78.3	84	1	S	0.25	5	SSE	28.706	0	0
7/18/2016	6:00 PM	77.5	86	2	NNE	0.5	7	E	28.704	0	0
7/18/2016	6:15 PM	78.1	84	1	S	0.25	8	SSW	28.704	0	0
7/18/2016	6:30 PM	77.6	84	2	SSW	0.5	7	ESE	28.702	0	0
7/18/2016	6:45 PM	77	87	1	SW	0.25	6	SSE	28.699	0	0
7/18/2016	7:00 PM	76.9	88	1	SSW	0.25	5	SSW	28.698	0	0
7/18/2016	7:15 PM	76	90	1	SW	0.25	6	SSW	28.693	0	0
7/18/2016	7:30 PM	74.9	91	1	SW	0.25	7	SW	28.691	0	0
7/18/2016	7:45 PM	74.2	92	1	SSW	0.25	3	WSW	28.699	0	0
7/18/2016	8:00 PM	73.1	93	1	SSW	0.25	4	SSW	28.702	0	0
7/18/2016	8:15 PM	72.3	94	1	S	0.25	4	SSW	28.697	0	0
7/18/2016	8:30 PM	71.6	94	1	SSW	0.25	3	WSW	28.7	0	0
7/18/2016	8:45 PM	70.9	95	1	SSW	0.25	3	SW	28.705	0	0
7/18/2016	9:00 PM	70.5	95	0	SW	0	2	SW	28.716	0	0
7/18/2016	9:15 PM	70.1	96	1	SSW	0.25	2	SSW	28.729	0	0
7/18/2016	9:30 PM	69.9	97	0	SSW	0	2	SSW	28.731	0	0
7/18/2016	9:45 PM	69.5	96	0	SSW	0	2	SSW	28.731	0	0
7/18/2016	10:00 PM	69.3	97	0	SSW	0	1	SSW	28.735	0	0
7/18/2016	10:15 PM	69.2	98	0	SSW	0	2	SSW	28.737	0.02	0.68
7/18/2016	10:30 PM	68.8	97	0	SSW	0	1	SSW	28.744	0	0
7/18/2016	10:45 PM	68.7	98	0	SSW	0	2	SSW	28.745	0	0
7/18/2016	11:00 PM	68.3	97	0	SSW	0	1	SSW	28.744	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/18/2016	11:15 PM	67.6	97	0	SSW	0	2	SSW	28.746	0	0
7/18/2016	11:30 PM	67	97	0	---	0	0	---	28.752	0	0
7/18/2016	11:45 PM	66.5	97	0	SSW	0	1	SSW	28.751	0	0
7/19/2016	12:00 AM	66.3	97	1	SSW	0.25	2	SSW	28.747	0	0
7/19/2016	12:15 AM	65.6	97	0	SSW	0	1	SSW	28.749	0	0
7/19/2016	12:30 AM	64.9	97	0	SSW	0	1	SSW	28.753	0	0
7/19/2016	12:45 AM	64.4	97	0	SSW	0	1	SSW	28.758	0	0
7/19/2016	1:00 AM	64.1	98	0	SSW	0	2	SSW	28.76	0	0
7/19/2016	1:15 AM	64	98	0	SSW	0	2	SSW	28.757	0	0
7/19/2016	1:30 AM	63.5	97	0	SSW	0	1	SSW	28.755	0	0
7/19/2016	1:45 AM	63.2	97	0	---	0	0	---	28.758	0	0
7/19/2016	2:00 AM	63	97	0	S	0	4	ESE	28.758	0	0
7/19/2016	2:15 AM	63	96	0	W	0	4	ENE	28.76	0	0
7/19/2016	2:30 AM	62.9	97	0	S	0	2	SSW	28.762	0	0
7/19/2016	2:45 AM	62.5	97	0	S	0	2	S	28.764	0	0
7/19/2016	3:00 AM	62.2	97	0	S	0	2	S	28.771	0	0
7/19/2016	3:15 AM	62	98	0	S	0	1	S	28.773	0	0
7/19/2016	3:30 AM	61.7	97	0	S	0	1	S	28.77	0	0
7/19/2016	3:45 AM	61.4	98	0	S	0	1	S	28.77	0	0
7/19/2016	4:00 AM	61.2	97	0	S	0	1	S	28.769	0	0
7/19/2016	4:15 AM	60.7	97	0	S	0	1	S	28.769	0	0
7/19/2016	4:30 AM	60.1	97	0	---	0	0	---	28.769	0	0
7/19/2016	4:45 AM	59.5	98	0	S	0	1	S	28.776	0	0
7/19/2016	5:00 AM	59.3	97	0	S	0	1	S	28.782	0	0
7/19/2016	5:15 AM	58.5	97	0	---	0	0	---	28.784	0	0
7/19/2016	5:30 AM	57.8	97	0	S	0	1	S	28.786	0	0
7/19/2016	5:45 AM	57.3	97	0	---	0	0	---	28.792	0	0
7/19/2016	6:00 AM	56.9	97	0	---	0	0	---	28.797	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/19/2016	6:15 AM	56.8	98	0	S	0	1	S	28.801	0	0
7/19/2016	6:30 AM	56.5	98	0	S	0	1	S	28.805	0	0
7/19/2016	6:45 AM	56.7	98	0	S	0	1	S	28.809	0	0
7/19/2016	7:00 AM	57	98	0	S	0	1	S	28.806	0	0
7/19/2016	7:15 AM	57.6	99	0	---	0	0	---	28.811	0	0
7/19/2016	7:30 AM	58.8	99	0	S	0	1	S	28.812	0	0
7/19/2016	7:45 AM	60.4	99	0	S	0	2	S	28.816	0	0
7/19/2016	8:00 AM	61.6	99	1	S	0.25	4	NE	28.817	0	0
7/19/2016	8:15 AM	63.4	93	1	E	0.25	3	E	28.819	0	0
7/19/2016	8:30 AM	65	88	1	WSW	0.25	4	ESE	28.824	0	0
7/19/2016	8:45 AM	65.9	85	2	W	0.5	4	SW	28.825	0	0
7/19/2016	9:00 AM	66.4	82	1	W	0.25	5	ENE	28.825	0	0
7/19/2016	9:15 AM	67.4	78	2	SSW	0.5	6	ESE	28.826	0	0
7/19/2016	9:30 AM	68	76	2	WSW	0.5	6	ENE	28.822	0	0
7/19/2016	9:45 AM	68.9	73	2	WSW	0.5	8	ESE	28.827	0	0
7/19/2016	10:00 AM	69.1	74	2	SW	0.5	9	ESE	28.827	0	0
7/19/2016	10:15 AM	70	73	2	W	0.5	11	SW	28.833	0	0
7/19/2016	10:30 AM	70.6	76	2	WSW	0.5	9	SE	28.828	0	0
7/19/2016	10:45 AM	71.3	70	2	W	0.5	8	WSW	28.833	0	0
7/19/2016	11:00 AM	72.4	70	2	SSE	0.5	5	SSE	28.826	0	0
7/19/2016	11:15 AM	73.2	68	2	ESE	0.5	6	WSW	28.83	0	0
7/19/2016	11:30 AM	73.7	69	2	ENE	0.5	6	S	28.833	0	0
7/19/2016	11:45 AM	74.2	64	3	SSE	0.75	8	SW	28.836	0	0
7/19/2016	12:00 PM	74.5	63	2	SSE	0.5	10	E	28.832	0	0
7/19/2016	12:15 PM	74.5	66	3	SSE	0.75	9	WSW	28.834	0	0
7/19/2016	12:30 PM	74.9	63	2	SE	0.5	9	E	28.831	0	0
7/19/2016	12:45 PM	74.7	67	2	W	0.5	8	SE	28.828	0	0
7/19/2016	1:00 PM	74.6	65	3	W	0.75	9	W	28.826	0	0
7/19/2016	1:15 PM	74.7	67	3	SE	0.75	8	SSE	28.825	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/19/2016	1:30 PM	75.3	63	2	S	0.5	7	WSW	28.824	0	0
7/19/2016	1:45 PM	75.9	65	2	SSE	0.5	8	SE	28.825	0	0
7/19/2016	2:00 PM	75	63	2	SSW	0.5	7	E	28.825	0	0
7/19/2016	2:15 PM	75	66	2	SW	0.5	9	E	28.822	0	0
7/19/2016	2:30 PM	76.4	65	2	WSW	0.5	8	SE	28.817	0	0
7/19/2016	2:45 PM	76.2	62	2	SSW	0.5	8	SE	28.813	0	0
7/19/2016	3:00 PM	76	64	2	SW	0.5	7	ESE	28.805	0	0
7/19/2016	3:15 PM	76.1	63	2	W	0.5	6	W	28.804	0	0
7/19/2016	3:30 PM	76	62	2	SE	0.5	8	WSW	28.802	0	0
7/19/2016	3:45 PM	75.1	67	1	W	0.25	4	SSW	28.805	0	0
7/19/2016	4:00 PM	75	64	1	WNW	0.25	4	SW	28.801	0	0
7/19/2016	4:15 PM	74.8	70	1	N	0.25	6	ESE	28.801	0	0
7/19/2016	4:30 PM	75.5	64	1	ESE	0.25	3	SSE	28.797	0	0
7/19/2016	4:45 PM	74.6	68	1	SW	0.25	5	S	28.795	0	0
7/19/2016	5:00 PM	73.7	75	1	SSW	0.25	5	WSW	28.792	0	0
7/19/2016	5:15 PM	74.2	73	0	SW	0	2	SW	28.789	0	0
7/19/2016	5:30 PM	75.1	68	0	SSW	0	2	SSW	28.783	0	0
7/19/2016	5:45 PM	74.7	69	1	SSW	0.25	5	SSW	28.782	0	0
7/19/2016	6:00 PM	73.8	69	1	SSE	0.25	4	E	28.777	0	0
7/19/2016	6:15 PM	72.5	70	1	WNW	0.25	3	S	28.78	0	0
7/19/2016	6:30 PM	71.9	71	1	SSW	0.25	4	SSE	28.782	0	0
7/19/2016	6:45 PM	70.9	78	0	WSW	0	2	WSW	28.791	0	0
7/19/2016	7:00 PM	70.1	79	0	WSW	0	1	WSW	28.799	0	0
7/19/2016	7:15 PM	69.5	82	0	WSW	0	2	WSW	28.801	0	0
7/19/2016	7:30 PM	68.8	79	0	WSW	0	1	WSW	28.804	0	0
7/19/2016	7:45 PM	67.9	80	0	WSW	0	1	WSW	28.81	0	0
7/19/2016	8:00 PM	67.2	80	0	---	0	0	---	28.81	0	0
7/19/2016	8:15 PM	66	81	0	---	0	0	---	28.815	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/19/2016	8:30 PM	64.5	82	0	---	0	0	---	28.815	0	0
7/19/2016	8:45 PM	63.4	84	0	---	0	0	---	28.819	0	0
7/19/2016	9:00 PM	62.6	83	0	---	0	0	---	28.827	0	0
7/19/2016	9:15 PM	62.1	84	0	---	0	0	---	28.836	0	0
7/19/2016	9:30 PM	61.8	85	0	WSW	0	1	WSW	28.844	0	0
7/19/2016	9:45 PM	61.4	84	0	WSW	0	1	WSW	28.855	0	0
7/19/2016	10:00 PM	61.2	85	0	WSW	0	1	WSW	28.861	0	0
7/19/2016	10:15 PM	60.7	88	0	WSW	0	1	WSW	28.872	0	0
7/19/2016	10:30 PM	59.6	90	0	WSW	0	1	WSW	28.878	0	0
7/19/2016	10:45 PM	59.4	88	0	WSW	0	2	WSW	28.879	0	0
7/19/2016	11:00 PM	59.8	89	0	WSW	0	2	WSW	28.882	0	0
7/19/2016	11:15 PM	59.6	87	0	WSW	0	1	WSW	28.882	0	0
7/19/2016	11:30 PM	59.5	88	0	WSW	0	1	WSW	28.883	0	0
7/19/2016	11:45 PM	59.3	87	0	WSW	0	1	WSW	28.884	0	0
7/20/2016	12:00 AM	59	87	0	---	0	0	---	28.887	0	0
7/20/2016	12:15 AM	58.6	86	0	---	0	0	---	28.892	0	0
7/20/2016	12:30 AM	58	89	0	---	0	0	---	28.886	0	0
7/20/2016	12:45 AM	57.3	88	0	WSW	0	1	WSW	28.883	0	0
7/20/2016	1:00 AM	57.3	89	0	WSW	0	1	WSW	28.88	0	0
7/20/2016	1:15 AM	56.9	92	0	WSW	0	1	WSW	28.881	0	0
7/20/2016	1:30 AM	56.9	89	0	WSW	0	1	WSW	28.884	0	0
7/20/2016	1:45 AM	57.3	89	0	---	0	0	---	28.885	0	0
7/20/2016	2:00 AM	57.3	89	0	---	0	0	---	28.888	0	0
7/20/2016	2:15 AM	57.6	89	0	---	0	0	---	28.889	0	0
7/20/2016	2:30 AM	57.2	91	0	---	0	0	---	28.891	0	0
7/20/2016	2:45 AM	56.1	92	0	---	0	0	---	28.891	0	0
7/20/2016	3:00 AM	55.2	92	0	---	0	0	---	28.887	0	0
7/20/2016	3:15 AM	55.1	89	0	WSW	0	2	WSW	28.885	0	0
7/20/2016	3:30 AM	55.1	90	0	WSW	0	1	WSW	28.876	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/20/2016	3:45 AM	54.5	91	0	---	0	0	---	28.875	0	0
7/20/2016	4:00 AM	53.3	93	0	WSW	0	1	WSW	28.876	0	0
7/20/2016	4:15 AM	52.3	94	0	WSW	0	1	WSW	28.873	0	0
7/20/2016	4:30 AM	51.3	95	0	---	0	0	---	28.874	0	0
7/20/2016	4:45 AM	50.7	95	0	---	0	0	---	28.882	0	0
7/20/2016	5:00 AM	50.7	96	0	---	0	0	---	28.881	0	0
7/20/2016	5:15 AM	50.8	96	0	---	0	0	---	28.887	0	0
7/20/2016	5:30 AM	51.2	97	0	---	0	0	---	28.891	0	0
7/20/2016	5:45 AM	51.7	97	0	---	0	0	---	28.895	0	0
7/20/2016	6:00 AM	52.5	97	0	---	0	0	---	28.898	0	0
7/20/2016	6:15 AM	53.1	96	0	---	0	0	---	28.899	0	0
7/20/2016	6:30 AM	53.7	95	0	---	0	0	---	28.903	0	0
7/20/2016	6:45 AM	54.3	94	0	---	0	0	---	28.908	0	0
7/20/2016	7:00 AM	54.8	94	0	---	0	0	---	28.911	0	0
7/20/2016	7:15 AM	55.3	93	0	WSW	0	1	WSW	28.911	0	0
7/20/2016	7:30 AM	56.2	93	0	WSW	0	2	WSW	28.908	0	0
7/20/2016	7:45 AM	57.4	91	0	WSW	0	2	WSW	28.907	0	0
7/20/2016	8:00 AM	59.4	87	1	WNW	0.25	3	WNW	28.911	0	0
7/20/2016	8:15 AM	61.9	82	1	NW	0.25	4	NW	28.92	0	0
7/20/2016	8:30 AM	63.4	82	1	NNW	0.25	4	NW	28.926	0	0
7/20/2016	8:45 AM	64.4	80	1	WSW	0.25	3	WSW	28.929	0	0
7/20/2016	9:00 AM	65.3	76	1	NW	0.25	7	WNW	28.927	0	0
7/20/2016	9:15 AM	66.8	73	1	NW	0.25	4	WNW	28.92	0	0
7/20/2016	9:30 AM	67.4	73	1	WNW	0.25	4	W	28.922	0	0
7/20/2016	9:45 AM	68.5	71	1	WNW	0.25	4	NW	28.927	0	0
7/20/2016	10:00 AM	70.1	70	1	W	0.25	4	ENE	28.921	0	0
7/20/2016	10:15 AM	70.8	67	1	S	0.25	4	SSE	28.917	0	0
7/20/2016	10:30 AM	71	65	1	S	0.25	6	W	28.916	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/20/2016	10:45 AM	71.8	66	2	S	0.5	4	SSE	28.917	0	0
7/20/2016	11:00 AM	72.9	63	1	WSW	0.25	6	ESE	28.916	0	0
7/20/2016	11:15 AM	73.5	65	1	SW	0.25	4	WSW	28.914	0	0
7/20/2016	11:30 AM	73.2	63	2	S	0.5	5	SSE	28.916	0	0
7/20/2016	11:45 AM	74.1	60	1	SW	0.25	6	SSE	28.913	0	0
7/20/2016	12:00 PM	74.3	62	2	WSW	0.5	5	S	28.907	0	0
7/20/2016	12:15 PM	75	62	1	NNE	0.25	3	E	28.904	0	0
7/20/2016	12:30 PM	75.6	65	1	SSW	0.25	4	SSW	28.9	0	0
7/20/2016	12:45 PM	75.7	59	2	SSW	0.5	8	SW	28.904	0	0
7/20/2016	1:00 PM	76.3	63	2	WNW	0.5	6	SSW	28.902	0	0
7/20/2016	1:15 PM	77	59	1	W	0.25	6	W	28.902	0	0
7/20/2016	1:30 PM	77.2	60	2	NE	0.5	5	SSW	28.898	0	0
7/20/2016	1:45 PM	76	64	2	S	0.5	8	S	28.894	0	0
7/20/2016	2:00 PM	76.7	59	2	SW	0.5	9	SSW	28.885	0	0
7/20/2016	2:15 PM	77.4	60	2	WNW	0.5	6	SSW	28.883	0	0
7/20/2016	2:30 PM	78	59	1	E	0.25	4	NNW	28.878	0	0
7/20/2016	2:45 PM	77.6	57	2	W	0.5	4	ESE	28.874	0	0
7/20/2016	3:00 PM	77.6	58	1	NNE	0.25	4	S	28.868	0	0
7/20/2016	3:15 PM	78.1	57	1	SW	0.25	4	E	28.863	0	0
7/20/2016	3:30 PM	78.2	59	1	NE	0.25	3	NNE	28.861	0	0
7/20/2016	3:45 PM	78	58	1	ENE	0.25	5	SSW	28.858	0	0
7/20/2016	4:00 PM	77.3	57	2	S	0.5	5	SSW	28.851	0	0
7/20/2016	4:15 PM	77.5	58	1	SE	0.25	7	SSE	28.85	0	0
7/20/2016	4:30 PM	76.9	59	1	SSW	0.25	4	S	28.85	0	0
7/20/2016	4:45 PM	77.1	56	1	SSW	0.25	4	SSW	28.849	0	0
7/20/2016	5:00 PM	76.5	61	1	ENE	0.25	5	ENE	28.852	0	0
7/20/2016	5:15 PM	76.3	62	1	NE	0.25	4	NNE	28.851	0	0
7/20/2016	5:30 PM	75.5	65	0	NE	0	1	NE	28.848	0	0
7/20/2016	5:45 PM	74.5	69	0	NE	0	2	NE	28.843	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/20/2016	6:00 PM	73.8	70	0	NE	0	2	NE	28.843	0	0
7/20/2016	6:15 PM	73.3	66	0	NE	0	2	NE	28.841	0	0
7/20/2016	6:30 PM	72.7	71	0	NE	0	2	NE	28.842	0	0
7/20/2016	6:45 PM	71.9	72	0	NE	0	2	NE	28.846	0	0
7/20/2016	7:00 PM	70.8	71	0	NE	0	1	NE	28.847	0	0
7/20/2016	7:15 PM	69.9	75	1	NE	0.25	1	NE	28.847	0	0
7/20/2016	7:30 PM	69.2	76	1	NE	0.25	2	NE	28.847	0	0
7/20/2016	7:45 PM	68.3	76	1	NE	0.25	2	NE	28.857	0	0
7/20/2016	8:00 PM	67.1	77	0	NE	0	1	NE	28.856	0	0
7/20/2016	8:15 PM	65.8	79	0	NE	0	2	NE	28.858	0	0
7/20/2016	8:30 PM	64.4	80	0	NE	0	2	NE	28.86	0	0
7/20/2016	8:45 PM	63.2	82	0	---	0	0	---	28.866	0	0
7/20/2016	9:00 PM	61.9	85	0	---	0	0	---	28.865	0	0
7/20/2016	9:15 PM	60.9	86	0	---	0	0	---	28.865	0	0
7/20/2016	9:30 PM	59.6	86	0	---	0	0	---	28.867	0	0
7/20/2016	9:45 PM	59.2	87	0	---	0	0	---	28.867	0	0
7/20/2016	10:00 PM	58.4	89	0	---	0	0	---	28.871	0	0
7/20/2016	10:15 PM	57.3	90	0	---	0	0	---	28.876	0	0
7/20/2016	10:30 PM	56.8	91	0	---	0	0	---	28.875	0	0
7/20/2016	10:45 PM	56	92	0	---	0	0	---	28.878	0	0
7/20/2016	11:00 PM	54.9	92	0	---	0	0	---	28.88	0	0
7/20/2016	11:15 PM	54.5	94	0	---	0	0	---	28.88	0	0
7/20/2016	11:30 PM	54.1	94	0	---	0	0	---	28.876	0	0
7/20/2016	11:45 PM	53.7	94	0	---	0	0	---	28.877	0	0
7/21/2016	12:00 AM	53.5	95	0	---	0	0	---	28.876	0	0
7/21/2016	12:15 AM	53.3	95	0	---	0	0	---	28.873	0	0
7/21/2016	12:30 AM	52.7	94	0	---	0	0	---	28.877	0	0
7/21/2016	12:45 AM	53.7	95	0	---	0	0	---	28.874	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/21/2016	1:00 AM	52.9	95	0	---	0	0	---	28.874	0	0
7/21/2016	1:15 AM	52.4	95	0	---	0	0	---	28.872	0	0
7/21/2016	1:30 AM	52.2	96	0	---	0	0	---	28.87	0	0
7/21/2016	1:45 AM	52.7	96	0	---	0	0	---	28.864	0	0
7/21/2016	2:00 AM	52.1	95	0	---	0	0	---	28.861	0	0
7/21/2016	2:15 AM	52	96	0	---	0	0	---	28.857	0	0
7/21/2016	2:30 AM	51.3	95	0	---	0	0	---	28.856	0	0
7/21/2016	2:45 AM	51.8	97	0	---	0	0	---	28.859	0	0
7/21/2016	3:00 AM	53.3	96	0	---	0	0	---	28.86	0	0
7/21/2016	3:15 AM	52.2	95	0	---	0	0	---	28.859	0	0
7/21/2016	3:30 AM	51.8	96	0	---	0	0	---	28.852	0	0
7/21/2016	3:45 AM	51.2	96	0	---	0	0	---	28.852	0	0
7/21/2016	4:00 AM	51.1	96	0	---	0	0	---	28.846	0	0
7/21/2016	4:15 AM	51.2	97	0	---	0	0	---	28.844	0	0
7/21/2016	4:30 AM	53.2	98	0	---	0	0	---	28.851	0	0
7/21/2016	4:45 AM	54.1	98	0	---	0	0	---	28.856	0	0
7/21/2016	5:00 AM	52.8	94	0	---	0	0	---	28.859	0	0
7/21/2016	5:15 AM	52.1	96	0	---	0	0	---	28.862	0	0
7/21/2016	5:30 AM	51.7	96	0	---	0	0	---	28.865	0	0
7/21/2016	5:45 AM	51.3	96	0	---	0	0	---	28.87	0	0
7/21/2016	6:00 AM	51.1	96	0	E	0	1	E	28.876	0.01	0
7/21/2016	6:15 AM	50.9	97	0	E	0	1	E	28.874	0	0
7/21/2016	6:30 AM	51.6	97	0	E	0	1	E	28.871	0	0
7/21/2016	6:45 AM	52.4	98	0	E	0	1	E	28.872	0	0
7/21/2016	7:00 AM	53.3	98	0	---	0	0	---	28.872	0	0
7/21/2016	7:15 AM	54.1	98	0	E	0	1	E	28.868	0	0
7/21/2016	7:30 AM	56.2	98	0	E	0	2	E	28.87	0	0
7/21/2016	7:45 AM	58.7	99	0	E	0	1	E	28.877	0	0
7/21/2016	8:00 AM	61.1	99	0	E	0	1	E	28.872	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/21/2016	8:15 AM	64.4	91	0	E	0	1	E	28.871	0	0
7/21/2016	8:30 AM	66.6	87	1	SSW	0.25	4	SSW	28.866	0	0
7/21/2016	8:45 AM	68	83	1	SSW	0.25	4	SSW	28.862	0	0
7/21/2016	9:00 AM	69.1	82	2	SSW	0.5	5	SSW	28.863	0	0
7/21/2016	9:15 AM	70.3	78	2	SSW	0.5	5	SW	28.863	0	0
7/21/2016	9:30 AM	71.3	75	2	SSW	0.5	7	SSW	28.862	0	0
7/21/2016	9:45 AM	72.7	76	1	SSW	0.25	5	SSW	28.857	0	0
7/21/2016	10:00 AM	73.8	74	1	SSE	0.25	6	SSW	28.852	0	0
7/21/2016	10:15 AM	75	75	1	SSW	0.25	4	SSE	28.85	0	0
7/21/2016	10:30 AM	76.1	74	1	SW	0.25	4	ENE	28.848	0	0
7/21/2016	10:45 AM	76.6	73	2	SW	0.5	6	SSW	28.852	0	0
7/21/2016	11:00 AM	77.7	70	2	SSW	0.5	6	SSW	28.839	0	0
7/21/2016	11:15 AM	78	66	3	SSW	0.75	7	SW	28.847	0	0
7/21/2016	11:30 AM	79	66	2	SW	0.5	6	SSW	28.844	0	0
7/21/2016	11:45 AM	79.7	63	2	SSW	0.5	8	SSW	28.84	0	0
7/21/2016	12:00 PM	80.2	62	2	NNW	0.5	6	ESE	28.844	0	0
7/21/2016	12:15 PM	80.6	61	2	SW	0.5	9	SSW	28.835	0	0
7/21/2016	12:30 PM	81.6	61	2	NNW	0.5	5	N	28.831	0	0
7/21/2016	12:45 PM	80.9	61	2	S	0.5	12	S	28.83	0	0
7/21/2016	1:00 PM	80.3	61	4	SW	1	10	SSW	28.825	0	0
7/21/2016	1:15 PM	81	58	3	SSW	0.75	10	SSW	28.82	0	0
7/21/2016	1:30 PM	81.8	60	2	S	0.5	10	SSW	28.815	0	0
7/21/2016	1:45 PM	81.7	60	3	S	0.75	8	SW	28.811	0	0
7/21/2016	2:00 PM	81.7	59	2	SSW	0.5	8	NNE	28.807	0	0
7/21/2016	2:15 PM	82	63	2	SSW	0.5	8	SSW	28.805	0	0
7/21/2016	2:30 PM	82.1	60	3	SSW	0.75	9	SW	28.8	0	0
7/21/2016	2:45 PM	82.2	63	3	SSW	0.75	8	SW	28.799	0	0
7/21/2016	3:00 PM	82.4	59	2	S	0.5	6	ESE	28.793	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/21/2016	3:15 PM	82.3	58	3	SSW	0.75	9	SSE	28.784	0	0
7/21/2016	3:30 PM	82.5	62	3	SSW	0.75	8	S	28.789	0	0
7/21/2016	3:45 PM	83.1	56	2	SSE	0.5	9	E	28.788	0	0
7/21/2016	4:00 PM	82.8	57	2	W	0.5	8	SSW	28.781	0	0
7/21/2016	4:15 PM	82	57	3	SSW	0.75	9	S	28.777	0	0
7/21/2016	4:30 PM	81.9	57	2	S	0.5	6	SSE	28.779	0	0
7/21/2016	4:45 PM	81.9	60	2	SW	0.5	8	SW	28.772	0	0
7/21/2016	5:00 PM	81.9	57	2	SW	0.5	6	SW	28.77	0	0
7/21/2016	5:15 PM	81.6	57	2	SW	0.5	7	SSW	28.771	0	0
7/21/2016	5:30 PM	81.6	56	2	S	0.5	6	SSW	28.762	0	0
7/21/2016	5:45 PM	81	56	2	SSW	0.5	7	S	28.753	0	0
7/21/2016	6:00 PM	80.3	57	1	SSW	0.25	9	SSE	28.747	0	0
7/21/2016	6:15 PM	79.5	57	1	SW	0.25	7	SSW	28.742	0	0
7/21/2016	6:30 PM	78.7	59	1	SW	0.25	4	S	28.74	0	0
7/21/2016	6:45 PM	77.7	64	1	SW	0.25	3	SW	28.745	0	0
7/21/2016	7:00 PM	76.2	67	0	SW	0	2	SW	28.745	0	0
7/21/2016	7:15 PM	74.4	69	0	SW	0	1	SW	28.744	0	0
7/21/2016	7:30 PM	72.6	72	0	SW	0	1	SW	28.749	0	0
7/21/2016	7:45 PM	71.2	72	1	SW	0.25	2	SW	28.752	0	0
7/21/2016	8:00 PM	69.8	74	0	---	0	0	---	28.753	0	0
7/21/2016	8:15 PM	68.8	76	0	---	0	0	---	28.758	0	0
7/21/2016	8:30 PM	67.9	77	0	SW	0	1	SW	28.755	0	0
7/21/2016	8:45 PM	67.3	79	0	SW	0	1	SW	28.757	0	0
7/21/2016	9:00 PM	66.8	80	0	SW	0	1	SW	28.749	0	0
7/21/2016	9:15 PM	66.5	82	0	SW	0	1	SW	28.753	0	0
7/21/2016	9:30 PM	66.3	82	0	SW	0	1	SW	28.756	0	0
7/21/2016	9:45 PM	66	82	0	---	0	0	---	28.759	0	0
7/21/2016	10:00 PM	65.7	83	0	---	0	0	---	28.759	0	0
7/21/2016	10:15 PM	65.4	82	0	---	0	0	---	28.759	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/21/2016	10:30 PM	65.1	84	0	---	0	0	---	28.765	0	0
7/21/2016	10:45 PM	65.3	81	0	---	0	0	---	28.762	0	0
7/21/2016	11:00 PM	65	82	0	---	0	0	---	28.757	0	0
7/21/2016	11:15 PM	64.1	84	0	---	0	0	---	28.751	0	0
7/21/2016	11:30 PM	64.2	86	0	SW	0	3	SW	28.749	0	0
7/21/2016	11:45 PM	65.1	86	0	SW	0	3	SW	28.75	0	0
7/22/2016	12:00 AM	66	85	1	SSW	0.25	2	SW	28.74	0	0
7/22/2016	12:15 AM	66.2	85	0	SSW	0	3	SSW	28.738	0	0
7/22/2016	12:30 AM	65.9	86	0	SSW	0	2	SSW	28.735	0	0
7/22/2016	12:45 AM	65.6	87	1	SSW	0.25	2	SSW	28.729	0	0
7/22/2016	1:00 AM	64.9	88	0	---	0	0	---	28.72	0	0
7/22/2016	1:15 AM	64.2	89	0	SSW	0	2	SSW	28.726	0	0
7/22/2016	1:30 AM	63	91	0	SSW	0	2	SSW	28.725	0	0
7/22/2016	1:45 AM	62.5	92	0	SSW	0	1	SSW	28.723	0	0
7/22/2016	2:00 AM	61.8	93	0	SSW	0	2	SSW	28.721	0	0
7/22/2016	2:15 AM	62	93	0	SSW	0	2	SSW	28.72	0	0
7/22/2016	2:30 AM	61.8	93	0	SSW	0	2	SSW	28.722	0	0
7/22/2016	2:45 AM	61.3	94	0	SSW	0	2	SSW	28.716	0	0
7/22/2016	3:00 AM	61.6	94	0	SSW	0	1	SSW	28.716	0	0
7/22/2016	3:15 AM	61.9	94	0	---	0	0	---	28.717	0	0
7/22/2016	3:30 AM	61.8	94	0	---	0	0	---	28.712	0	0
7/22/2016	3:45 AM	61.9	93	0	---	0	0	---	28.699	0	0
7/22/2016	4:00 AM	61.9	93	0	---	0	0	---	28.696	0	0
7/22/2016	4:15 AM	61.7	93	0	---	0	0	---	28.692	0	0
7/22/2016	4:30 AM	61.4	94	0	---	0	0	---	28.69	0	0
7/22/2016	4:45 AM	61.4	94	0	---	0	0	---	28.689	0	0
7/22/2016	5:00 AM	61.4	94	0	---	0	0	---	28.689	0	0
7/22/2016	5:15 AM	61.5	94	0	---	0	0	---	28.69	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/22/2016	5:30 AM	61.7	94	0	---	0	0	---	28.687	0	0
7/22/2016	5:45 AM	62	94	0	---	0	0	---	28.69	0	0
7/22/2016	6:00 AM	62.1	94	0	---	0	0	---	28.687	0	0
7/22/2016	6:15 AM	61.9	94	0	---	0	0	---	28.688	0	0
7/22/2016	6:30 AM	62	95	0	---	0	0	---	28.679	0	0
7/22/2016	6:45 AM	62.6	94	0	---	0	0	---	28.677	0	0
7/22/2016	7:00 AM	63.7	95	0	SSW	0	2	SSW	28.677	0	0
7/22/2016	7:15 AM	64.7	94	0	SSW	0	1	SSW	28.675	0	0
7/22/2016	7:30 AM	66	94	0	SSW	0	1	SSW	28.671	0	0
7/22/2016	7:45 AM	67.2	92	0	SSW	0	2	SSW	28.67	0	0
7/22/2016	8:00 AM	68.3	90	0	SSW	0	3	SSW	28.668	0	0
7/22/2016	8:15 AM	68.9	88	1	SSW	0.25	2	SSW	28.678	0	0
7/22/2016	8:30 AM	70.3	85	1	SSW	0.25	3	SSW	28.676	0	0
7/22/2016	8:45 AM	72	84	2	SSW	0.5	5	SSE	28.672	0	0
7/22/2016	9:00 AM	73.5	84	1	SSW	0.25	3	S	28.672	0	0
7/22/2016	9:15 AM	75.3	82	1	W	0.25	7	ESE	28.674	0	0
7/22/2016	9:30 AM	75.5	81	2	SE	0.5	5	SSE	28.669	0	0
7/22/2016	9:45 AM	76.7	81	2	SSW	0.5	8	SSW	28.662	0	0
7/22/2016	10:00 AM	78.5	78	2	S	0.5	8	SSW	28.656	0	0
7/22/2016	10:15 AM	78.9	77	2	NE	0.5	9	SSW	28.653	0	0
7/22/2016	10:30 AM	79	78	2	SW	0.5	9	S	28.651	0	0
7/22/2016	10:45 AM	80.3	79	2	W	0.5	8	SW	28.651	0	0
7/22/2016	11:00 AM	80.2	76	2	SSW	0.5	6	E	28.645	0	0
7/22/2016	11:15 AM	80.6	78	2	S	0.5	6	SSE	28.644	0	0
7/22/2016	11:30 AM	80.3	76	3	SSW	0.75	8	SSE	28.643	0	0
7/22/2016	11:45 AM	81.4	77	2	S	0.5	8	ENE	28.636	0	0
7/22/2016	12:00 PM	82	75	3	S	0.75	13	W	28.631	0	0
7/22/2016	12:15 PM	82.2	76	3	S	0.75	8	S	28.623	0	0
7/22/2016	12:30 PM	82.2	76	3	SSW	0.75	9	SSW	28.626	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/22/2016	12:45 PM	82	75	2	SSW	0.5	9	SSE	28.628	0	0
7/22/2016	1:00 PM	83.6	76	2	SSW	0.5	7	SSW	28.624	0	0
7/22/2016	1:15 PM	83.8	75	3	ENE	0.75	9	S	28.619	0	0
7/22/2016	1:30 PM	84.9	69	2	SSW	0.5	7	WSW	28.619	0	0
7/22/2016	1:45 PM	85.2	73	3	SW	0.75	11	SW	28.614	0	0
7/22/2016	2:00 PM	84.8	72	3	NNE	0.75	10	ENE	28.608	0	0
7/22/2016	2:15 PM	85.5	69	3	W	0.75	9	SSW	28.607	0	0
7/22/2016	2:30 PM	85.6	67	3	NW	0.75	11	SSE	28.606	0	0
7/22/2016	2:45 PM	85.9	65	3	S	0.75	10	S	28.594	0	0
7/22/2016	3:00 PM	86.4	66	3	SW	0.75	9	SSW	28.592	0	0
7/22/2016	3:15 PM	86.5	67	3	N	0.75	11	E	28.59	0	0
7/22/2016	3:30 PM	86.5	64	3	NNE	0.75	9	WSW	28.585	0	0
7/22/2016	3:45 PM	87	63	2	SW	0.5	9	WSW	28.58	0	0
7/22/2016	4:00 PM	87	66	2	WSW	0.5	8	ENE	28.575	0	0
7/22/2016	4:15 PM	86.8	64	3	ESE	0.75	8	SSE	28.568	0	0
7/22/2016	4:30 PM	87.1	63	2	N	0.5	11	NE	28.562	0	0
7/22/2016	4:45 PM	87	64	2	SSW	0.5	7	WSW	28.561	0	0
7/22/2016	5:00 PM	86.5	66	2	WSW	0.5	8	ESE	28.554	0	0
7/22/2016	5:15 PM	85.9	64	2	SW	0.5	8	E	28.55	0	0
7/22/2016	5:30 PM	85.7	65	2	S	0.5	6	E	28.548	0	0
7/22/2016	5:45 PM	85.2	66	2	ESE	0.5	6	SSE	28.545	0	0
7/22/2016	6:00 PM	84.3	67	2	SSW	0.5	5	SSE	28.542	0	0
7/22/2016	6:15 PM	83.7	69	2	SSW	0.5	9	SSW	28.537	0	0
7/22/2016	6:30 PM	83	69	2	S	0.5	9	E	28.536	0	0
7/22/2016	6:45 PM	82.2	71	1	S	0.25	8	SW	28.537	0	0
7/22/2016	7:00 PM	81.9	71	1	S	0.25	7	E	28.536	0	0
7/22/2016	7:15 PM	81.2	74	1	S	0.25	4	S	28.535	0	0
7/22/2016	7:30 PM	80.1	73	0	E	0	5	SE	28.541	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/22/2016	7:45 PM	79.8	77	0	NNW	0	3	NNW	28.549	0	0
7/22/2016	8:00 PM	74.6	86	2	SSE	0.5	13	SSE	28.556	0.12	1.95
7/22/2016	8:15 PM	71.3	93	2	SW	0.5	12	SW	28.54	0.16	5.1
7/22/2016	8:30 PM	70.6	95	1	NE	0.25	6	E	28.543	0	0
7/22/2016	8:45 PM	70.1	96	0	NE	0	3	NE	28.539	0	0
7/22/2016	9:00 PM	69.7	97	0	NE	0	2	NE	28.543	0	0
7/22/2016	9:15 PM	69.4	97	0	NE	0	2	NE	28.545	0	0
7/22/2016	9:30 PM	69.1	97	1	NE	0.25	2	NE	28.553	0	0
7/22/2016	9:45 PM	69	97	0	NE	0	1	NE	28.557	0	0
7/22/2016	10:00 PM	68.6	97	1	NE	0.25	1	NE	28.559	0	0
7/22/2016	10:15 PM	68.3	98	1	NE	0.25	2	NE	28.56	0	0
7/22/2016	10:30 PM	68.3	98	1	NE	0.25	2	NE	28.562	0	0
7/22/2016	10:45 PM	67.9	98	1	NE	0.25	1	NE	28.569	0	0
7/22/2016	11:00 PM	67.7	98	1	NE	0.25	2	NE	28.57	0	0
7/22/2016	11:15 PM	67.4	98	0	NE	0	2	NE	28.572	0	0
7/22/2016	11:30 PM	67.2	98	0	NE	0	1	NE	28.572	0	0
7/22/2016	11:45 PM	67.1	98	0	NE	0	1	NE	28.58	0	0
7/23/2016	12:00 AM	66.9	98	0	NE	0	1	NE	28.584	0	0
7/23/2016	12:15 AM	66.1	97	0	NE	0	1	NE	28.588	0	0
7/23/2016	12:30 AM	65	97	0	NE	0	2	NE	28.59	0	0
7/23/2016	12:45 AM	64.8	98	0	NE	0	2	NE	28.591	0	0
7/23/2016	1:00 AM	64.8	98	0	NE	0	1	NE	28.59	0	0
7/23/2016	1:15 AM	65	98	0	NE	0	1	NE	28.591	0	0
7/23/2016	1:30 AM	64.3	97	0	NE	0	1	NE	28.59	0	0
7/23/2016	1:45 AM	63.7	98	0	NE	0	1	NE	28.585	0	0
7/23/2016	2:00 AM	63.4	98	0	NE	0	1	NE	28.585	0	0
7/23/2016	2:15 AM	63.3	98	0	---	0	0	---	28.59	0	0
7/23/2016	2:30 AM	63.8	99	0	NE	0	1	NE	28.59	0	0
7/23/2016	2:45 AM	63.8	98	1	NE	0.25	1	NE	28.589	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/23/2016	3:00 AM	63.9	98	1	NE	0.25	1	NE	28.596	0	0
7/23/2016	3:15 AM	63.9	98	1	NE	0.25	1	NE	28.596	0	0
7/23/2016	3:30 AM	63.8	99	1	NE	0.25	2	NE	28.595	0	0
7/23/2016	3:45 AM	63.9	99	1	NE	0.25	1	NE	28.588	0	0
7/23/2016	4:00 AM	63.9	99	1	NE	0.25	2	NE	28.593	0	0
7/23/2016	4:15 AM	64	99	1	NE	0.25	2	NE	28.596	0	0
7/23/2016	4:30 AM	64.2	99	0	NE	0	1	NE	28.598	0	0
7/23/2016	4:45 AM	64.2	99	0	NE	0	2	NE	28.601	0	0
7/23/2016	5:00 AM	64.3	99	0	NE	0	2	NE	28.595	0	0
7/23/2016	5:15 AM	64.4	99	0	NE	0	1	NE	28.6	0	0
7/23/2016	5:30 AM	64.2	99	0	NE	0	1	NE	28.604	0	0
7/23/2016	5:45 AM	64.1	99	0	NE	0	1	NE	28.603	0	0
7/23/2016	6:00 AM	64.1	99	0	NE	0	1	NE	28.611	0	0
7/23/2016	6:15 AM	64.2	99	0	NE	0	1	NE	28.612	0	0
7/23/2016	6:30 AM	64.3	99	0	NE	0	1	NE	28.611	0	0
7/23/2016	6:45 AM	64.4	99	0	NE	0	1	NE	28.611	0	0
7/23/2016	7:00 AM	64.4	99	0	NE	0	1	NE	28.611	0	0
7/23/2016	7:15 AM	65.1	99	0	NE	0	1	NE	28.61	0	0
7/23/2016	7:30 AM	65.9	99	0	NE	0	2	NE	28.611	0	0
7/23/2016	7:45 AM	67	100	1	NE	0.25	2	NE	28.611	0	0
7/23/2016	8:00 AM	68.3	100	1	NE	0.25	3	NE	28.613	0	0
7/23/2016	8:15 AM	69.8	98	1	ESE	0.25	3	ENE	28.609	0	0
7/23/2016	8:30 AM	71.4	95	1	NE	0.25	3	ESE	28.608	0	0
7/23/2016	8:45 AM	72.2	93	1	NW	0.25	3	ENE	28.607	0	0
7/23/2016	9:00 AM	73.7	91	1	ENE	0.25	6	SSE	28.611	0	0
7/23/2016	9:15 AM	75.1	88	1	SW	0.25	5	SSE	28.608	0	0
7/23/2016	9:30 AM	76.2	83	1	S	0.25	4	S	28.605	0	0
7/23/2016	9:45 AM	77.1	83	1	SSW	0.25	7	SSW	28.601	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/23/2016	10:00 AM	77.9	78	1	E	0.25	3	ESE	28.602	0	0
7/23/2016	10:15 AM	78.7	77	2	ENE	0.5	5	SE	28.603	0	0
7/23/2016	10:30 AM	79.9	74	1	W	0.25	7	W	28.606	0.01	0
7/23/2016	10:45 AM	80.8	72	1	WSW	0.25	5	SE	28.608	0	0
7/23/2016	11:00 AM	81.7	72	2	SSW	0.5	4	SSE	28.602	0	0
7/23/2016	11:15 AM	82.2	70	2	NW	0.5	8	WNW	28.602	0	0
7/23/2016	11:30 AM	83.2	66	1	WSW	0.25	4	SE	28.603	0	0
7/23/2016	11:45 AM	83.7	67	2	SSW	0.5	8	ESE	28.601	0	0
7/23/2016	12:00 PM	84.1	64	2	NNE	0.5	9	NE	28.6	0	0
7/23/2016	12:15 PM	84.8	64	2	SW	0.5	6	SW	28.598	0	0
7/23/2016	12:30 PM	84.8	66	2	SSW	0.5	6	S	28.598	0	0
7/23/2016	12:45 PM	84.9	64	2	SW	0.5	8	SE	28.591	0	0
7/23/2016	1:00 PM	84.7	64	2	NE	0.5	10	E	28.593	0	0
7/23/2016	1:15 PM	84.6	66	2	SSW	0.5	11	SW	28.587	0	0
7/23/2016	1:30 PM	85	65	3	SSE	0.75	12	E	28.584	0	0
7/23/2016	1:45 PM	85.9	63	2	S	0.5	9	SSW	28.578	0	0
7/23/2016	2:00 PM	86.1	65	3	S	0.75	8	S	28.579	0	0
7/23/2016	2:15 PM	86.5	63	2	WSW	0.5	11	E	28.579	0	0
7/23/2016	2:30 PM	87.1	63	2	N	0.5	4	S	28.578	0	0
7/23/2016	2:45 PM	86.9	64	2	SW	0.5	8	S	28.574	0	0
7/23/2016	3:00 PM	86.1	65	2	SW	0.5	11	SSW	28.577	0	0
7/23/2016	3:15 PM	86.7	59	2	NW	0.5	9	SSW	28.577	0	0
7/23/2016	3:30 PM	86.3	64	2	SSW	0.5	8	ESE	28.571	0	0
7/23/2016	3:45 PM	86.3	60	2	S	0.5	9	E	28.569	0	0
7/23/2016	4:00 PM	85.7	62	2	SSW	0.5	5	SSW	28.567	0	0
7/23/2016	4:15 PM	86.4	61	1	WSW	0.25	8	ENE	28.563	0	0
7/23/2016	4:30 PM	84.4	62	1	SSE	0.25	6	W	28.555	0	0
7/23/2016	4:45 PM	86	62	2	ESE	0.5	5	SSE	28.548	0	0
7/23/2016	5:00 PM	86.3	57	2	SSW	0.5	5	SSE	28.545	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/23/2016	5:15 PM	85.7	59	1	SW	0.25	5	NNE	28.539	0	0
7/23/2016	5:30 PM	85.2	61	1	SW	0.25	7	ESE	28.536	0	0
7/23/2016	5:45 PM	84.8	63	1	ENE	0.25	6	E	28.54	0	0
7/23/2016	6:00 PM	84.3	65	1	SSW	0.25	4	S	28.54	0	0
7/23/2016	6:15 PM	83.2	64	1	SSW	0.25	3	ESE	28.542	0	0
7/23/2016	6:30 PM	82	66	1	SSW	0.25	3	WNW	28.544	0	0
7/23/2016	6:45 PM	81.3	63	1	SW	0.25	6	SSE	28.55	0	0
7/23/2016	7:00 PM	80.2	67	1	SSW	0.25	3	NNW	28.557	0	0
7/23/2016	7:15 PM	79.9	64	2	NE	0.5	6	E	28.566	0	0
7/23/2016	7:30 PM	79.6	61	1	NNW	0.25	9	ESE	28.573	0	0
7/23/2016	7:45 PM	78.6	62	1	SSW	0.25	4	S	28.577	0	0
7/23/2016	8:00 PM	77.6	64	1	SSW	0.25	2	S	28.586	0	0
7/23/2016	8:15 PM	76.1	70	0	SSW	0	2	SSW	28.586	0	0
7/23/2016	8:30 PM	74.6	67	0	SSW	0	2	SSW	28.591	0	0
7/23/2016	8:45 PM	73.5	68	1	SSW	0.25	2	SSW	28.597	0	0
7/23/2016	9:00 PM	72.2	68	0	SSW	0	2	SSW	28.601	0	0
7/23/2016	9:15 PM	71.9	72	0	SSW	0	2	SSW	28.614	0	0
7/23/2016	9:30 PM	71.6	70	0	SSW	0	2	SSW	28.62	0	0
7/23/2016	9:45 PM	71.6	70	0	SSW	0	2	SSW	28.621	0	0
7/23/2016	10:00 PM	70.8	71	0	SSW	0	1	SSW	28.625	0	0
7/23/2016	10:15 PM	69.9	72	0	SSW	0	2	SSW	28.631	0	0
7/23/2016	10:30 PM	69	75	0	SSW	0	2	SSW	28.631	0	0
7/23/2016	10:45 PM	68.4	76	0	SSW	0	2	SSW	28.631	0	0
7/23/2016	11:00 PM	68.2	77	0	SSW	0	1	SSW	28.637	0	0
7/23/2016	11:15 PM	66.7	82	0	---	0	0	---	28.642	0	0
7/23/2016	11:30 PM	65.1	83	0	---	0	0	---	28.646	0	0
7/23/2016	11:45 PM	64.2	84	0	SSW	0	2	SSW	28.651	0	0
7/24/2016	12:00 AM	64.3	85	0	SSW	0	2	SSW	28.653	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/24/2016	12:15 AM	62.3	87	0	SSW	0	1	SSW	28.657	0	0
7/24/2016	12:30 AM	62.4	88	0	SSW	0	2	SSW	28.661	0	0
7/24/2016	12:45 AM	61.6	90	0	SSW	0	2	SSW	28.664	0	0
7/24/2016	1:00 AM	60.9	91	0	SSW	0	1	SSW	28.669	0	0
7/24/2016	1:15 AM	60.1	92	0	SSW	0	1	SSW	28.665	0	0
7/24/2016	1:30 AM	59.2	93	0	---	0	0	---	28.669	0	0
7/24/2016	1:45 AM	58.9	94	0	SSW	0	1	SSW	28.671	0	0
7/24/2016	2:00 AM	59.9	95	0	SSW	0	1	SSW	28.673	0	0
7/24/2016	2:15 AM	60.2	94	0	SSW	0	1	SSW	28.673	0	0
7/24/2016	2:30 AM	60	94	0	---	0	0	---	28.677	0	0
7/24/2016	2:45 AM	60.6	91	0	SSW	0	2	SSW	28.678	0	0
7/24/2016	3:00 AM	61.6	90	0	SSW	0	1	SSW	28.679	0	0
7/24/2016	3:15 AM	62.1	88	1	SSW	0.25	2	SSW	28.679	0	0
7/24/2016	3:30 AM	62.6	88	1	SSW	0.25	2	SSW	28.675	0	0
7/24/2016	3:45 AM	62.6	88	0	SSW	0	2	SSW	28.675	0	0
7/24/2016	4:00 AM	62.7	88	1	SSW	0.25	2	SSW	28.676	0	0
7/24/2016	4:15 AM	62.7	89	0	SSW	0	2	SSW	28.672	0	0
7/24/2016	4:30 AM	61.6	91	0	---	0	0	---	28.669	0	0
7/24/2016	4:45 AM	62	90	1	SSW	0.25	2	SSW	28.668	0	0
7/24/2016	5:00 AM	63.1	88	1	SSW	0.25	2	SSW	28.672	0	0
7/24/2016	5:15 AM	63	87	0	SSW	0	2	SSW	28.68	0	0
7/24/2016	5:30 AM	61.8	89	0	SSW	0	1	SSW	28.684	0	0
7/24/2016	5:45 AM	61.4	91	0	SSW	0	1	SSW	28.69	0	0
7/24/2016	6:00 AM	61.7	90	0	SSW	0	1	SSW	28.692	0	0
7/24/2016	6:15 AM	60	92	0	---	0	0	---	28.696	0	0
7/24/2016	6:30 AM	60.4	92	0	---	0	0	---	28.696	0	0
7/24/2016	6:45 AM	60.7	92	0	---	0	0	---	28.701	0	0
7/24/2016	7:00 AM	60	94	0	---	0	0	---	28.703	0	0
7/24/2016	7:15 AM	61	94	0	---	0	0	---	28.709	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/24/2016	7:30 AM	61.5	95	0	---	0	0	---	28.715	0	0
7/24/2016	7:45 AM	63	94	0	---	0	0	---	28.714	0	0
7/24/2016	8:00 AM	65.3	92	0	---	0	0	---	28.712	0	0
7/24/2016	8:15 AM	68.1	91	0	---	0	0	---	28.712	0	0
7/24/2016	8:30 AM	70.7	85	0	---	0	0	---	28.71	0	0
7/24/2016	8:45 AM	72.2	85	0	---	0	0	---	28.71	0	0
7/24/2016	9:00 AM	73.6	81	0	SSW	0	1	SSW	28.712	0	0
7/24/2016	9:15 AM	75.7	79	1	SSW	0.25	2	SSW	28.71	0	0
7/24/2016	9:30 AM	76.2	75	2	SSW	0.5	5	S	28.708	0	0
7/24/2016	9:45 AM	77.1	76	1	WNW	0.25	3	ENE	28.708	0	0
7/24/2016	10:00 AM	78.1	75	1	NNE	0.25	4	NNE	28.704	0	0
7/24/2016	10:15 AM	79.6	72	1	W	0.25	3	NW	28.699	0	0
7/24/2016	10:30 AM	81.3	68	1	WSW	0.25	3	SW	28.698	0	0
7/24/2016	10:45 AM	82.4	68	1	SSW	0.25	4	SSW	28.697	0.01	0
7/24/2016	11:00 AM	83.2	67	1	SW	0.25	4	W	28.693	0	0
7/24/2016	11:15 AM	83.7	67	2	N	0.5	5	SSW	28.688	0	0
7/24/2016	11:30 AM	84.4	67	2	SSW	0.5	6	W	28.691	0	0
7/24/2016	11:45 AM	83.9	67	3	SSW	0.75	7	SSW	28.696	0	0
7/24/2016	12:00 PM	84.8	60	2	S	0.5	6	SSW	28.693	0	0
7/24/2016	12:15 PM	84.8	63	1	W	0.25	6	SSW	28.695	0	0
7/24/2016	12:30 PM	85.6	60	2	NW	0.5	4	NNE	28.694	0	0
7/24/2016	12:45 PM	84.3	63	1	NNE	0.25	5	SSE	28.695	0	0
7/24/2016	1:00 PM	84.1	68	1	NNE	0.25	4	S	28.699	0	0
7/24/2016	1:15 PM	83.6	63	1	SSW	0.25	5	SSW	28.696	0	0
7/24/2016	1:30 PM	84.2	65	1	S	0.25	4	SSE	28.689	0	0
7/24/2016	1:45 PM	84.9	64	1	SSW	0.25	5	S	28.685	0	0
7/24/2016	2:00 PM	85.4	62	1	SSE	0.25	4	SSE	28.682	0	0
7/24/2016	2:15 PM	84.8	62	2	SW	0.5	5	SW	28.676	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/24/2016	2:30 PM	85.6	60	1	WSW	0.25	5	WSW	28.672	0	0
7/24/2016	2:45 PM	86.3	65	2	SW	0.5	8	SSE	28.67	0	0
7/24/2016	3:00 PM	86.9	63	1	NE	0.25	4	SSW	28.664	0	0
7/24/2016	3:15 PM	85.8	60	1	SSW	0.25	3	NE	28.664	0	0
7/24/2016	3:30 PM	84.9	64	1	SW	0.25	3	SSW	28.661	0	0
7/24/2016	3:45 PM	85.5	62	1	SW	0.25	4	SW	28.655	0	0
7/24/2016	4:00 PM	85.5	63	1	SSW	0.25	4	SW	28.653	0	0
7/24/2016	4:15 PM	83.8	61	2	SSW	0.5	6	S	28.657	0	0
7/24/2016	4:30 PM	84.3	59	2	S	0.5	7	S	28.654	0	0
7/24/2016	4:45 PM	83.6	64	1	SSW	0.25	6	SSW	28.657	0	0
7/24/2016	5:00 PM	82.8	67	1	SSW	0.25	3	WNW	28.661	0	0
7/24/2016	5:15 PM	82.8	67	1	NNW	0.25	3	NW	28.658	0	0
7/24/2016	5:30 PM	82.8	67	1	ESE	0.25	3	SE	28.66	0	0
7/24/2016	5:45 PM	84.1	59	1	S	0.25	5	S	28.657	0	0
7/24/2016	6:00 PM	83.3	65	1	SSW	0.25	5	WNW	28.651	0	0
7/24/2016	6:15 PM	82.7	61	1	SSW	0.25	4	SSW	28.653	0	0
7/24/2016	6:30 PM	82	66	1	SSW	0.25	4	S	28.656	0	0
7/24/2016	6:45 PM	80.1	71	0	SSW	0	1	SSW	28.657	0	0
7/24/2016	7:00 PM	78	73	0	SSW	0	1	SSW	28.654	0	0
7/24/2016	7:15 PM	76	76	1	SSW	0.25	1	SSW	28.654	0	0
7/24/2016	7:30 PM	74.9	79	0	SSW	0	1	SSW	28.654	0	0
7/24/2016	7:45 PM	74.2	82	0	SSW	0	1	SSW	28.655	0	0
7/24/2016	8:00 PM	73.3	80	0	SSW	0	1	SSW	28.655	0	0
7/24/2016	8:15 PM	72.7	80	0	SSW	0	1	SSW	28.659	0	0
7/24/2016	8:30 PM	71.8	83	0	SSW	0	1	SSW	28.66	0	0
7/24/2016	8:45 PM	71.3	82	0	SSW	0	1	SSW	28.663	0	0
7/24/2016	9:00 PM	71.1	81	0	SSW	0	1	SSW	28.669	0	0
7/24/2016	9:15 PM	70.6	82	0	---	0	0	---	28.674	0	0
7/24/2016	9:30 PM	70.8	82	0	---	0	0	---	28.679	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/24/2016	9:45 PM	70.8	82	0	---	0	0	---	28.684	0	0
7/24/2016	10:00 PM	70.8	83	0	SSW	0	1	SSW	28.684	0	0
7/24/2016	10:15 PM	70.7	83	0	SSW	0	1	SSW	28.689	0	0
7/24/2016	10:30 PM	71	83	0	SSW	0	1	SSW	28.687	0	0
7/24/2016	10:45 PM	71.2	82	0	SSW	0	3	SSW	28.69	0	0
7/24/2016	11:00 PM	70.8	84	0	SSW	0	1	SSW	28.686	0	0
7/24/2016	11:15 PM	71	83	1	SSW	0.25	2	SSW	28.685	0	0
7/24/2016	11:30 PM	71.1	83	0	SSW	0	2	SSW	28.68	0	0
7/24/2016	11:45 PM	70.5	85	0	SSW	0	1	SSW	28.676	0	0
7/25/2016	12:00 AM	70.4	87	0	SSW	0	1	SSW	28.673	0	0
7/25/2016	12:15 AM	70.6	87	0	SSW	0	2	SSW	28.663	0	0
7/25/2016	12:30 AM	70.9	86	1	SSE	0.25	2	SSW	28.665	0	0
7/25/2016	12:45 AM	70.8	87	0	SSE	0	2	SSE	28.659	0	0
7/25/2016	1:00 AM	70.3	88	0	SSE	0	2	SSE	28.657	0	0
7/25/2016	1:15 AM	70.2	88	0	SSE	0	1	SSE	28.656	0	0
7/25/2016	1:30 AM	70.3	89	0	SSE	0	1	SSE	28.649	0	0
7/25/2016	1:45 AM	70.3	89	0	SSE	0	1	SSE	28.647	0	0
7/25/2016	2:00 AM	70.1	90	0	SW	0	2	SW	28.644	0	0
7/25/2016	2:15 AM	70.3	90	0	SW	0	3	SW	28.652	0	0
7/25/2016	2:30 AM	70.8	90	0	SW	0	2	SW	28.651	0	0
7/25/2016	2:45 AM	70.9	89	0	SW	0	2	SW	28.647	0	0
7/25/2016	3:00 AM	70.7	90	0	SW	0	1	SW	28.649	0	0
7/25/2016	3:15 AM	70.1	90	0	SW	0	1	SW	28.649	0	0
7/25/2016	3:30 AM	69.1	92	0	SW	0	1	SW	28.645	0	0
7/25/2016	3:45 AM	68.5	93	0	SW	0	2	SW	28.641	0	0
7/25/2016	4:00 AM	68.3	94	0	SW	0	2	SW	28.639	0	0
7/25/2016	4:15 AM	68.3	93	0	SW	0	1	SW	28.641	0	0
7/25/2016	4:30 AM	68.1	94	0	SW	0	2	SW	28.641	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/25/2016	4:45 AM	67.9	94	0	SW	0	1	SW	28.639	0	0
7/25/2016	5:00 AM	67.5	94	0	---	0	0	---	28.652	0	0
7/25/2016	5:15 AM	66.6	95	0	---	0	0	---	28.655	0	0
7/25/2016	5:30 AM	66.4	97	0	---	0	0	---	28.655	0	0
7/25/2016	5:45 AM	66.1	97	0	---	0	0	---	28.656	0	0
7/25/2016	6:00 AM	66.1	97	0	---	0	0	---	28.651	0	0
7/25/2016	6:15 AM	66.4	97	0	---	0	0	---	28.657	0	0
7/25/2016	6:30 AM	67	98	0	SW	0	1	SW	28.658	0	0
7/25/2016	6:45 AM	67.7	98	0	SW	0	1	SW	28.655	0	0
7/25/2016	7:00 AM	68.4	97	0	SW	0	2	SW	28.653	0	0
7/25/2016	7:15 AM	68.9	96	1	SW	0.25	3	W	28.656	0	0
7/25/2016	7:30 AM	69.3	96	1	SW	0.25	4	S	28.65	0	0
7/25/2016	7:45 AM	69.5	96	1	S	0.25	5	SSW	28.651	0	0
7/25/2016	8:00 AM	69.9	95	1	S	0.25	6	SSE	28.64	0	0
7/25/2016	8:15 AM	70.4	95	1	SSW	0.25	4	SSW	28.638	0	0
7/25/2016	8:30 AM	71.1	93	1	ESE	0.25	4	WSW	28.639	0	0
7/25/2016	8:45 AM	72.4	93	2	S	0.5	4	SSW	28.634	0	0
7/25/2016	9:00 AM	74.2	90	1	SSW	0.25	5	SSW	28.634	0	0
7/25/2016	9:15 AM	76.1	89	1	S	0.25	3	S	28.633	0	0
7/25/2016	9:30 AM	76.7	86	1	SSW	0.25	5	SSW	28.635	0	0
7/25/2016	9:45 AM	78.4	83	1	SSW	0.25	5	SSW	28.637	0	0
7/25/2016	10:00 AM	79.9	81	1	SSW	0.25	5	SSW	28.638	0	0
7/25/2016	10:15 AM	80.2	83	2	ENE	0.5	5	SSW	28.633	0	0
7/25/2016	10:30 AM	81.2	77	2	SSW	0.5	7	SSW	28.629	0	0
7/25/2016	10:45 AM	82.1	79	2	SSW	0.5	5	SSW	28.639	0	0
7/25/2016	11:00 AM	82.3	77	2	S	0.5	8	S	28.638	0	0
7/25/2016	11:15 AM	83.5	77	2	S	0.5	6	SSE	28.638	0	0
7/25/2016	11:30 AM	83	78	2	S	0.5	6	NE	28.636	0	0
7/25/2016	11:45 AM	81.9	78	1	SSW	0.25	3	NW	28.631	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/25/2016	12:00 PM	82.1	77	1	SSE	0.25	3	ESE	28.625	0	0
7/25/2016	12:15 PM	83.1	77	1	W	0.25	6	WSW	28.618	0	0
7/25/2016	12:30 PM	83.4	75	2	S	0.5	6	SSE	28.614	0	0
7/25/2016	12:45 PM	83.8	77	1	S	0.25	4	ENE	28.611	0	0
7/25/2016	1:00 PM	84.1	78	2	S	0.5	6	ENE	28.607	0	0
7/25/2016	1:15 PM	85	75	4	SSW	1	11	WSW	28.601	0	0
7/25/2016	1:30 PM	85.6	78	2	S	0.5	9	SW	28.592	0	0
7/25/2016	1:45 PM	85.4	77	2	SSW	0.5	8	SSW	28.588	0	0
7/25/2016	2:00 PM	85.7	78	2	SSW	0.5	6	SSW	28.583	0	0
7/25/2016	2:15 PM	86	78	2	SW	0.5	8	S	28.575	0	0
7/25/2016	2:30 PM	87.5	76	2	SSW	0.5	5	SSW	28.566	0	0
7/25/2016	2:45 PM	88.1	72	2	SSW	0.5	6	S	28.568	0	0
7/25/2016	3:00 PM	87.5	75	1	SSW	0.25	5	SSW	28.56	0	0
7/25/2016	3:15 PM	85.7	78	0	SSW	0	2	SSW	28.544	0	0
7/25/2016	3:30 PM	83.4	80	0	SSW	0	2	SSW	28.551	0	0
7/25/2016	3:45 PM	81.3	84	0	SW	0	3	SSW	28.556	0	0
7/25/2016	4:00 PM	79.4	90	1	SW	0.25	2	SW	28.551	0	0
7/25/2016	4:15 PM	77.9	90	1	SW	0.25	8	SSW	28.563	0	0
7/25/2016	4:30 PM	75.3	89	3	SW	0.75	7	SSW	28.564	0	0
7/25/2016	4:45 PM	73.9	89	1	SW	0.25	6	S	28.581	0	0
7/25/2016	5:00 PM	70.5	92	3	WSW	0.75	13	SE	28.638	0.36	5.01
7/25/2016	5:15 PM	68.5	95	2	WSW	0.5	8	SSE	28.622	0.23	4.06
7/25/2016	5:30 PM	68.3	96	2	SSE	0.5	6	SSW	28.626	0.02	0.36
7/25/2016	5:45 PM	68.2	97	1	S	0.25	3	S	28.608	0.04	0.32
7/25/2016	6:00 PM	68.1	97	0	S	0	2	S	28.612	0.01	0.32
7/25/2016	6:15 PM	68	98	0	S	0	2	S	28.594	0.01	0.06
7/25/2016	6:30 PM	68.1	98	1	SW	0.25	2	SW	28.607	0.01	0.05
7/25/2016	6:45 PM	67.9	98	0	S	0	3	SW	28.601	0.04	0.29

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/25/2016	7:00 PM	67.8	98	0	S	0	2	S	28.59	0.03	0.19
7/25/2016	7:15 PM	68	98	1	S	0.25	2	S	28.575	0	0
7/25/2016	7:30 PM	68.1	98	0	S	0	2	S	28.579	0	0
7/25/2016	7:45 PM	68	98	1	S	0.25	3	WNW	28.583	0	0
7/25/2016	8:00 PM	67.9	98	0	SW	0	2	SW	28.581	0	0
7/25/2016	8:15 PM	67.8	98	0	SW	0	1	SW	28.579	0	0
7/25/2016	8:30 PM	67.4	98	0	WSW	0	1	WSW	28.579	0	0
7/25/2016	8:45 PM	66.9	98	0	WSW	0	2	WSW	28.581	0	0
7/25/2016	9:00 PM	66.4	98	0	---	0	0	---	28.581	0	0
7/25/2016	9:15 PM	66	98	0	WSW	0	1	WSW	28.597	0	0
7/25/2016	9:30 PM	65.8	98	0	---	0	0	---	28.607	0	0
7/25/2016	9:45 PM	65.6	98	0	---	0	0	---	28.61	0	0
7/25/2016	10:00 PM	65.1	98	0	WSW	0	1	WSW	28.614	0	0
7/25/2016	10:15 PM	65	98	0	---	0	0	---	28.615	0	0
7/25/2016	10:30 PM	65.2	99	0	---	0	0	---	28.619	0	0
7/25/2016	10:45 PM	65.3	99	0	WSW	0	1	WSW	28.619	0	0
7/25/2016	11:00 PM	65.4	99	0	WSW	0	1	WSW	28.618	0	0
7/25/2016	11:15 PM	65.2	99	0	WSW	0	1	WSW	28.618	0	0
7/25/2016	11:30 PM	65.1	99	0	WSW	0	2	WSW	28.616	0	0
7/25/2016	11:45 PM	64.9	99	0	WSW	0	1	WSW	28.614	0	0
7/26/2016	12:00 AM	64.7	98	0	WSW	0	1	WSW	28.615	0	0
7/26/2016	12:15 AM	64.6	99	0	WSW	0	1	WSW	28.613	0	0
7/26/2016	12:30 AM	64.7	99	0	WSW	0	2	WSW	28.618	0	0
7/26/2016	12:45 AM	64.8	99	0	ENE	0	4	ENE	28.62	0	0
7/26/2016	1:00 AM	64.9	99	0	SSW	0	2	WNW	28.62	0	0
7/26/2016	1:15 AM	65	99	0	SSW	0	2	SSW	28.619	0	0
7/26/2016	1:30 AM	65.1	99	0	SSW	0	1	SSW	28.614	0	0
7/26/2016	1:45 AM	65.2	99	0	ENE	0	2	ENE	28.61	0	0
7/26/2016	2:00 AM	65.3	99	1	SSE	0.25	3	S	28.605	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/26/2016	2:15 AM	65.4	99	0	WNW	0	2	WNW	28.604	0	0
7/26/2016	2:30 AM	65.6	99	0	WNW	0	1	WNW	28.604	0	0
7/26/2016	2:45 AM	65.7	99	0	WNW	0	1	WNW	28.604	0	0
7/26/2016	3:00 AM	65.9	99	0	WNW	0	1	WNW	28.602	0	0
7/26/2016	3:15 AM	66	99	0	WNW	0	2	WNW	28.604	0	0
7/26/2016	3:30 AM	66.1	99	0	WSW	0	1	WSW	28.609	0	0
7/26/2016	3:45 AM	66.2	99	0	SE	0	3	SSE	28.608	0	0
7/26/2016	4:00 AM	66.1	99	0	SW	0	2	SW	28.607	0	0
7/26/2016	4:15 AM	66.2	99	0	W	0	3	SW	28.611	0	0
7/26/2016	4:30 AM	66.1	99	0	SSE	0	2	SSW	28.612	0	0
7/26/2016	4:45 AM	66	99	0	S	0	4	SSE	28.614	0	0
7/26/2016	5:00 AM	65.9	99	0	WSW	0	3	SW	28.613	0	0
7/26/2016	5:15 AM	65.7	99	0	WSW	0	1	WSW	28.615	0	0
7/26/2016	5:30 AM	65.5	99	0	WSW	0	2	SSW	28.622	0	0
7/26/2016	5:45 AM	65.6	99	0	NNE	0	3	WNW	28.624	0	0
7/26/2016	6:00 AM	65.5	99	0	WSW	0	3	W	28.627	0	0
7/26/2016	6:15 AM	65.5	99	0	NNW	0	3	SE	28.631	0	0
7/26/2016	6:30 AM	65.4	99	0	SSW	0	3	SSW	28.634	0	0
7/26/2016	6:45 AM	65.5	99	0	WNW	0	3	WNW	28.638	0	0
7/26/2016	7:00 AM	65.7	99	0	SE	0	2	WSW	28.636	0	0
7/26/2016	7:15 AM	65.7	99	1	SW	0.25	3	SE	28.64	0	0
7/26/2016	7:30 AM	65.9	99	1	SSE	0.25	4	SW	28.64	0	0
7/26/2016	7:45 AM	66.2	99	0	SSE	0	3	NNE	28.641	0	0
7/26/2016	8:00 AM	66.5	99	1	W	0.25	4	S	28.646	0	0
7/26/2016	8:15 AM	67.1	99	1	SW	0.25	6	E	28.647	0	0
7/26/2016	8:30 AM	67.3	99	1	NW	0.25	3	W	28.654	0	0
7/26/2016	8:45 AM	67.8	99	1	WSW	0.25	5	S	28.656	0	0
7/26/2016	9:00 AM	68.6	99	0	SSE	0	2	SSE	28.657	0	0

Date	Time	Temp Out	Out Hum	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Bar	Rain	Rain Rate
7/26/2016	9:15 AM	69.2	98	1	E	0.25	3	NE	28.657	0	0
7/26/2016	9:30 AM	70.4	97	1	WNW	0.25	3	E	28.655	0	0
7/26/2016	9:45 AM	71.2	97	1	SSW	0.25	3	S	28.654	0	0
7/26/2016	10:00 AM	72.5	95	2	WSW	0.5	6	ESE	28.651	0	0
7/26/2016	10:15 AM	74.1	92	1	WSW	0.25	5	S	28.65	0	0
7/26/2016	10:30 AM	74.8	89	2	SSW	0.5	5	SSW	28.648	0	0
7/26/2016	10:45 AM	75.9	89	1	N	0.25	4	NE	28.646	0	0
7/26/2016	11:00 AM	76.1	88	2	NNE	0.5	6	W	28.644	0	0
7/26/2016	11:15 AM	77.2	82	2	SW	0.5	6	ESE	28.645	0	0
7/26/2016	11:30 AM	78.4	82	2	SW	0.5	6	SSW	28.646	0	0
7/26/2016	11:45 AM	79	82	2	ESE	0.5	7	SSE	28.644	0	0
7/26/2016	12:00 PM	79	80	2	NE	0.5	11	SSE	28.641	0	0
7/26/2016	12:15 PM	79.9	80	2	NNW	0.5	7	WSW	28.64	0	0
7/26/2016	12:30 PM	80.2	79	2	W	0.5	7	ENE	28.635	0	0
7/26/2016	12:45 PM	79.2	76	2	WSW	0.5	9	SSE	28.631	0	0

Instrumentation Certificates (15 pages)

(follow this page)

Calibration Certificate No. 0000701

Instrument: Sound Level Meter
Model: SoundPro SE_DL1
Manufacturer: Quest
Serial number: BLJ050008
Tested with: Microphone 4936 s/n 2663333
 Preamplifier n/a s/n 1013 8962
Type (class): 1
Customer:
Tel/Fax: /

Date Calibrated: 5/24/2016 **Cal Due:** 05/24/2017
Status:

Received	Sent
X	X

In tolerance:

X	X
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Out of tolerance:

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See comments:

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Contains non-accredited tests: Yes No
Calibration service: Basic Standard
Address:

Tested in accordance with the following procedures and standards:
 Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012
 SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31079	Jan 28, 2015	Norsonic SA	Jan 28, 2017
DS-360-SRS	Function Generator	123268	Jan 28, 2015	SRS	Jan 28, 2017
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	Jan 11, 2014	Agilent Provider #93107	Jan 11, 2017
SD700-Extech	Meteo Station	Q769118	Feb 18, 2014	INNOCAL	Feb 18, 2017
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	34103	May 28, 2015	Scantek, Inc./ NVLAP	May 28, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.0	102.00	33.0

Calibrated by:	Steven Boertmann	Authorized signatory:	CM
Signature	STEVEN BOERTMANN	Signature	CHRIS MCEVOY
Date	5-24-16	Date	5-24-16

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - ANSI S1.4 CLAUSE 3.2	Passed	0.20.15
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.1 CLAUSE 13	Passed	0.2
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.1 CLAUSE 14	Passed	0.3
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.1 CLAUSE 15	Passed	0.3
TONEBURST RESPONSE - IEC 61672-3 ED.1 CLAUSE 16	Passed	0.3
PEAK C SOUND LEVEL - IEC 61672-3 ED.1 CLAUSE 17	Passed	0.35
FILTER TEST 1/1OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25
FILTER TEST 1/3OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

² Parameters are certified at actual environmental conditions.

³

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Brüel & Kjær 4936 s/n 2663333 for acoustical test
Preamplifier: Quest n/a s/n 1013 8962 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests and 1448 (18pF) for noise test
Accompanying acoustical calibrator: Quest QC-10 s/n QIK020083
Windscreen: none

Measured Data: in Test Report # of ... pages.

Place of Calibration: Argus Hazco

46410 Continental Dr.
Chesterfield, MI 48047

Ph/Fax: 586-840-3220/ -3221
www.argus-hazco.com

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Page 2 of 2

SoundPro SE_DL1 s/n: BLJ050008 ID:

Date: 5/24/2016 By: SB

Due: 05/24/2017

Calibration Certificate No. 0002445

Instrument: **Sound Level Meter**
 Model: **SoundPro SE_DL1**
 Manufacturer: **Quest**
 Serial number: **BLL090011**
 Tested with: **Microphone 4936 s/n 2785961**
Preamplifier n/a s/n 0912 7515
 Type (class): **1**
 Customer:
 Tel/Fax: /

Date Calibrated: **12/4/2015** Cal Due: **12/04/2016**
 Status:

Received	Sent
X	X

 In tolerance:

X	X
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 Out of tolerance:

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 See comments:
 Contains non-accredited tests: Yes **X** No
 Calibration service: **Basic X** Standard
 Address:

Tested in accordance with the following procedures and standards:
 Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012
 SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31079	Jan 28, 2015	Norsonic SA	Jan 28, 2017
DS-360-SRS	Function Generator	123268	Jan 28, 2015	SRS	Jan 28, 2016
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	Jan 11, 2014	Agilent Provider #93107	Jan 11, 2016
SD700-Extech	Meteo Station	Q769118	Feb 18, 2014	INNOCAL	Feb 18, 2016
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	34103	May 28, 2015	Scantek, Inc./ NVLAP	May 28, 2016

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.0	102.00	30.0

Calibrated by:	Steven Boertmann	Authorized signatory:	CM
Signature	STEVEN BOERTMANN	Signature	CHRIS MCEVOY
Date	12-4-15	Date	12-4-15

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - ANSI S1.4 CLAUSE 3.2	Passed	0.20.15
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.1 CLAUSE 13	Passed	0.2
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.1 CLAUSE 14	Passed	0.3
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.1 CLAUSE 15	Passed	0.3
TONEBURST RESPONSE - IEC 61672-3 ED.1 CLAUSE 16	Passed	0.3
PEAK C SOUND LEVEL - IEC 61672-3 ED.1 CLAUSE 17	Passed	0.35
FILTER TEST 1/1OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25
FILTER TEST 1/3OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

² Parameters are certified at actual environmental conditions.

³

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Brüel & Kjær 4936 s/n 2785961 for acoustical test
Preamplifier: Quest n/a s/n 0912 7515 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests and 1448 (18pF) for noise test
Accompanying acoustical calibrator: Quest QC-10 s/n QIL030010
Windscreen: none

Measured Data: in Test Report # of ... pages.

Place of Calibration: Argus-Hazco

46410 Continental Dr.
Chesterfield, MI 48047

Ph/Fax: 586-840-3220/ -3221

www.argus-hazco.com

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SoundPro SE_DL1 s/n: BLL090011 ID:

Date: 12/4/2015 By: SB

Due: 12/04/2016

Calibration Certificate

0004835

Instrument: **Acoustical Calibrator**
 Model: **QC-10**
 Manufacturer: **Quest**
 Serial number: **QIH040064**
 Class (IEC 60942): **1**
 Barometer type:
 Barometer s/n:

Date Calibrated: **6/2/2016** Cal Due: **06/02/2017**
 Status:

Received	Sent
X	X

 In tolerance:
 Out of tolerance:
 See comments:
 Contains non-accredited tests: Yes **X** No

Customer:
 Tel/Fax: /

Address:

Tested in accordance with the following procedures and standards:

Calibration of Noise Dosimeters, Sound Meters, and Calibratos., Rev. Chf 04

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31079	Jan 28, 2015	Norsonic SA	Jan 28, 2017
DS-360-SRS	Function Generator	123268	Jan 28, 2015	SRS	Jan 28, 2017
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	Jan 11, 2014	Agilent Provider #93107	Jan 11, 2017
SD700-Extech	Meteo Station	Q769118	Feb 18, 2014	INNOCAL	Feb 18, 2017
140-Norsonic	Real Time Analyzer	1405966	May 8, 2014	Norsonic SA	May 8, 2017
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
40AG-GRAS	Microphone	173539	Jan 16, 2015	Scantek, Inc. / NVLAP	Jan 16, 2017
NN1203-Norsonic	Preamplifier	138531	Jan 16, 2015	Norsonic SA	Jan 16, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Steven Boertmann	Authorized signatory:	Chris McEvoy
Signature	STEVEN BOERTMANN	Signature	CHRIS MCEVOY
Date	6-2-16	Date	6-2-16

Results summary: Device was tested and complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications			
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X		
Manufacturer specifications: Total harmonic distortion	X		
Current standards			
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		Unit older than the standard
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		Unit older than the standard
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability	-	-	Unit older than the standard
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		Unit older than the standard
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		Unit older than the standard
Older standards (obsolete)			
IEC 60942: 1997 B.2 - Preliminary inspection	X		
IEC 60942: 1997 B.3.3 - Sound pressure level	X		
IEC 60942: 1997 B.3.4 - Sound pressure level stability	X		
IEC 60942: 1997 B.3.5 - Frequency	X		
IEC 60942: 1997 B.3.6 - Total harmonic distortion	X		
ANSI S1.40: 1984 (R1997) 4.4.2 Sound pressure level in the coupler	X		Not applicable
ANSI S1.40: 1984 (R1997) 4.4 Frequency sound in the coupler	X		Not applicable
ANSI S1.40: 1984 (R1997) 4.10 Total harmonic distortion	X		Not applicable

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

²

Main measured parameters ³:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured ⁴ /Acceptable ⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
994.76 ± 0.99/1000.0 ± 10.0	0.24 ± 0.10/ < 3	114.10 ± 0.02/114.0 ± 0.4

³ The stated level is valid at reference conditions.

⁴ The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=4.53

⁵ Acceptable parameters values are **from the current standards**

Barometer indication	Nominal indication

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.0 ± 1.0	101.00 ± 0.001	39.0 ± 2.0

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type:
Other:

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. Compliance with any standard cannot be claimed based solely on the periodic tests.

Place of Calibration: Argus Hazco

46410 Continental Dr.
Chesterfield, MI 48047

Ph/Fax: 586-840-3220/ -3221
www.argus-hazco.com

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Calibration Certificate No. 0005856

Instrument: **Sound Level Meter**
 Model: **SoundPro SE_DL1**
 Manufacturer: **Quest**
 Serial number: **BLN040010**
 Tested with: **Microphone 4936 s/n 2827897**
Preamplifier n/a s/n 0314 9604
 Type (class): **1**
 Customer:
 Tel/Fax: /

Date Calibrated: **5/11/2016** Cal Due: **05/11/2017**
 Status:

Received	Sent
X	X

 In tolerance:

X	X
----------	----------

 Out of tolerance:

--	--

 See comments:
 Contains non-accredited tests: Yes **X** No
 Calibration service: **Basic X** Standard
 Address:

Tested in accordance with the following procedures and standards:
 Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012
 SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31079	Jan 28, 2015	Norsonic SA	Jan 28, 2017
DS-360-SRS	Function Generator	123268	Jan 28, 2015	SRS	Jan 28, 2017
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	Jan 11, 2014	Agilent Provider #93107	Jan 11, 2017
SD700-Extech	Meteo Station	Q769118	Feb 18, 2014	INNOCAL	Feb 18, 2017
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	34103	May 28, 2015	Scantek, Inc./ NVLAP	May 28, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.0	102.00	33.0

Calibrated by:	Steven Boertmann	Authorized signatory:	CM
Signature	STEVEN BOERTMANN	Signature	CHRIS MCEVOY
Date	5-11-16	Date	5-11-16

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - ANSI S1.4 CLAUSE 3.2	Passed	0.20.15
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.1 CLAUSE 13	Passed	0.2
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.1 CLAUSE 14	Passed	0.3
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.1 CLAUSE 15	Passed	0.3
TONEBURST RESPONSE - IEC 61672-3 ED.1 CLAUSE 16	Passed	0.3
PEAK C SOUND LEVEL - IEC 61672-3 ED.1 CLAUSE 17	Passed	0.35
FILTER TEST 1/OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25
FILTER TEST 1/3OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

² Parameters are certified at actual environmental conditions.

³

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Brüel & Kjær 4936 s/n 2827897 for acoustical test
Preamplifier: Quest n/a s/n 0314 9604 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests and 1448 (18pF) for noise test
Accompanying acoustical calibrator: Quest QC-10 s/n QIM090126
Windscreen: none

Place of Calibration: Argus Hazco

46410 Continental Dr.
Chesterfield, MI 48047

Ph/Fax: 586-840-3220/ -3221
www.argus-hazco.com

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Page 2 of 2

SoundPro SE_DL1 s/n: BLN040010 ID:

Date: 5/11/2016 By: SB

Due: 05/11/2017

Calibration Certificate No. 0005977

Instrument: Sound Level Meter
Model: SoundPro SE_DL1
Manufacturer: Quest
Serial number: BLN060004
Tested with: Microphone 4936 s/n 2827932
 Preamplifier n/a s/n 0614 9684
Type (class): 1
Customer:
Tel/Fax: /

Date Calibrated: 5/3/2016 **Cal Due:** 05/03/2017
Status:

Received	Sent
X	X

In tolerance:

X	X
----------	----------

Out of tolerance:

--	--

See comments:

--

Contains non-accredited tests: Yes No

Calibration service: Basic Standard

Address:

Tested in accordance with the following procedures and standards:
 Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012
 SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31079	Jan 28, 2015	Norsonic SA	Jan 28, 2017
DS-360-SRS	Function Generator	123268	Jan 28, 2015	SRS	Jan 28, 2017
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	Jan 11, 2014	Agilent Provider #93107	Jan 11, 2017
SD700-Extech	Meteo Station	Q769118	Feb 18, 2014	INNOCAL	Feb 18, 2017
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	34103	May 28, 2015	Scantek, Inc./ NVLAP	May 28, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.0	102.00	34.0

Calibrated by:	Steven Boertmann	Authorized signatory:	CM
Signature	STEVEN BOERTMANN	Signature	CHRIS MCEVOY
Date	5-3-16	Date	5-3-16

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - ANSI S1.4 CLAUSE 3.2	Passed	0.20.15
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.1 CLAUSE 13	Passed	0.2
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.1 CLAUSE 14	Passed	0.3
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.1 CLAUSE 15	Passed	0.3
TONEBURST RESPONSE - IEC 61672-3 ED.1 CLAUSE 16	Passed	0.3
PEAK C SOUND LEVEL - IEC 61672-3 ED.1 CLAUSE 17	Passed	0.35
FILTER TEST 1/1OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25
FILTER TEST 1/3OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

² Parameters are certified at actual environmental conditions.

³

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Brüel & Kjær 4936 s/n 2827932 for acoustical test
Preamplifier: Quest n/a s/n 0614 9684 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests and 1448 (18pF) for noise test
Accompanying acoustical calibrator: Quest QC-10 s/n QID060004
Windscreen: none

Measured Data: in Test Report # of ... pages.

Place of Calibration: Argus Hazco

46410 Continental Dr.
Chesterfield, MI 48047

Ph/Fax: 586-840-3220/ -3221
www.argus-hazco.com

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

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Page 2 of 2

SoundPro SE_DL1 s/n: BLN060004 ID:

Date: 5/3/2016 By: SB

Due: 05/03/2017

Calibration Certificate No. 0005978

Instrument: **Sound Level** Meter
 Model: **SoundPro SE_DL1**
 Manufacturer: **Quest**
 Serial number: **BLN060002**
 Tested with: **Microphone 4936 s/n 2861410**
Preamplifier n/a s/n 0215 0343
 Type (class): **1**
 Customer:
 Tel/Fax: /

Date Calibrated: **6/13/2016** Cal Due: **06/13/2017**
 Status:

Received	Sent
X	X

 In tolerance:

X	X
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 Out of tolerance:

--	--

 See comments:
 Contains non-accredited tests: Yes **X** No
 Calibration service: Basic **X** Standard
 Address:

Tested in accordance with the following procedures and standards:
 Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012
 SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31079	Jan 28, 2015	Norsonic SA	Jan 28, 2017
DS-360-SRS	Function Generator	123268	Jan 28, 2015	SRS	Jan 28, 2017
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	Jan 11, 2014	Agilent Provider #93107	Jan 11, 2017
SD700-Extech	Meteo Station	Q769118	Feb 18, 2014	INNOCAL	Feb 18, 2017
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	34103	May 28, 2015	Scantek, Inc./ NVLAP	May 28, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.0	101.50	34.0

Calibrated by:	Steven Boertmann	Authorized signatory:	CM
Signature	STEVEN BOERTMANN	Signature	CHRIS MCEVOY
Date	6-13-16	Date	6-13-16

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - ANSI S1.4 CLAUSE 3.2	Passed	0.20.15
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.1 CLAUSE 13	Passed	0.2
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.1 CLAUSE 14	Passed	0.3
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.1 CLAUSE 15	Passed	0.3
TONEBURST RESPONSE - IEC 61672-3 ED.1 CLAUSE 16	Passed	0.3
PEAK C SOUND LEVEL - IEC 61672-3 ED.1 CLAUSE 17	Passed	0.35
FILTER TEST 1/OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25
FILTER TEST 1/3OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

² Parameters are certified at actual environmental conditions.

³

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Brüel & Kjær 4936 s/n 2861410 for acoustical test
Preamplifier: Quest n/a s/n 0215 0343 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests and 1448 (18pF) for noise test
Accompanying acoustical calibrator: Quest QC-10 s/n QIK020149
Windscreen: none

Measured Data: in Test Report # of ... pages.

Place of Calibration: Argus Hazco

46410 Continental Dr.
Chesterfield, MI 48047

Ph/Fax: 586-840-3220/ -3221
www.argus-hazco.com

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

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Page 2 of 2

SoundPro SE_DL1 s/n: BLN060002 ID:

Date: 6/13/2016 By: SB

Due: 06/13/2017

Calibration Certificate No. 0005856

Instrument: Sound Level Meter
Model: SoundPro SE_DL1
Manufacturer: Quest
Serial number: BLN040010
Tested with: Microphone 4936 s/n 2827897
 Preamplifier n/a s/n 0314 9604
Type (class): 1
Customer:
Tel/Fax: /

Date Calibrated: 5/11/2016 **Cal Due:** 05/11/2017
Status:

Received	Sent
X	X

In tolerance:

X	X
----------	----------

Out of tolerance:

--	--

See comments:

--

Contains non-accredited tests: Yes No
Calibration service: Basic Standard
Address:

Tested in accordance with the following procedures and standards:
 Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012
 SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31079	Jan 28, 2015	Norsonic SA	Jan 28, 2017
DS-360-SRS	Function Generator	123268	Jan 28, 2015	SRS	Jan 28, 2017
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	Jan 11, 2014	Agilent Provider #93107	Jan 11, 2017
SD700-Extech	Meteo Station	Q769118	Feb 18, 2014	INNOCAL	Feb 18, 2017
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	34103	May 28, 2015	Scantek, Inc./ NVLAP	May 28, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.0	102.00	33.0

Calibrated by:	Steven Boertmann	Authorized signatory:	CM
Signature	STEVEN BOERTMANN	Signature	CHRIS MCEVOY
Date	5-11-16	Date	5-11-16

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES ¹ FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - ANSI S1.4 CLAUSE 3.2	Passed	0.20.15
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.1 CLAUSE 13	Passed	0.2
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.1 CLAUSE 14	Passed	0.3
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.1 CLAUSE 15	Passed	0.3
TONEBURST RESPONSE - IEC 61672-3 ED.1 CLAUSE 16	Passed	0.3
PEAK C SOUND LEVEL - IEC 61672-3 ED.1 CLAUSE 17	Passed	0.35
FILTER TEST 1/1OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25
FILTER TEST 1/3OCTAVE: FLAT FREQUENCY RESPONSE - IEC 61260, CLAUSE 4.10 & #5.9	Passed	0.25

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

² Parameters are certified at actual environmental conditions.

³

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Brüel & Kjær 4936 s/n 2827897 for acoustical test
Preamplifier: Quest n/a s/n 0314 9604 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests and 1448 (18pF) for noise test
Accompanying acoustical calibrator: Quest QC-10 s/n QIM090126
Windscreen: none

Place of Calibration: Argus Hazco

46410 Continental Dr.
Chesterfield, MI 48047

Ph/Fax: 586-840-3220/ -3221
www.argus-hazco.com

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Page 2 of 2

SoundPro SE_DL1 s/n: BLN040010 ID:

Date: 5/11/2016 By: SB

Due: 05/11/2017



Certificate of Calibration

Certificate No: 5126344BLI020011

Submitted By: ARGUS HAZCO CHESTERFIELD, M
46400 CONTINENTAL DRIVE
CHESTERFIELD, MI 48047

Serial Number: BLI020011 Date Received: 1/26/2016
Customer ID: Date Issued: 2/1/2016
Model: SOUNDPRO DL-1-1/3 SLM Valid Until: 2/1/2017

Test Conditions: Model Conditions:
Temperature: 18°C to 29°C As Found: DAMAGED
Humidity: 20% to 80% As Left: IN TOLERANCE
Barometric Pressure: 890 mbar to 1050 mbar

SubAssemblies:

Description: Serial Number:
MICROPHONE B&K 4936 1/2 IN. ELECTRET 2712701
TYPE 1 PREAMP 0810 4873

1096345

Calibrated per Procedure: 53V899

Reference Standard(s):

I.D. Number	Device	Last Calibration Date	Calibration Due
EF000100	QUEST-CAL	6/1/2015	6/1/2016
ET0000556	B&K ENSEMBLE	4/8/2015	4/8/2016

Measurement Uncertainty:

+/- 2.2% ACOUSTIC (0.19DB)
Estimated at 95% Confidence Level (k=2)

Calibrated By: Paul M. Wegmann 2/1/2016
PAUL WEGMANN Service Technician

This report certifies that all calibration equipment used in the test is traceable to NIST, and applies only to the unit identified under equipment above. This report must not be reproduced except in its entirety without the written approval of 3M Detection Solutions.

**Table 9.2-3
Summary of Existing Outdoor Ambient Sound Level Measurement Results**

Site ID	Date(s)	Start Time (hh:mm)	End Time (hh:mm)	L _{eq}	T (°F)	RH (%)	Wind Speed (mph) & Dir.
NS 1	7/13/2016 to 7/26/2016	15:00	12:45	68.4			See Note 3
NS 2	7/13/2016 to 7/26/2016	15:00	12:45	55.6			See Note 3
NS 3	7/13/2016 to 7/26/2016	15:00	12:45	50.5			See Note 3
NS 4	7/13/2016 to 7/26/2016	15:00	12:45	51.0			See Note 3
NS 5	7/13/2016 to 7/26/2016	15:00	12:45	45.1			See Note 3
NS 6	7/13/2016 to 7/26/2016	15:00	12:45	53.0			See Note 3

NOTES:

1. L_{eq} = Ambient Sound Level, T= Temperature, RH = Relative Humidity.
2. Site IDs denoted as "NS" and corresponding values are part of two-week ambient noise survey performed in accordance with Kidder Township Ordinance (180-98 Noise).
3. Refer to H&K Report No. 3454, Appendix B for a detailed breakdown of recorded values.

G:\PennEast\353754_PennEast_Pipeline_EPCMDDataProd_FERC\Work\GIS\IMXD\PENNEAST_KIDDER_COMPRESSOR\PENNEAST_KIDDER_CS_FIG_9.2_2_11x17.mxd

09272016-1117-OVE-000



① MILE POST (STATION EQUATIONS)	▭ PARCEL BOUNDARY
— PROPOSED PENNEAST PIPELINE CENTERLINE	✱ MEASUREMENT LOCATION
▨ KIDDER COMPRESSOR STATION	
▤ KIDDER COMPRESSOR STATION ACCESS ROAD	
▧ KIDDER COMPRESSOR STATION PROPERTY LINE	
▩ KIDDER COMPRESSOR STATION FENCE LINE	
▨ PROPOSED STAGING AREA	
▭ PROPOSED CONSTRUCTION LIMIT	

**NOTE: SEE FIGURES 1 & 2 IN APPENDIX A OF H&K REPORT NOS. 3454 & 3420 SHOWING A DETAILED EQUIPMENT LAYOUT*

MAPS COMPILED UTILIZING ESRI BASEMAP AERIAL IMAGERY, USDA NAIP 5/2015.

PENNEAST PIPELINE PROJECT

FIGURE 9.2-2

EXISTING OUTDOOR AMBIENT SOUND LEVEL MEASUREMENT LOCATIONS

KIDDER TOWNSHIP
CARBON COUNTY, PENNSYLVANIA

400 200 0 400 800 FEET

ABSOLUTE SCALE:
1:4,800

REFERENCE SCALE:
1 IN = 400 FT

M M
MOTT
MACDONALD

DRAWN BY:	KPW 09/2016
CHECKED BY:	SNP 09/2016
APPROVED BY:	MJD 09/2016
REV. DATE:	09/2016
REVISION:	0
DESC:	ISSUED FOR REVIEW
PAGE:	1 OF 1

TABLE 4.10.2-2**Kidder Compressor Station – Summary of Ambient Sound Survey Results**

Measurement Positions at the Property Boundaries and Nearby NSAs	Distance and Direction of NSA from Comp. Building	Ambient Sound Level (dBA, L_{eq}) a/
South Boundary (NS 1)	350 feet South to Southeast	68.4
East Boundary (NS 2)	750 feet East to Northeast	55.6
North Boundary (NS 3)	550 feet North to Northwest	50.5
North Boundary (NS 4)	1,250 feet Northwest	51.0
Hickory Run State Park (NS 5, NSA #2) b/	5,600 feet Southwest	45.1
Houses & State Game Lands (NS 6, NSA #1) b/	2,300 feet North to Northwest	53.0

Note:
a/ Measured two week ambient sound level in accordance with Kidder Township Ordinance (180-90 Noise).
b/ Noise Sensitive Area identified in Hoover & Keith Inc. Report No. 3420.

TABLE 4.10.2-8

Summary of Noise Quality Analysis - Kidder Compressor Station

Nearby NSAs	Distance and Direction of NSA from Comp. Building	Ambient Sound Level (dBA, L _{dn}) a/	Estimated Sound Contribution (dBA, L _{dn}) of the Compressor Station	Cumulative Estimated Sound Level (dBA, L _{dn}) after Installation of the Compressor Building	Change in Sound Level (dBA, L _{dn})
Houses & St. Game Lands (NSA #1)	2,310 feet North to Northwest	47.1	38.6	47.7	0.6
Hickory Run State Park (NSA #2)	5,600 feet Southwest	40.9	21.7	41.0	0.1

Note:

a/ Average L₉₀ sound levels from two week ambient sound survey. Via Ambient L_d and L_n.

TABLE 4.10.2-2

Kidder Compressor Station – Summary of Ambient Sound Survey Results

<u>Measurement Positions at the Property Boundaries and</u> <u>Nearby NSAs</u>	<u>Distance and Direction of NSA from Comp. Building</u>	<u>Ambient Sound Level (dBA, L_{dn}, L_{eq})</u> <u>a/</u>
Econolodge (LT1)	2,310 feet north	57
Pizza Residence (LT2)	1,920 feet north	58
Golf Course (nearest fairway)	3,170 feet northeast	57 <u>a/</u>
<u>South Boundary (NS 1)</u>	<u>350 feet South to Southeast</u>	<u>68.4</u>
<u>East Boundary (NS 2)</u>	<u>750 feet East to Northeast</u>	<u>55.6</u>
<u>North Boundary (NS 3)</u>	<u>550 feet North to Northwest</u>	<u>50.5</u>
<u>North Boundary (NS 4)</u>	<u>1,250 feet Northwest</u>	<u>51.0</u>
<u>Hickory Run State Park (NS 5, NSA #2) b/</u>	<u>5,600 feet Southwest</u>	<u>45.1</u>
<u>Houses & State Game Lands (NS 6, NSA #1) b/</u>	<u>2,300 feet North to Northwest</u>	<u>53.0</u>

Note:

a/ ~~Not measured during field survey, but conservatively assumed similar to that of LT1.~~ Measured two week ambient sound level in accordance with Kidder Township Ordinance (180-90 Noise).

b/ Noise Sensitive Area identified in Hooker & Keith Inc. Report No. 3420.

TABLE 4.10.2-8

Summary of Noise Quality Analysis - Kidder Compressor Station

Nearby NSAs	Distance and Direction of NSA from Comp. Building	Ambient Sound Level (dBA, L _{dn}) ^{a/}	Estimated Sound Contribution (dBA, L _{dn}) of the Compressor Station	Cumulative Estimated Sound Level (dBA, L _{dn}) after Installation of the Compressor Building	Change in Sound Level (dBA, L _{dn})
Econoledge (LT1) House & St. Game Lands (NSA #1)	2,310 feet north 2,310 feet North to Northwest	57 47.1	46 38.6	57 47.7	0 0.6
Pizza Residence (LT2) Hickory Run State Park (NSA #2)	1,920 feet north 5,600 feet Southwest	58 40.9	48 21.7	58 41.0	0 0.1
Golf Course (nearest fairway)	3,170 feet northeast	57 ^{a/}	43	57	0

Note:
a/ ~~Not measured during field survey, but conservatively assumed similar to that of LT1~~ Average L₉₀ sound levels from two week ambient sound survey. Via Ambient L_d and L_n.