

# *COGCC Noise Control and Regulations*

## Garfield County EAB

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**COLORADO**  
Oil & Gas Conservation  
Commission

Department of Natural Resources

Mike Leonard  
Quality Assurance Professional

# *Objectives*

- Introduction to Noise
- Overview of COGCC Noise Regulations
- How are Noise Issues Identified and Enforced
- Real World Examples
- Technical Work Group on Noise

# *Introduction to Noise ( “A” and “C” Scale )*

# *“A” Scale and “C” Scale Noise*

- **“A” Scale Noise**
  - High frequency. “Noise you hear”
  - Example = loud car stereo when windows are down
- **“C” Scale Noise**
  - Low frequency. “Noise you feel”
  - Example = Car that has a bass in its trunk turned all the way up and windows closed

# *“A” Scale and “C” Scale Noise*

- **“A” Scale Noise**
  - Lots of information available
  - Many governments have established limits
  - Lots of experience mitigating
- **“C” Scale Noise**
  - Not a lot of information
  - Very few governments have established limits
  - Mitigations developing

# *“C” Scale and “A” Scale Noise*

- **“A” Scale Noise**
  - Travel is limited and barriers typical reduce the noise significantly
- **“C” Scale Noise**
  - Travels further distances and barriers do not stop the noise
- **Both “A” and “C” scale noise are influenced by several factors:**
  - Topography, vegetation, nearby roads and buildings, other outside sources

# *Overview of COGCC Noise Regulations*

# *“A” Scale Noise Regulations*

- Drilling and Completion Operations
  - 70 or 80 decibels daytime
  - 65 or 75 decibels nighttime
- Pipeline Construction/Facility Installation/Workover Maintenance
  - 70 or 80 decibels daytime
  - 65 or 75 decibels nighttime
  - Typically daytime only operations

**1 - All measurements are made 350 feet from the noise source.**  
**2 - Lower number applies if a house is within 1,000' (Except for Completions)**

# “A” Scale Noise Regulations

- Production Operations
  - Based on zoning from local government

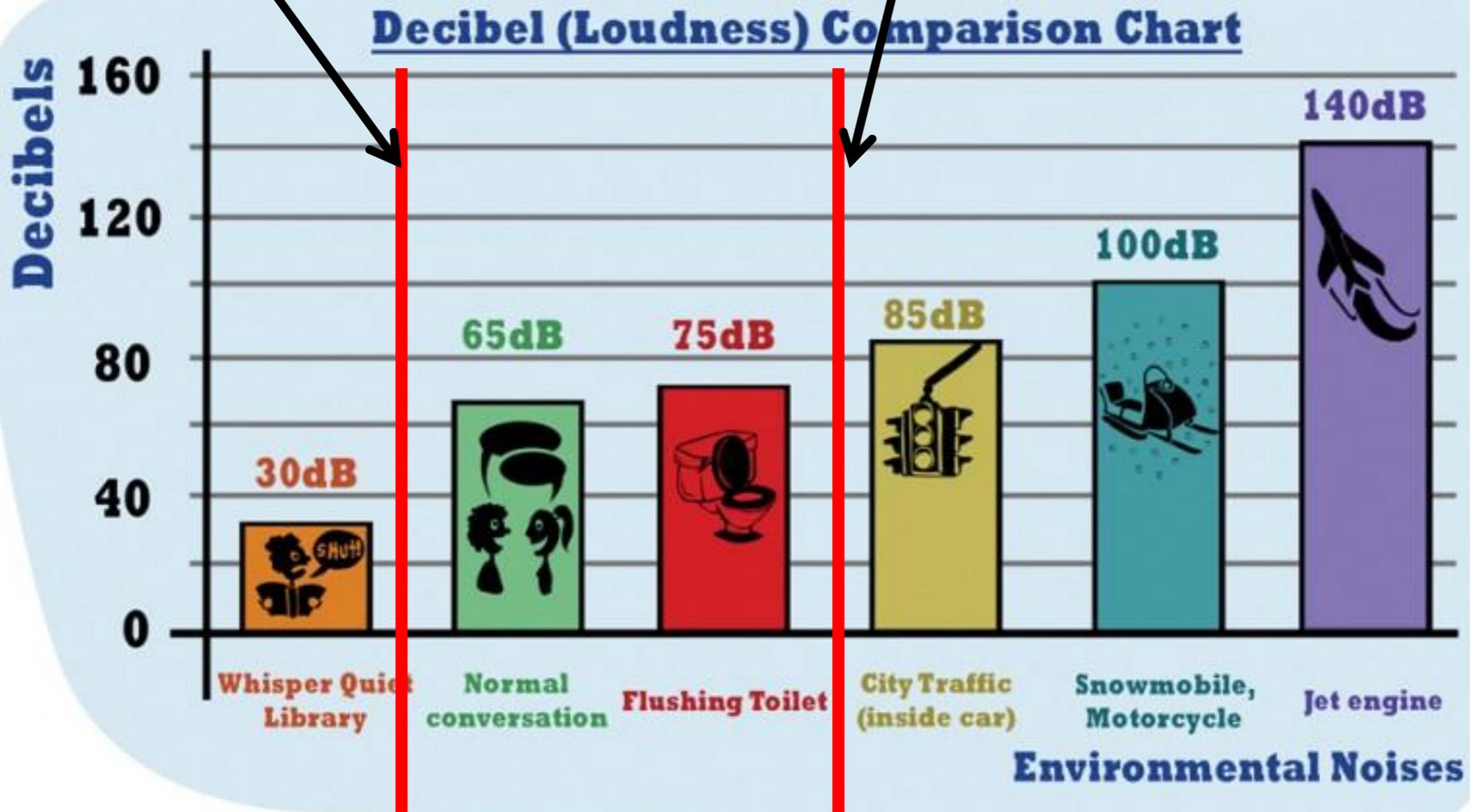
<b>ZONE</b>	<b>7:00 am to next 7:00 pm</b>	<b>7:00 pm to next 7:00 am</b>
Residential/Agricultural/Rural	55 db(A)	50 db(A)
Commercial	60 db(A)	55 db(A)
Light industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)

**All measurements are made 350 feet from the noise source.  
Not at the receptor.**

# “A” Scale Noise Regulations

Production operations in residential areas limited to 55 decibels

Drilling and completion max is 80 decibels



# *“C” Scale Noise Regulations*

- COGCC is one of the only government agencies to have a rule on “C” scale noise
- Complaint based; sound levels measured 25 feet from the complainant's house
- If reading exceeds 65 decibels on “C” scale, operator must:
  - Obtain a low frequency noise impact analysis
  - Implement any reasonable control measures available to mitigate the “C” scale noise
- There is no hard line “C” scale limit

# *How are Noise Issues Investigated and Enforced*

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- Noise investigations are time consuming
- Complaint based
- COGCC performs a 60 minute survey:
  - Location, distance, and time of survey
  - Wind impacts
  - Minute-by-minute averages
- Assess other noise sources in the area to determine their contribution to the survey

# *How are Noise Issues Investigated and Enforced*

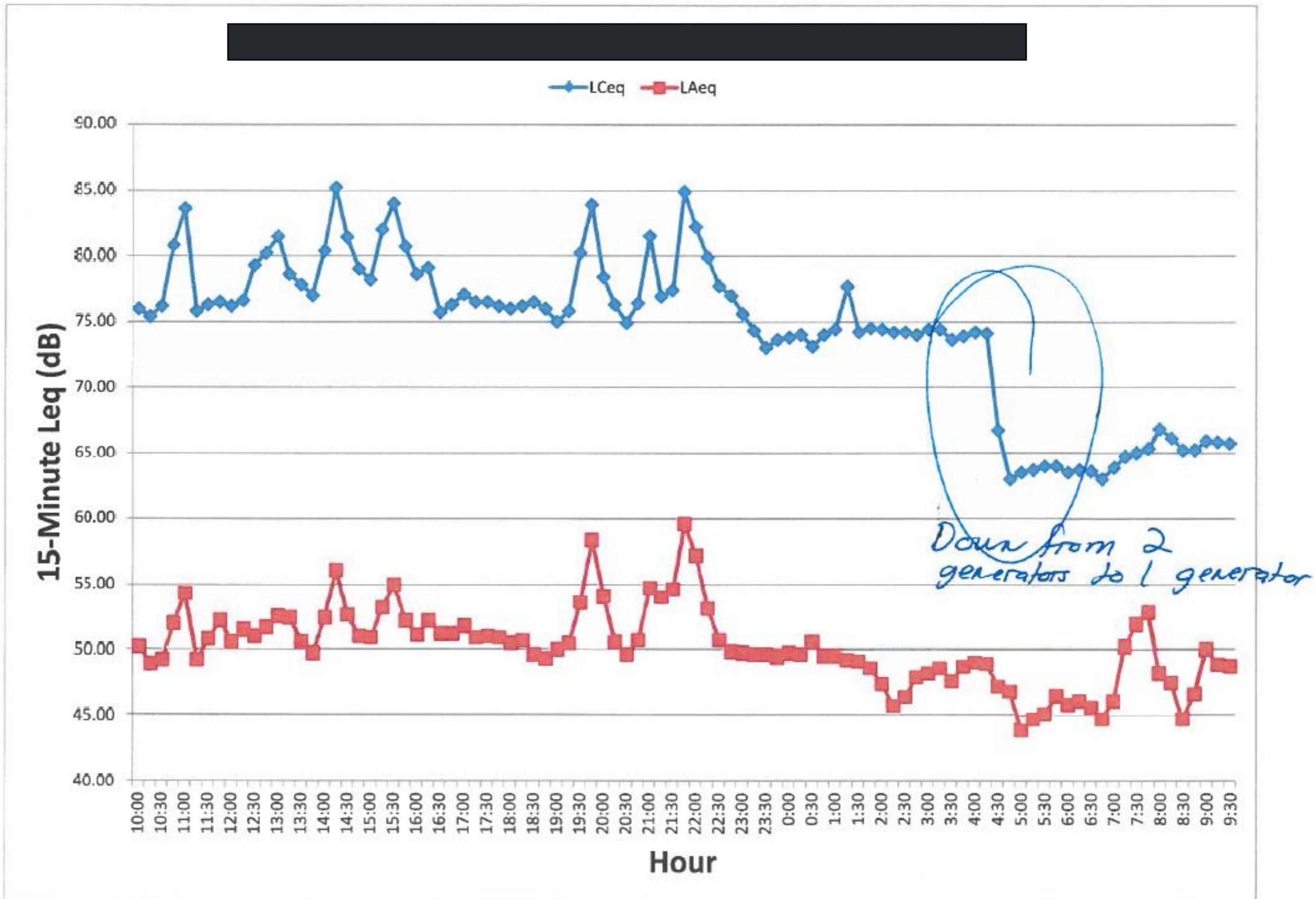
- Determine if an exceedance of a noise limit occurred:
  - If none, close out investigation
  - If exceedance, operator must start to address immediately
- Typically give operator a limited time to resolve the exceedance
- Enforcement action occurs if not timely addressed

# *Real World Examples*

# *Real World Example #1*

- December 2014
- Homes 775' away and “C” scale noise in low to mid 70s at the houses (39 complaints)
- Operator attempted many after the fact mitigations including sound walls, sound blankets, continuous monitoring
  - Did not work
- Levels reduced below 65 “C” scale after a generator was shut down
- No issues with “A” scale noise

# Real World Example #1

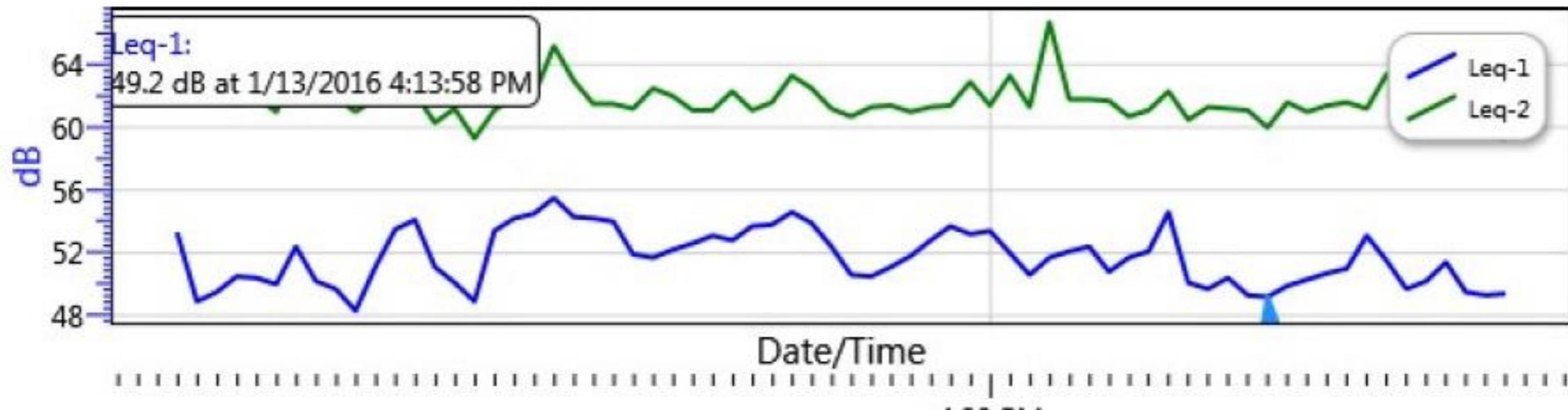


# *Real World Example #2*

- January 2016
- Homes 501' away
- Operator spent a lot of time upfront planning the site for noise (“A” and “C” scale)
  - Sound walls, hay bales, earthen berms, equipment placement, pad layout, equipment modelling, continuous sound monitoring, highline power
- “C” scale measured in low 60s (1 complaint)

# Real World Example #2

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	52 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF
Leq	2	61.7 dB			
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	FAST			



# *Real World Examples*

- Lessons Learned
  - “C” scale noise is hard to mitigate
  - More upfront planning is required
  - It can be done with upfront planning and appropriate mitigations

# *Technical Work Group on Noise*

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- **End Goal:** Find technical solutions to further reduce noise, especially “C” scale noise, from oil and gas operations
- **Members:** Third party noise consultants, CSU, CDPHE, COGCC staff, experts from Alberta Canada, technical staff from operators
- **Time Period:** Started in October 2014 and will continue through 2016

# *Technical Work Group on Noise*

- Accomplishments to Date:
  - Reviewed dozens of oil and gas locations to study and model “A” and “C” scale noise coming from these different oil and gas activities
  - Reviewed several technical studies and talked with other experts
  - Studied wind impacts on noise readings
  - Started reviewing process options and technical solutions available to further reduce noise
  - Started reviewing what other technical solutions can be developed to further address noise

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