

# NEVADA EXCELLENCE IN MINE RECLAMATION AWARDS - 2020 and 2021



Nevada Mining Association Awards Presentation

October 23, 2021

Mike Visser – Reclamation Awards Committee Chair



# NEVADA EXCELLENCE IN MINE RECLAMATION AWARDS

- Awards Program began in 1991
- Purpose: “to recognize and share examples of successes in the areas of reclamation, closure, planning, and wildlife protection and enhancement in Nevada”
- Qualifications for an award:
  - Excellent mitigation of the environmental impacts of mineral industry activity
  - Work efforts which go above and beyond what is mandated
  - Worthy examples to share with others in the industry
- Awards require unanimous approval from Committee

# **2020/2021 Nomination Review Team:**

- **Brian Amme/Lacy Trapp – BLM\***
- **Daniel Atkinson - BLM/NDEP-BMRR**
- **Susan Elliott – USFS\***
- **Dominique Etchegoyhen - DCNR**
- **Matt Maples – NDOW\***
- **Kelly McGowan - SEP**
- **Joe Sawyer/Aimee Keys - NDEP-BMRR\***
- **Mike Visher – NDOM\***

**\* - denotes voting committee member**



# 2020 Nevada Excellence in Mine Reclamation Award

**KGHM Robinson Mine**  
**Lane City Waste Rock Facility**  
**White Pine County**

**Award Category:**  
**Legacy Waste Rock Remediation**





# KGHM Robinson Mine

## Lane City Waste Rock Facility



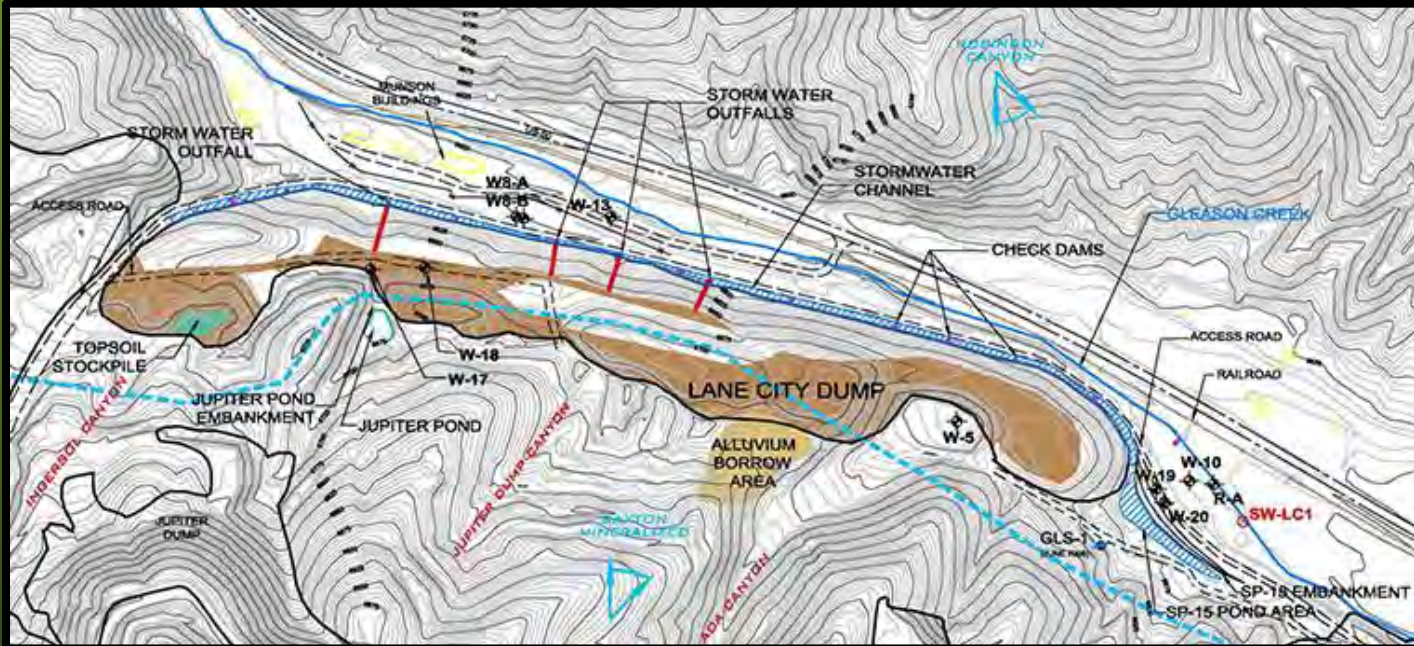
- Legacy mine feature
- Created 1950s - 1978
- Predates NV reclamation regulations
- Identified as potential source of contamination to groundwater and adjacent creek

# KGHM Robinson Mine

# Lane City Waste Rock Facility

➤ **Reclamation included:**

- **Regrading slopes to 2.5:1**
- **Addition of limestone as buffering agent**
- **Construction of new stormwater pond and rip-raps to keep sediment from reaching creek**
- **Covering surface with growth media and seed**





# KGHM Robinson Mine Lane City Waste Rock Facility

Middle section,  
prior to seeding



March 2020



# KGHM Robinson Mine Lane City Waste Rock Facility

Addition of cover material

West End – March 2020



# **KGHM Robinson Mine Lane City Waste Rock Facility**

- This project is an excellent example of a mine operator's commitment to protection of the environment and remediation of a legacy feature for the protection of the community in which it operates.





# Accepting the 2020 award for **KGHM Robinson Mine:**



Frederick Partey,  
Senior Manager,  
Environmental  
Resources –  
U.S. Operations



# 2020 Nevada Excellence in Mine Reclamation

**Hudbay Minerals/  
Mason Resources (US) Inc.**

**Mason Exploration Project  
Lyon County**



**Award Category:**

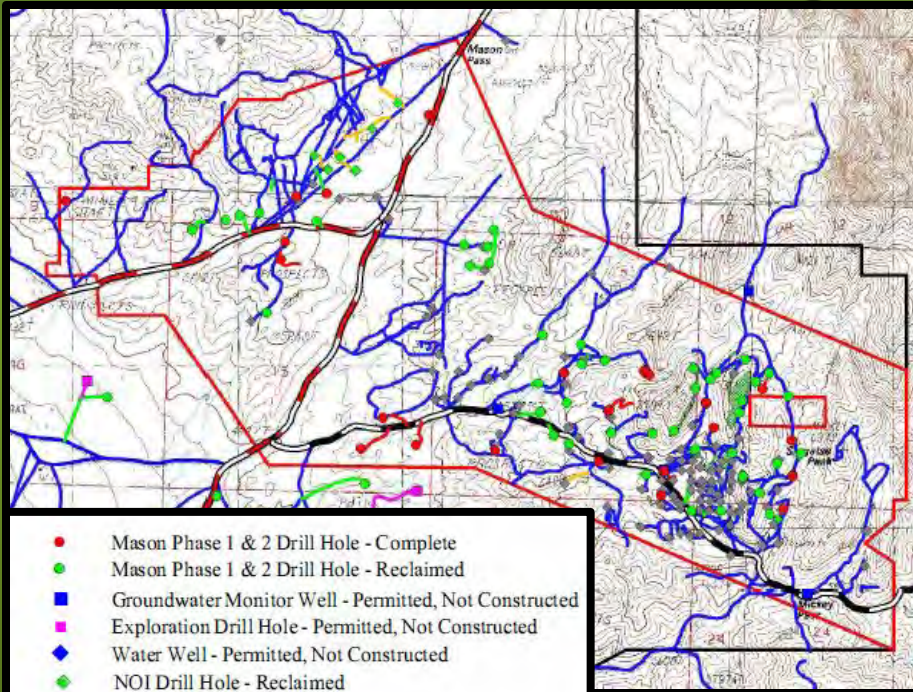
**Concurrent Exploration Reclamation**

**Letter of Recommendation From:**

**Matt Donaldson, NDEP-BMRR**



# Mason Resources: Mason Exploration Project



- Mason Phase 1 & 2 Drill Hole - Complete
- Mason Phase 1 & 2 Drill Hole - Reclaimed
- Groundwater Monitor Well - Permitted, Not Constructed
- Exploration Drill Hole - Permitted, Not Constructed
- ◆ Water Well - Permitted, Not Constructed
- ◆ NOI Drill Hole - Reclaimed
- ◆ NOI Drill Hole - Complete
- ◆ Drill Hole by Previous Operator - Pre-1981
- Roulette NOI Drill Site- Reclaimed
- Entree Phase 1 & 2 Access Road - Not Reclaimed
- Entree Access Road - Permitted, Not Constructed
- Entree Phase 1 & 2 Access Road - Reclaimed
- NOI Drill Road - Reclaimed
- Roulette NOI Access Road- Reclaimed
- County Road
- Existing Road
- Pre-1981 Road
- Ann Mason PoO Approved Area
- Pre-1981 Disturbance
- Ann Mason Project Land Outline

- Detailed maps
- Tracking of reclamation status
- Photo documentation

- Concurrent reclamation during 10+ years of the project's exploration has allowed it stay well below its permitted disturbance of 50 acres.

Disturbed and Reclaimed Acreage Summary Table

Effective Date	Bonded Acres Disturbed	Bonded Acres Reclaimed, but not released	Total Acres Released	Description
2010-Jan	4.9	0.0	0.0	Disturbed acres rolled over from previous NOI.
2011-Feb	8.7	0.0	0.0	Initial Plan Level Drilling related disturbance.
2012-Jun	5.8	12.9	0.0	New disturbances followed by first phase of major reclamation.
2013-Jun	7.5	12.9	0.0	New disturbances
2014-Jun	7.5	12.9	0.0	
				New disturbances in fall 2014. Some previously reclaimed sites were re-occupied.
2015-Jun	13.3	11.3	0.0	
2016-Jun	13.3	11.3	0.0	
2017-Jun	4.3	20.3	0.0	Major phase of reclamation in Fall 2016.
2017-Dec	5.1	12.8	7.7	7.7 acres related to 40 sites and associated roads released.
2018-Dec	5.1	12.8	7.7	
				Additional 10.2 acres released. New 2.3 acres of disturbances created and reclaimed in same year. Third phase of reclamation totalling 4.4 acres.
2019-Dec	2.9	7.0	17.9	



# Mason Resources: Mason Exploration Project

Examples of successful concurrent reclamation:

Site BH-10-006

Disturbed 2010

Reclaimed 2012

Released 2017





# Mason Resources: Mason Exploration Project

Example of successful concurrent reclamation:

Site AM-14-060

Disturbed 2014

Reclaimed 2016

Released 2019





# **Mason Resources:**

## **Mason Exploration Project - 2019 Activity**

**Drill site location (HBM-002)**



**Drill pad 2019 prior to reclamation**



**Post reclamation 2019  
(earthwork, scarification,  
and seeding)**

# Mason Resources:

## Mason Exploration Project – 2019 Activity

Drill site location (HBM-003)



Drill pad 2019 prior to reclamation



Post reclamation 2019  
(earthwork, scarification,  
and seeding)



# Mason Resources

## Mason Exploration Project

- This project exemplifies the best management practice of concurrent reclamation to minimize the environmental impacts associated with permitted surface disturbance.



# Accepting the 2020 award for **Mason Resources (US) Inc.:**



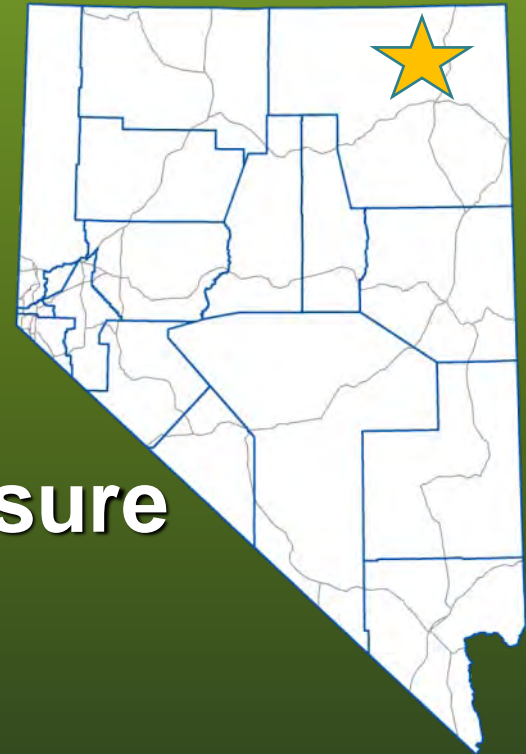
**Matthew  
Cunningham,  
Exploration  
Manager**



# 2021 Nevada Excellence in Mine Reclamation Award

**NOV Big Ledge Mine**  
West Waste Rock Facility  
Elko County

**Award Category:**  
**Innovative Reclamation and Closure**





# **NOV Big Ledge Mine**

## **West Waste Rock Facility (WWRF)**



- **1978 – 1983: barite mining activity, predates NV reclamation regulations**
- **2009: NOV becomes operator**
- **2016: acidic waters identified at the base of the WWRF**

**June 2013**

# **NOV Big Ledge Mine**

## **West Waste Rock Facility (WWRF)**



- In 2016 NOV:
  - Submitted Corrective Action Plan
  - Initiated temporary regrade from 1.5 to 2.5H:1V
  - Constructed monitor wells and implemented well and surface water sampling program



# NOV Big Ledge Mine

## West Waste Rock Facility (WWRF)

October 2018

- A lined catchment pond was constructed in 2018 to contain and control acid rock drainage

- Final regrade of the WWRF in 2019 from 2.5 to 3H:1V slope

July 2019





# NOV Big Ledge Mine

## West Waste Rock Facility (WWRF)



- 2.3M ft<sup>2</sup> of 80-mil AGRU Super Gripnet® liner, 16-oz protective geotextile and 2-foot rock cover, with 2 lbs/ton quicklime, installed in mid-2020



# NOV Big Ledge Mine

## West Waste Rock Facility (WWRF)



- 8,900 linear feet of stormwater channels (500yr,24hr event)
- Early adopter of Hydropur® instead of traditional rip-rap



# **NOV Big Ledge Mine**

## **West Waste Rock Facility (WWRF)**

**June 2021**



- **First of its kind for full encapsulation at high elevation**
- **Project is recommended as an example to other operators**

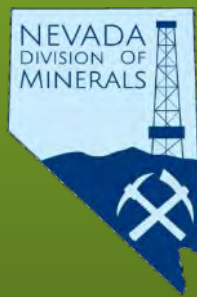
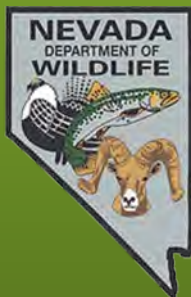
# Accepting the 2021 award for NOV:



- **Mike Creek,**  
Director,  
Mine Closure &  
Reclamation, NOV
- **Steve Boyce,**  
Technical Expert,  
Haley Aldrich
- **John Cooper,**  
Principal Engineer,  
SRK Consulting



**On behalf of the Awards Committee, thank you to  
all that submitted nominations and  
congratulations to our award winners.**



**Next year's submissions are due by July 8, 2022**