



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**



Nevada Department of
**CONSERVATION &
NATURAL RESOURCES**

Nevada Division of Environmental Protection

New Class II Air Quality Operating
Permit for Lithium
Nevada Corporation – Thacker Pass
Project

November 18, 2021

Presented by:

NDEP – Bureau of Air Pollution Control

NEW CLASS II AIR QUALITY OPERATING PERMIT FOR LITHIUM NEVADA CORPORATION – THACKER PASS PROJECT



- Facility Location
- Air Quality Operating Permit Process and Timeline
- Facility Description
- Additional Information Requested During the Technical Review
- Air Emissions Regulated and Facility-Wide Potential to Emit
- Air Dispersion Modeling
- Contents of Air Quality Operating Permit
- Sulfuric Acid Plant Requirements and Emission Monitoring
- Current Status and Next Steps

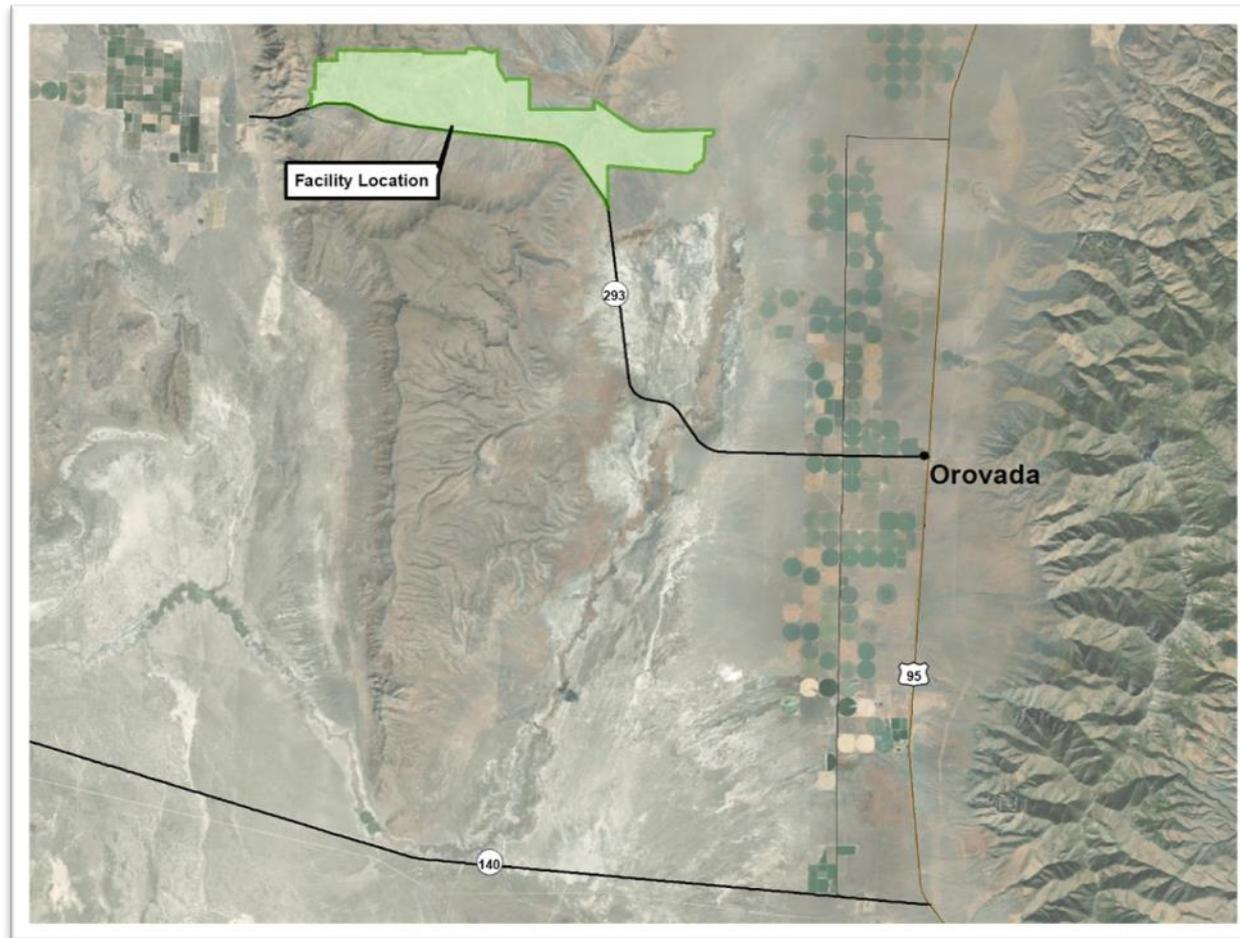
FACILITY LOCATION

Lithium Nevada Corporation's Thacker Pass Project is located in Humboldt County, NV



FACILITY LOCATION (CONTINUED)

Lithium Nevada Corporation's Thacker Pass Project is located 20 miles West-Northwest of Orovada, Nevada



AIR QUALITY OPERATING PERMIT PROCESS

The Air Permitting Process consists of:

- Application Submittal
- Administrative Completeness Review
- Technical Review (including Requests for Additional Information)
 - State and Federal Requirements
 - Emission Factors
 - Air Dispersion Modeling
 - Monitoring, Testing, Recordkeeping, and Reporting
- EPA Review
- Public Notice
- Public Hearing
- Comments Review
- Permit Decision

AIR QUALITY OPERATING PERMIT PROCESS – TIMELINE

Timeline for Lithium Nevada – Thacker Pass Application

January 26, 2021	Application Submitted
February 9, 2021	Application Deemed Administratively Complete
February 10, 2021	Technical Review Begins
October 15, 2021	Technical Review Ends & Intent to Issue (75 stop days accrued)
October 18, 2021	Public Notice Begins
November 18, 2021	Public Hearing and Public Notice Ends
November 19, 2021	Comments Review Begins
To Be Determined	Final Permit Decision

FACILITY DESCRIPTION

The facility will consist of the following processes:

- Open-Pit Ore Extraction
- Mineral Processing
 - Mineral Sizing
 - Wet Screening
 - Classification and Thickening
- Lithium Processing Operations
 - Acid Leaching
 - Neutralization
 - Magnesium Precipitation
 - Lithium Carbonate Extraction
 - Lithium Carbonate Handling/Packaging

FACILITY DESCRIPTION (CONTINUED)

The facility will consist of the following processes:

- Sulfuric Acid Plant
 - Molten Sulfur Used to Produce Sulfuric Acid
 - Generate Steam for Energy that will Provide Power to Support the Facility
- Start-Up Burner
- Package Boiler
- Additional Support Activities
 - Emergency Generators
 - Gasoline, Oil and Diesel Storage Tanks
 - Laboratory Equipment
 - Ammonium Nitrate Prill Silo

ADDITIONAL INFORMATION REQUESTED DURING THE TECHNICAL REVIEW

Sulfuric acid plant limits

- Increased SO₂ emissions based on manufacturer's guarantee
- Increased H₂SO₄ emissions to include a safety factor

Additional information requested about calculations for the following systems:

- System 6 – Leach Tanks
- System 7 – Neutralization Filter Vents
- System 8 – Neutralization Filter Filtrate Blow Vent
- System 13 – Magnesium Precipitation Filter Vents
- System 14 – Magnesium Precipitation Filter Filtrate Blow Vent
- System 24 – Sulfuric Acid Plant

AIR EMISSIONS REGULATED AND FACILITY-WIDE POTENTIAL TO EMIT

Lithium Nevada – Thacker Pass, Potential to Emit (PTE)		
Pollutant		Facility-Wide PTE (tons/year)
PM	Particulate Matter	83.3
PM ₁₀	Particulate Matter ≤ 10 microns in diameter	52.4
PM _{2.5}	Particulate Matter ≤ 2.5 microns in diameter	36.9
SO ₂	Sulfur Dioxide	47.8
NO _x	Oxides of Nitrogen	88.7
CO	Carbon Monoxide	2.52
VOC	Volatile Organic Compounds	0.70
H ₂ S	Hydrogen Sulfide	1.05
H ₂ SO ₄	Sulfuric Acid	25.2
HAPs	Hazardous Air Pollutants (Combined)	0.032

A list of all 187 hazardous air pollutants, defined by EPA, can be found at:
<https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications>

AIR DISPERSION MODELING

- AERMOD – EPA's regulatory air dispersion model
- Requires emission data, meteorological data, terrain data, and receptors to calculate air quality concentrations at receptor locations along the plant boundary
- All areas passed standards

Table 5.3-1
Lithium Nevada Corporation - A1270 - AP1479-4334
Nevada Ambient Air Quality Impact Analysis

Pollutant	Averaging Period	Modeled Concentration	Background Concentration ^e	Total Impact	NAAQS	Percent of Standard	Location (UTM)	
							mN	mE
PM _{2.5}	24-hr (µg/m ³) ^a	7.4	8	15.4	35	44%	4,616,898	411,046
	Annual (µg/m ³) ^b	1.5	2.3	3.8	12	31%	4,616,817	411,203
PM ₁₀	24-hr (µg/m ³)	67.0	10.2	77.2	150	51%	4,616,760	411,372
SO ₂	1-hr (ppb) ^c	41.1		41.1	75	55%	4,615,266	412,497
	3-hr (µg/m ³)	81.9		81.9	1,300	6%	4,615,266	412,497
	24-hr (µg/m ³)	10.3		10.3	365	3%	4,615,266	412,497
	Annual (µg/m ³)	0.3		0.3	80	0%	4,616,367	414,098
NO ₂	1-hr (ppb) ^d	57.9		57.9	100	58%	4,615,166	412,497
	Annual (µg/m ³)	2.4		2.4	100	2%	4,616,369	414,079
CO	1-hr (µg/m ³)	97		97	40,500	0%	4,616,411	413,669
	8-hr (µg/m ³)	31		31	7,000	0%	4,616,361	414,156
H ₂ S	1-hr (µg/m ³)	6.4		6.4	112	6%	4,616,640	414,381
Ozone	8-hr (ppm)	0.0		0.0	0.075	12%		

CONTENTS OF AIR QUALITY OPERATING PERMIT

What can you expect to see in the permit?

- General Conditions (applicable to all permittees)
- Specific Operating Conditions
- Emission Units and Limits
- Monitoring, Recordkeeping, and Reporting
- Source Testing and Sampling
- Specific Federal Regulations
- Surface Area Disturbance and Fugitive Dust

NOTE: The facility is required to control dust at all times and dust complaints (or any air quality complaint) can be called into the Bureau of Air Pollution Control directly at (775) 687-9349.

SULFURIC ACID PLANT REQUIREMENTS

Required Control

- Tail Gas Scrubber

Emissions Controlled

- Particulate Matter (PM/PM₁₀/PM_{2.5})
- Sulfur Dioxide (SO₂)
- Sulfuric Acid (H₂SO₄)

Monitoring

- Hourly Maximum Throughput Limit
- Hourly Monitoring of the Tail Gas Scrubber
- Monthly Observation for Visible Emissions

SULFURIC ACID PLANT EMISSION MONITORING

Testing: Initial and Annual Stack Tests

- Initial stack testing required no later than 180 days after initial start-up.
- Annual performance testing within 90 days of the anniversary date of the previous initial performance testing

Continuous Emissions Monitoring System

- Measure for SO₂ (measured at a minimum of every 15 minutes)
- Quarterly Audits
- Annual Relative Accuracy Test Audit (RATA)

CURRENT STATUS AND NEXT STEPS

Current Status

- Based on information provided, the BAPC has determined that the facility will meet all applicable State and federal Air Quality Standards and Requirements.

What Happens Next?

- The BAPC must respond to comments received
- Review permit language/conditions as applicable
- Issue / Deny

Comments



Ways to comment:



Fill out a comment card to state comment publicly at microphone



Email by close of meeting:
ndepthackerpass@ndep.nv.gov

Contact:

Bureau of Air Pollution Control
775-687-9349 |
ndepthackerpass@ndep.nv.gov
ndep.nv.gov