

HB In-Situ Solution Mine Project EIS



Overview and Impact Analysis

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Presentation Will Cover:

- NEPA Process
 - How, When
 - Public Input
 - Draft EIS Organization
- Draft Environmental Impact Statement
 - Background
 - Alternatives
 - Environmental Impacts

National Environmental Policy Act (NEPA)

Environmental Impact Statement Process

Publish Notice of Intent

Scoping Process

Publish Draft EIS

Public Review of Draft EIS

Publish Final EIS

30-Day Public Review

Record of Decision

30-Day Public Protest

 = Public Involvement Opportunities.

Public Review of Draft EIS

- Notice of Availability
- Purpose of the public review period
- Public Meetings
- Comments due to BLM by June 13th

Draft EIS Contents

- Purpose and Need
- Proposed Action (Project Description)
- Alternatives
- Affected Environment
- Environmental Consequences
- Mitigation Measures

The EIS Analysis

- **Purpose and Need**
- **Proposed Action (Project)**
- **Alternatives**
 - **Action Alternatives**
 - **No Action Alternative**
- **Affected Environment**
- **Environmental Consequences**

The EIS Analysis

- Purpose and Need
- Proposed Action (Project)
- Alternatives
- **Affected Environment**
- Environmental Consequences

The EIS Analysis

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Proposed Project Description

Project Background

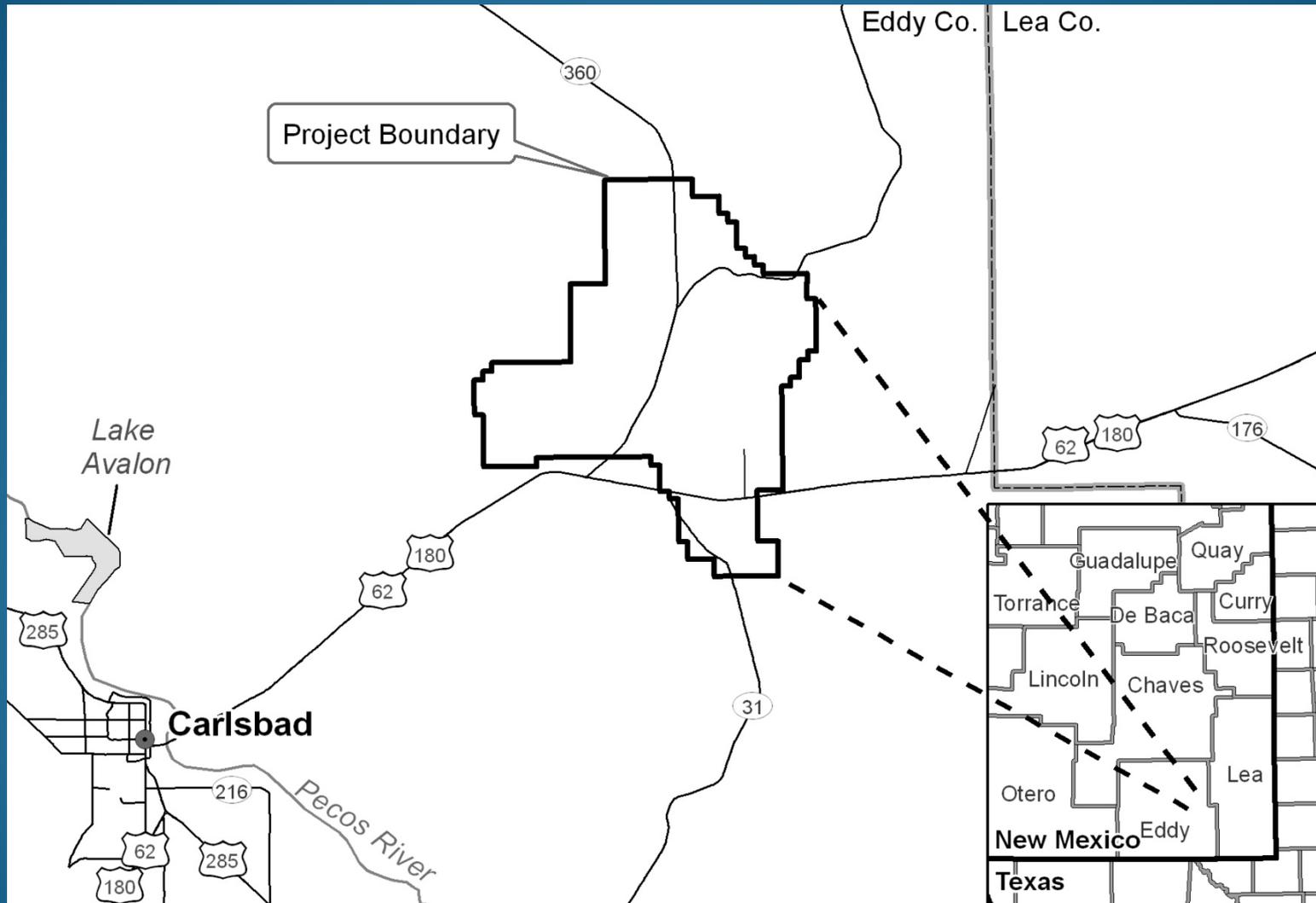
- HB Mine is the old PCA or Eddy Potash mine, inactive since 1997
- A combination of primary and secondary mining (room and pillar)
- Approximately 5-foot thick ore zone
- Approximately 30% of the potash remains in the inactive mine workings
- Solution mining is proposed as a way to extract more potash from otherwise inaccessible mines



Land Ownership and Acreage

- Surface Ownership in Project Area
 - 82% federal
 - 13% state
 - 5% private
- Relevant Project Acreage
 - Project area = 38,453 acres
 - Targeted open mine workings = 11,100 acres
 - Flooded areas with mine workings = 4,330 acres

Project Area



Solution Mining Process

- Pump water from wells in the Rustler or Caprock Formations
- Condition and inject saline water into existing inactive workings
- Extract of potassium-rich brine solution from flood pools in mine workings
- Transport brine solution to / from flood pools by pipelines (4" to 16" diameter)
- Mineral-rich brine piped to evaporation ponds to manage the stages of salt concentrations
- Potash crystals harvested from ponds as solids
- Potash transported to new HB Mill for processing
- Estimated project length 28 years

Environmental Impact Statement (EIS)

BLM Authorities

- Carlsbad Resource Management Plan and amendments
- Federal Land Policy and Management Act of 1976
- Mineral Leasing Act of 1920
- Mining and Minerals Policy Act of 1970
- Proposed project located within the Secretary's Potash Area, managed under 1986 Potash Order

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DEPARTMENT OF THE INTERIOR

Office of the Secretary

**Oil, Gas and Potash Leasing and
Development Within the Designated
Potash Area of Eddy and Lea
Counties, New Mexico**

Purpose and Need for Project

- Evaluate and respond to Intrepid's proposal
- Provide for technically viable development of potash resources, as required by federal law and federal leases
- Allow Intrepid to exercise its right to develop its leases

Decisions to be Made by BLM

- Whether to approve Intrepid's HB In-Situ Solution Mine Operation and Closure Plan, requested ROWs, and lease modifications. If approved, determine the terms and conditions.
- If in-situ solution mining is approved by the BLM, how to modify Intrepid's potash leases to be in compliance with the allowable acreage per 43 CFR §3503.37, as amended.

No Action Alternative

- No change from current operations; proposed project would not be approved
- Can be considered “future without the proposed project”

Alternative A

- Proposed Action—Intrepid's proposed project and Mine Plan of Operations would be approved
 - Surface pipelines with buried sections
 - Injection, extraction, and monitoring wells
 - Evaporation ponds
 - HB mill
- EIS Proposed Action is a slightly modified version of Intrepid's original proposal
 - 3 more Rustler wells (non-potable water) to increase water supply

Alternative B

- Similar facility layout within the project area
 - 3 northern Rustler wells were eliminated due to water quality concerns
- Intrepid's existing Caprock well fields (potable water) were added to supplement Rustler water

Alternative C

- Same as Alternative A but with a buried pipeline system

Differences between Alternatives

Component	Alternative A	Alternative B	Alternative C
Initial surface disturbance	980 acres	1,393 acres	Same as A
Long-term disturbance	822 acres	907 acres	Same as A
Total pipeline bundles	38 miles	37 miles *	Same as A
# Rustler wells	7	4	Same as A
Max. Rustler water used	2,000 gpm	770 gpm	Same as A
Max. Caprock water used	267 gpm	2,000 gpm	Same as A

* Excludes Caprock pipeline length (46 miles for new line, 66 miles for two existing lines)

Other Alternatives Considered

In response to scoping comments, other alternatives were considered.

- **Conventional Underground Mining of Remaining Reserves**
- **Solution Mining of Additional Potash-bearing Formations**
- **Smaller Flood Area**
- **Larger Flood Area**
- **Allow Expansion of Oil and Gas Development in the Project Area**

Potential Impacts

- Chapter 4 of the Draft EIS
- Analysis of potential impacts are presented for each resource that would be affected by the proposed project
- Analysis assumes compliance with the stated environmental protection measures and state and federal regulations
- Each section lists issues/concerns, methods of analysis, and assumptions

Environmental Protection Measures—All Alternatives

- Compliance with federal and state laws, regulations, policies, and permits
- BLM environmental requirements within Secretary's Potash Area, listed in detail in Appendix B
- Applicant-committed measures, including:
 - Groundwater monitoring
 - Subsidence monitoring
 - Regular pipeline inspections
 - Ponds lined to minimize leaks
 - Reclamation of all disturbed areas

Groundwater Models

- Primary purpose to estimate potential water availability and predict groundwater drawdown during pumping
- 2 models developed
 - Rustler model—numerical flow model of just the Rustler aquifers, 6 layers
 - Caprock model—analytic element model of the area around the Caprock well fields, 1 layer
- Rustler model has 2 versions, preferred and enhanced to reflect reported variability in rate water flows through formations (hydraulic conductivity)

Groundwater Models

- Initial results of Rustler model showed that not enough water would be available to meet the maximum pumping needs
- Added Caprock wells and separate model for Alternative B to ensure adequate water supply
- Alternative A models assume all water for flood pools comes from Rustler (non-potable due to salinity)
- Alternative B models evaluate different combinations of Rustler and Caprock water (potable) with most water for flood pools to come from Caprock

Impacts Common to All Action Alternatives

- **Subsidence:** Maximum potential subsidence = 0.6 ft near existing mine workings
- **Oil & Gas:** No change to access.
- **Visual Resources:** Slight to moderate modifications of the viewshed overall, primarily due to construction of evaporation ponds
- **Livestock Grazing:** Approx. 120 animal unit months lost due to surface disturbance, mostly on private land.
- **Recreation:** Minor potential effects on vehicle traffic during construction periods
- **Wildlife:** Adverse impacts to migratory birds may occur due from evaporation ponds without mitigation

Impacts That Differ by Action Alternative

Groundwater

Impact	Alternative A & C	Alternative B
Max. Seep/spring Reduction	64%	31%
Max. Nash Draw Flow Reduction	35%	25%
Max. Drawdown in Project Area	200 feet over 6,500 acres	Up to 200 feet * over 4,750 acres
Max. Drawdown in Caprock Area	8 feet	52 feet

* 0 feet drawdown if only Caprock water is used.

Impacts That Differ by Action Alternative

- **Caves:** Affected by groundwater drawdown if they currently have standing water
 - Alternatives A and C—up to 43 known caves
 - Alternative B—up to 38 caves
- **Vegetation:** Most affected is mesquite upland scrub vegetation type
 - Alternatives A and C—573 acres disturbed; up to 6,000 acres may be affected by drawdown
 - Alternative B—~700 acres disturbed; up to 3,200 acres may be affected by drawdown

Impacts That Differ by Action Alternative

- **Wildlife:**
 - Minor impacts to species movements due to surface pipelines under Alternatives A and B. No impact under Alternative C
 - Varying of groundwater drawdown would affect vegetation and habitat for wildlife
- **Special Status Species:**
 - Disruption of sand dune lizard habitat is likely to occur under Alternative B if the existing Caprock pipelines are excavated
 - Less disruption to sand dune lizard habitat if alternative Caprock pipeline were installed

Social and Economic

Impact	Alternative A*	Alternative B
# of employees	259 construction 36 operations	272 construction 36 operations
Population changes	210 construction 24 operations	221 construction 19 operations
Housing demands	128 units construction 24 operations	221 units construction 24 operations
Federal mineral royalties (annual)	\$2.3 to \$4.7 million	
Local property taxes (annual)	\$0.53 to \$1.05 million	Slightly higher
Environmental Justice	No disproportionate effects on minority and low income populations	

*Alternative C same as Alternative A for most items.

Guidelines for commenting

- Be familiar with the contents and organization of the Draft EIS
- Understand the agency's responsibilities
- Know that potential impacts to resources may be addressed in several sections as they could be interrelated
- Be specific and support your statements with explanations, details, facts.
- Note errors in the analysis, new information, areas where more clarification is needed, a substantially different alternative.

*Thank you for attending this
public meeting.*

We encourage you to ask questions about the proposed project, the projected environmental impacts, the Draft EIS, or the NEPA process.

There are BLM resource and NEPA specialists and AECOM NEPA specialists available to answer questions.

Please submit your written comments tonight, or by mail or e-mail (nmcfo_comments@blm.gov)

Comments due by June 13th.