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## **PUBLIC WORKS DEPARTMENT**

### CAMPBELL COUNTY PLANNING COMMISSION MEETING AGENDA

#### A. ROLL CALL

#### B. APPROVAL OF MINUTES

##### I. 11.16.23\_Minutes\_W\_Pre-Meeting Wrkshp

Documents:

[11.16.23\\_MINUTES\\_W\\_PRE-MEETING WRKSHP.PDF](#)

#### C. COMMUNICATION

#### D. PUBLIC HEARINGS

##### I. ENC 1\_Thunder Basin Zoning\_23.08.COZ\_FINAL\_MS.

Documents:

[ENC 1\\_THUNDER BASIN ZONING\\_23.08.COZ\\_FINAL\\_MS.PDF](#)

#### E. OLD BUSINESS

#### F. NEW BUSINESS

#### G. ADJOURNMENT



500 South Gillette Avenue  
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## DEPARTMENT OF PUBLIC WORKS

**November 16<sup>th</sup>, 2023**

### **PRE-MEETING WORKSHOP CAMPBELL COUNTY PLANNING COMMISSION**

The November 16<sup>th</sup>, 2023, pre-meeting workshop of the Campbell County Planning Commission (Commission) came to order at 6:05 p.m.

Commission Members in attendance: Chairman Kurt Siebenaler, Harry Averett, Bob Jordan, and Jack Clary. Vice-chairman Anna Land was absent. Staff present were Sam Proffer, Planner and Zoning Administrator, Clark Melinkovich, Senior Engineer and Planning Commission Recorder, and Wendy Balo, Public Works Financial Analyst

There was general discussion on buffering standards that may or may not apply to the evening's public hearing of the Red Tiger Simple Subdivision and zoning cases.

Mr. Proffer also gave a brief overview of the Anderson Simple Subdivision project under the Old Business portion of the evenings meeting. Mr. Proffer informed the Commissioners on some of the challenges involved with acquiring necessary access easements to the property.

No decisions on any agenda items were made. No official action was taken.

The workshop adjourned at 6:50 P.M.

Sam Proffer  
Planner and Zoning Administrator

MEMBERS PRESENT

Kurt Siebenaler, Chairman  
Harry Averett, Member  
Bob Jordan, Member  
Jack Clary, Member

MEMBERS ABSENT

Anna Land, Vice-chairman

STAFF MEMBERS PRESENT

Sam Proffer, Planner and Zoning Administrator  
Clark Melinkovich, Senior Engineer & County Recorder  
Wendy Balo, Public Works Financial Analyst

The meeting was brought to order at approximately 7:00 p.m. by Chairman Siebenaler.

**Roll Call:**

Chairman Siebenaler started the meeting with the roll call. Chairman Siebenaler asked Mr. Melinkovich to note for the record that Vice-chairman Land was absent.

**Approval of Minutes:**

Chairman Siebenaler asked if the Commissioners had read the October 16<sup>th</sup>, 2023 meeting minutes and asked if there were any changes or corrections that needed to be made. All affirmed that they had read the minutes and no changes were needed.

Chairman Siebenaler asked for a motion to approve the October 16<sup>th</sup>, 2023 minutes as submitted. Commissioner Jordan moved to approve, and Commissioner Averett seconded.

All voted aye. Motion carried.

**Communication:**

Jorgensen letter to the Commission regarding the Red Tiger Simple Sub and Zoning requests  
City email to staff regarding the Red Tiger Simple Sub and Zoning requests

**Public Hearings:**

**Case No. 23.05.CRSD  
Request**

**Red Tiger LLC Simple Subdivision**

Chairman Siebenaler asked Planner and Zoning Administrator Proffer to present the case.

Mr. Proffer presented the case by giving a brief overview of the location and size of the subdivision, advising the Commission that he would also include information on the Red Tiger zoning case since the two cases were dependent on one another. Mr. Proffer clarified that the land area for proposed Parcel 2 was already split-zoned with C-1 General Commercial and R-4 Residential, and that split zoning was no longer allowed and that the proposed parcel must receive only one zoning classification as a condition of subdivision approval.

Mr. Proffer then noted that the Simple Subdivision as presented met all Campbell County minimum standards, but that there was some concern from adjacent landowners regarding buffering requirements if the R-4 section were changed to C-1. Mr. Proffer then referred the Commission to the letter from the Jorgensen family asking the Commission to retain the R-4 classification. After brief discussion, Chairman Siebenaler asked if anyone in the audience wanted to speak.

Mr. Loren Crane, 2300 Antler Drive approached the Commission and spoke at length over his concerns about mitigating any negative impacts from new commercial development on the residences in adjacent Antelope Valley subdivision.

After additional discussion regarding buffering and how to address property owners' concerns, Mr. Proffer advised the Commission that the Simple Subdivision was one step in the process and that buffering standards would be better resolved with the zoning case.

After a brief general discussion, Chairman Siebenaler asked for a motion; Commissioner Averett moved to approve the Red Tiger LLC Simple Subdivision as submitted pending approval of the required zoning classification. It was seconded by Commissioner Jordan.

Chairman Siebenaler asked Senior Engineer Melinkovich to poll the Commissioners.

Voting was as follows:

Commissioner Averett:	Yes
Commissioner Jordan:	Yes
Commissioner Clary:	Yes
Chairman Siebenaler:	Yes

Motion passed 4-0.

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**Case No. 23.07.COZ  
Request**

**Red Tiger LLC Zoning**

Chairman Siebenaler asked Planner and Zoning Administrator Proffer to present the case.

Mr. Proffer again gave a brief overview of zoning requirements. He noted that only the proposed 27.19-acre parcel was required to be zoned, and that the remaining 162.79-acre tract of land was exempt from regulations and would remain as unzoned property.

Mr. Proffer explained that the property was within an area designated by the Comprehensive Plan's Long Range Planning map as being marked for commercial/residential development. Mr. Proffer noted that the City of Gillette was aware of the developers' intent and had no comment.

The Commission then heard additional comments from Mr. Loren Crane and from the applicant's agent, Mr. Cevin Imus with LSI Inc. The Commission took into consideration all the comments and discussed the various ways that buffering standards between the proposed parcel and the homes to the north in Antelope Valley Subdivision might be protected. After discussion, the Commission decided to require a 40' utility easement be recorded on the northern boundary of the subdivision that would prevent any structures from being built next to the homes.

Chairman Siebenaler asked for a motion; Commissioner Clary moved to approve the Red Tiger LLC Zoning Request of C-1 General Commercial with a 40' utility easement on the north boundary of Parcel 'A' to become effective upon recordation of the Red Tiger Simple Subdivision. Commissioner Averett seconded the motion.

Chairman Siebenaler asked Senior Engineer Melinkovich to poll the Commissioners.

Voting was as follows:

Commissioner Averett:	Yes
Commissioner Jordan:	Yes
Commissioner Clary:	Yes
Chairman Siebenaler:	Yes

Motion passed 4-0.

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**Case No. 23.06.COZ  
Rezoning Request**

**Centennial Subdivision**

Chairman Siebenaler asked Planner and Zoning Administrator Proffer to present the case.

Mr. Proffer explained that the Centennial Subdivision is a County owned and created subdivision that is currently zoned A-L Agricultural. He explained that the Board of Commissioners recently discussed disposing of unused County owned land, and that by changing the zoning classification of the selected lots to I-2 Heavy Industrial would make them more marketable as well as becoming consistent with adjoining I-2 Zoned land.

Mr. Proffer also noted that a small portion of land located at 7 Northern Drive, contiguous with the subdivision was also included in the proposal because the rest of 7 Northern Drive was already zoned I-2. Mr. Proffer advised the Commission that staff had received written approval from the landowner to have the small area changed. Chairman Siebenaler then opened the floor for public comment.

Mr. Jerry Means, owner of land contiguous with the Centennial Subdivision approached the Commission. Mr. Means acknowledged that the County owned lot adjacent to his land was not part of the proposal and that he was in favor of leaving that lot as A-L Agricultural.

After additional discussion, Chairman Siebenaler asked for a motion; Commissioner Averett moved to approve the Centennial Subdivision rezoning request; Commissioner Jordan seconded the motion.

Chairman Siebenaler asked Senior Engineer Melinkovich to poll the Commissioners.

Voting was as follows:

Commissioner Averett:	Yes
Commissioner Jordan:	Yes
Commissioner Clary:	Yes
Chairman Siebenaler:	Yes

Motion passed 4-0.

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**Old Business:  
23.03.CRSD**

**Anderson Simple Subdivision Case No.**

Chairman Siebenaler asked Planner and Zoning Administrator Proffer to inform the Commission of the updates on the Anderson Simple Subdivision.

Mr. Proffer gave a brief review of the case heard back at the July 2023 Planning Commission meeting. Mr. Proffer noted at that meeting the Commission recommended approval of the subdivision with the understanding that one of the Planning Considerations was to determine that there is an adequate access easement to the property.

Mr. Proffer informed the Commission that there is an existing 20' wide easement created by the now deceased landowner. The easement also traverses under Interstate 90, and there was originally some doubt regarding the continued use of the I-90 access point.

Mr. Proffer shared with the Commission written correspondence between the County and WYDOT affirming that the access could continue to be used. It was also determined that acquiring an additional 20' of width to add to the existing easement had not produced any results because of the problems of the now deceased landowner.

Staff made the recommendation to approve the subdivision with just the 20' easement in place. After some discussion Chairman Siebenaler asked for a voice vote of the Commissioners who were in favor of staff's recommendation. All voted 'aye', there were no 'nays'.

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Chairman Siebenaler then confirmed that there was no other business for the evening and no other comments and adjourned the meeting.

**Adjournment:** Meeting was adjourned at 8:17 pm

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Kurt Siebenaler, Chairman

NOTE: Campbell County Planning Commission meeting minutes contain a summary of discussions and are not intended to be verbatim.

# **ENCLOSURE 1**

**23.08.COZ**

**THUNDER BASIN LLC  
ZONING REQUEST**



500 South Gillette Avenue  
Suite 1500  
Gillette, Wyoming 82716  
(307) 682-1970  
(307) 687-6468 Fax



**Thunder Basin Coal Company LLC  
Zoning Request**

**Planning Commission Meeting**  
December 21<sup>st</sup>, 2023

**Board of Commissioners Meeting**  
January 16<sup>th</sup>, 2024 (Tentative)

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**Applicant:** Thunder Basin Coal Company LLC

**Case Number:** 23.08.COZ

**Agents:** Kasie Pickens, Coal Creek General Manager  
Keith Williams, President Arch Western Operations  
Jake Hahn, Coal Creek Production Superintendent

**Summary:** Thunder Basin Coal company owns and operates the approximately 11,500-acre Coal Creek coal mine. They have recently divided out 1,447.36 acres of land to be set aside for economic development. This is a new plan designed in conjunction with state, federal, and local governments to save valuable infrastructure such as roads, buildings, wells, rail spurs, etc., during the mandatory reclamation process. The goal is to repurpose this infrastructure into other industrial uses. The first step in the process is to receive a zoning classification and approval from the local authority having jurisdiction. The applicant is requesting a zoning classification of 'I-2', Heavy Industrial.

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**Legal Descriptions:** A tract located in the SW4SW4 Section 4, a portion of the SE4 Section 7, S2 Section 8, W2W2 Section 9, NE4 Section 17 and portions of the N2 and N2SW4 Section 18, T46N, R70W and the S2 Section 13, T46N, R71W, of the 6<sup>th</sup> P.M., Campbell County, WY

**Location:** Situs Addresses: 1280 T-7 Road, Gillette, WY 82718

**Current Zoning:** None

**Proposed Zoning:** 'I-2' Heavy Industrial

**Existing Land Use:** Coal Mining Operations

**Adjacent Land Use:** North: Unzoned Mixed Mining / Agricultural / Public Land  
South: Unzoned Mixed Mining / Agricultural / Public Land  
East: Unzoned Mixed Mining / Agricultural / Public Land  
West: Unzoned Mixed Mining / Agricultural

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**Exhibits:**

- Exhibit ‘A’ Application and Infrastructure List (pages 4-9)
- Exhibit ‘B’ Record of Survey with Easements and Legal Descriptions (pages 10-14)
- Exhibit ‘C’ Mine Site Plan (page 15)
- Exhibit ‘D’ Neighbor Letter and Mailing List (pages 16-22)
- Exhibit ‘E’ County Future Land Use Maps (pages 23-25)
- Exhibit ‘F’ Code of Federal Regulations Excerpt (pages 26-28)
- Exhibit ‘G’ Office of Economic Transformation Op-ed (pages 29-30)
- Exhibit ‘H’ Infrastructure Reuse Report Excerpt (pages 31-62)

**Findings of Fact:**

- The proposed zoning classification is in accordance with Chapter 7 Zoning Regulations Section 10.60 zoning approval requirements. It is compatible with the surrounding area and is not a detriment to the health, safety, and welfare of the County.
- The zoning request complies with the County Future Land Use Map.

**Zoning Summary:**

The current use of the unzoned property would be considered Heavy Industrial. Formally assigning the property with the I-2 Heavy Industrial zoning classification complies with all County requirements for the proposed location and is in keeping with good planning principles.

**Staff Recommendation:**

Staff recommends approval of the zoning request as submitted.

Exhibit 'A'  
Application and  
Infrastructure List  
(6 pages)

A-2



**Application for Zoning Amendment**

Permit Cost: \$200.00

Primary Code Reference: **Chapter 7, Sections 10.60 and 10.5**

**Applicant Information**

Name of Applicant: Thunder Basin Coal Company, L.L.C.	
Applicant Phone Number: 314-994-2958	Applicant Fax Number: 314-994-2940
Applicant Mailing Address: 1 CityPlace Drive Suite 300 St. Louis, MO 63141	
Applicant Email Address: dfinnerty@archrsc.com	
Relationship of Applicant to Property:	<input type="checkbox"/> Owner <input type="checkbox"/> Tenant <input type="checkbox"/> Lessee <input checked="" type="checkbox"/> Other
Name of Authorized Agent (if applicable):	
Agent Phone Number:	Agent Fax Number:
Agent Mailing Address:	
Agent Email:	

**Property and Use Information**

Property Address (if different from applicant): <sup>1280</sup> 1208 T-7 Road, Gillette WY 82718	
Current Zoning: Industrial / AG	Current Use: Mining / Grazing
Proposed Zoning: Heavy Industrial	Proposed Use: Heavy Industrial
Legal Description(s): See attached deed and plat	

**Project Information**

**Description of Amendment:** *Please describe your project/use in as much detail as you feel necessary. Use extra sheets if required.*

The purpose of this property is to create an industrial park that can be marketed as such. The property contains the vital infrastructure useful in attracting tenants for heavy industrial and commercial uses including power, sewer, building, roads, rail and right of ways. In addition to this infrastructure, the property includes adjoining undeveloped lands that could be used for new building construction or other unknown commercial activities that existing infrastructure could be extended to in the future.

It has been learned by past site selectors that having utilities to individual lots is not necessarily the best way to attract new users. Having utilities to the industrial park and having the flexibility to provide vacant land for "build as you need" and bring the existing utilities to that area is the better plan. This property is for non-mining use, which means the property in the boundary will not be mined. The coal coming into the property will be transported or processed, but no actual mining activities will occur inside the new property. This method has been proven in Campbell County with the Ft. Union Industrial Park to be a viable option for post mining use of lands. It has been very successful in attracting multiple tenants using the property and infrastructure for non-mining purposes. There are other examples of industrial parks in Wyoming and around the country that have proven this method of non-mining use.

If successful, utilizing the property and infrastructure as an industrial complex will be a higher and better use of this property once mining at Coal Creek ceases than spending dollars to tear down existing infrastructure.

<b>FOR USE BY COUNTY STAFF – DO NOT WRITE HERE</b>	
Case Name/No.: 23-08-COZ	Date Received: 11/9/23
Fee/Amount Paid: 200 <sup>00</sup>	
Planning Comm. Date:	PC Recommendation: <input type="checkbox"/> Approve <input type="checkbox"/> Modify <input type="checkbox"/> Deny
County Comm. Date:	CC Decision: <input type="checkbox"/> Approve <input type="checkbox"/> Deny
Chairman:	Date Signed:



The following items shall be submitted along with this application. Please review Chapter 7, Section 10.60 and/or Section 10.5 for the procedures and approvals required for a Zoning Amendment.

**Required Materials:**

- a) A written narrative indicating the requested change in designation and/or the modification of any zoning language, pursuant to the requirements of Section 10.60 or 10.5 and adequate to allow the County Commission to make the findings required by Section 10.60 or 10.5.
- b) A depiction of the subject property, showing all structures, landscaping, signage, fencing, road access, and other pertinent features, as well as all access points and adjacent roadways.
- c) The names, addresses, and phone numbers of all property owners within 1,000 feet of the subject property.

**Acknowledgement of Right to Appeal**

The Applicant herein, or his/her authorized Agent, hereby acknowledges that he/she has been advised of the fact that decisions by the County Commission cannot be administratively appealed and that any appeal must be brought before the District Court, according to the requirements of Section 10.70 of the Zoning Regulations.

Applicant Signature: Kate Will Authorized Agent: \_\_\_\_\_

**Agent Authorization and Request for Notification of Changes**

The applicant, if signed below, grants the above noted authorized agent the authority to act on the property owners behalf regarding all matters of this application. Please also check YES if the Applicant requests to receive correspondence from the Planning Division regarding any submittals received or changes made during this application.

Applicant Signature: Kate Will Date: 11-8-23

Yes, I request to receive notification of submittal changes made during the application review process.

Property information for the Coal Creek Heavy Industrial Complex

- Description of site
  - o **Coal Creek Mine**
  - o Contiguous Acres Available for Development
    - **1,400 total acres**
    - **400 acres developed with buildings, yards, tracks and road**
  - o Number of Lots and acreage sizes – **N/A (see above)**
- Building details
  - o Number of Buildings – **Four (4) plus two (2) silos**

**Maintenance Shop, Offices and Warehouse**

- o Type of building construction - **Steel**
- o Total sf – **46,200**
- o Office sf – **6,920**
- o Industrial sf – **39,280**
  - **Shop 24,160**
  - **WH 10,800**
  - **Light vehicle 4,320**
- o Ceiling Height – **60ft in shop; light vehicle 16 ft; WH 24 ft; offices 8' drop ceilings**
- o Floor Load Bearing Capacity – **48,000 PSI**
- o Floor Thickness – **12" with #4 rebar**
- o Drive-in doors, total number, and sizes
  - **8 doors – 32 x 29**
  - **3 doors – 14 x 12**
  - **4 doors – 10 x 12**
  - **1 door – 12 x 12**
  - **4 doors – 14 x 12**
  - **1 door – 12x 10**
- o Overhead cranes, number, capacity, - **one (1) @25 tons capacity**
- o Loading docks – **two (2)**
- o Heating / Cooling system – **Boiler to Forced Air/HVAC office area**
- o Networking – **Fiber, Wi-Fi, Ethernet**
- o Electrical connection size – **750 KCM**
  - **AMP – 1,200**
  - **Voltage – 480**
  - **Phase - 3Ø**
- o Year built - **1980**
- o Year of last major Renovation – **N/A**
- o Sprinkler system – **WH only**
- o Number of floors, floor sq, and use – **two (2) floors in office area; shop one (1) floor; WH one (1) floor**

### M&E Building

- Type of building construction - **Steel**
- Total sf – **13,000**
- Office sf – **3,480**
- Industrial sf – **9,570**
- Ceiling Height – **23' 8" in shop area; offices 8' drop ceiling**
- Floor Load Bearing Capacity – **48,000 PSI**
- Floor Thickness – **12" with #4 rebar**
- Drive-in doors, total number, and sizes
  - **3 doors – 12 x 10**
  - **1 door – 12 x 12**
  - **2 doors – 16 x12**
  - **1 door – 16 x 16**
- Overhead cranes, number, capacity, - **one (1) @10 tons capacity**
- Loading docks – **N/A**
- Heating / Cooling system – **Boiler for Heat and Electric A/C**
- Networking – **Fiber, Wi-Fi, Ethernet**
- Electrical connection size – **500 MCM**
- Year built - **1980**
- Year of last major Renovation – **N/A**
- Sprinkler system – **N/A**
- Number of floors, floor sq, and use – **two (2) floors in office area; shop one (1) floor;**

### Admin Building/Change House

- Type of building construction - **Steel**
- Total sf – **13,905**
- Office sf – **7,725**
- Industrial sf – **6,180 bath house**
- Ceiling Height – **15'8" in bath houses; offices 8' drop ceilings**
- Floor Load Bearing Capacity – **N/A**
- Floor Thickness – **6"**
- Drive-in doors, total number, and sizes
  - **1 door – 12x 8**
- Overhead cranes, number, capacity, - **N/A**
- Loading docks – **N/A**
- Heating / Cooling system – **Electric**
- Networking – **Fiber, Wi-Fi, Ethernet**
- Electrical connection size – **50 kVa 480V**
- Year built - **1981**
- Year of last major Renovation – **N/A**
- Sprinkler system – **N/A**
- Number of floors, floor sq, and use – **one (1) floor**

### Plant and Silos

- Type of building construction – **Concrete and Steel**
- Total sf – **Two (2) Silos each 3,846.5 sqft, 175 ft tall with a tonnage capacity of 12,000 each**
- Office sf – **1<sup>st</sup> floor – 2,284; 2<sup>nd</sup> floor - 340**
- Industrial sf – **See silo sizes above**
- Ceiling Height – **175 ft silos; offices 8' drop ceilings**
- Floor Load Bearing Capacity –
- Floor Thickness –
- Drive-in doors, total number, and sizes
  - **2 doors – 20 x 20**
- Overhead cranes, number, capacity, - **one (1) at top of each silo @ 10 tons**
- Loading docks – **N/A**
- Heating / Cooling system – **Gas boiler**
- Networking – **Fiber, Wi-Fi, Ethernet**
- Electrical connection size –
- Year built - **1981**
- Year of last major Renovation – **N/A**
- Sprinkler system – **N/A**
- Number of floors, floor sq, and use –**two floors of office space (see above); single level in each silo (see above); bin scales in each silo, elevators to gain access to silo top**

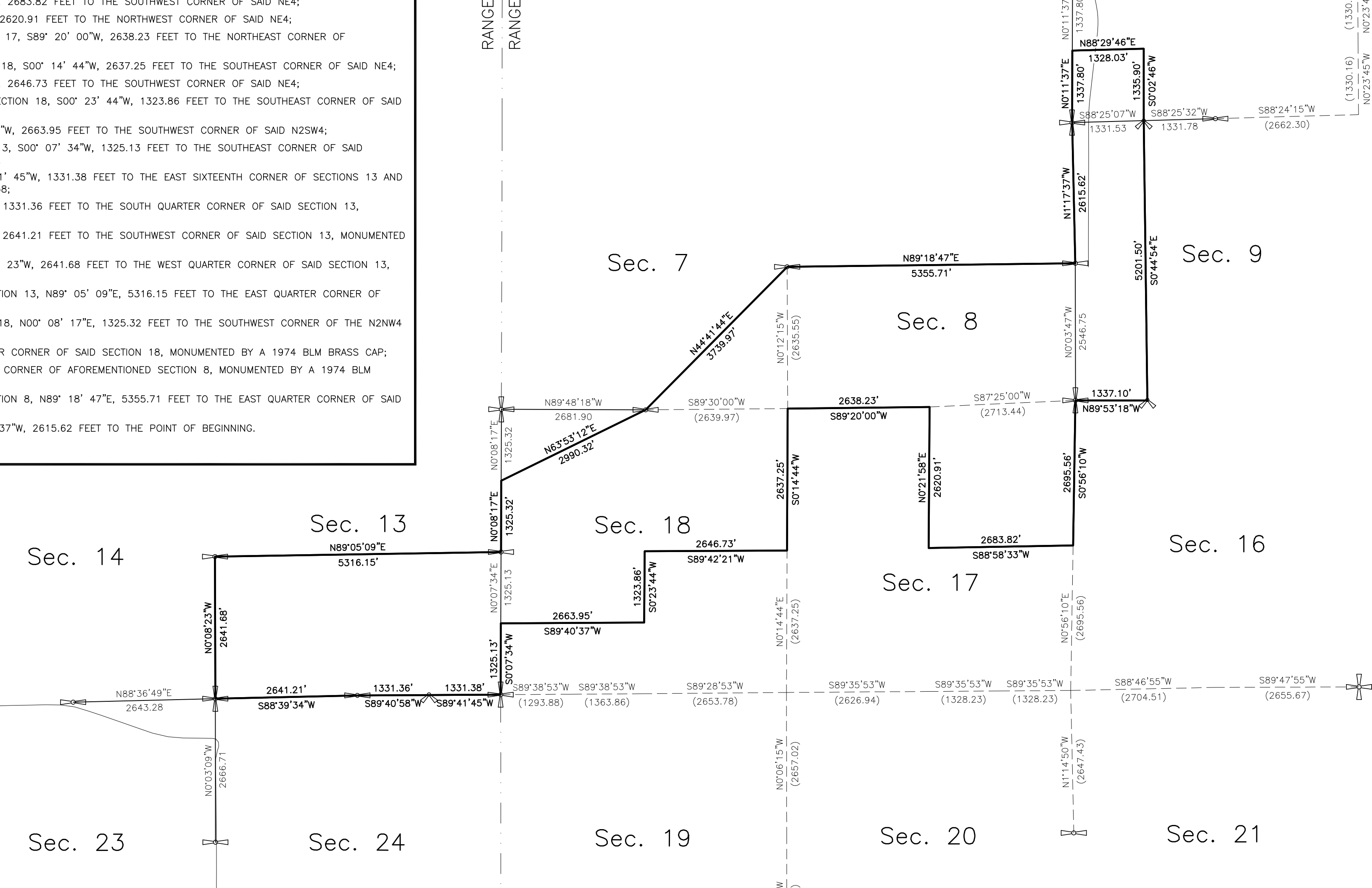
### Utility Building

- Type of building construction – **Concrete block and Steel**
- Total sf – **11,100**
- Office sf – **5,600**
- Industrial sf – **5,500**
- Ceiling Height – **24 ft Industrial; 8 ft in offices**
- Floor Load Bearing Capacity –
- Floor Thickness – **6"**
- Drive-in doors, total number, and sizes – **N/A**
- Overhead cranes, number, capacity - **N/A**
- Loading docks – **N/A**
- Heating / Cooling system – **Boiler heat; electric A/C**
- Networking – **Fiber, Wi-Fi, Ethernet**
- Electrical connection size –
- Year built - **1981**
- Year of last major Renovation – **N/A**
- Sprinkler system – **N/A**
- Number of floors, floor sq, and use –**two floor of office space – 1<sup>st</sup> floor 4,200; 2<sup>nd</sup> floor 1,400 (see above); single level in 5,500 sf of industrial space**

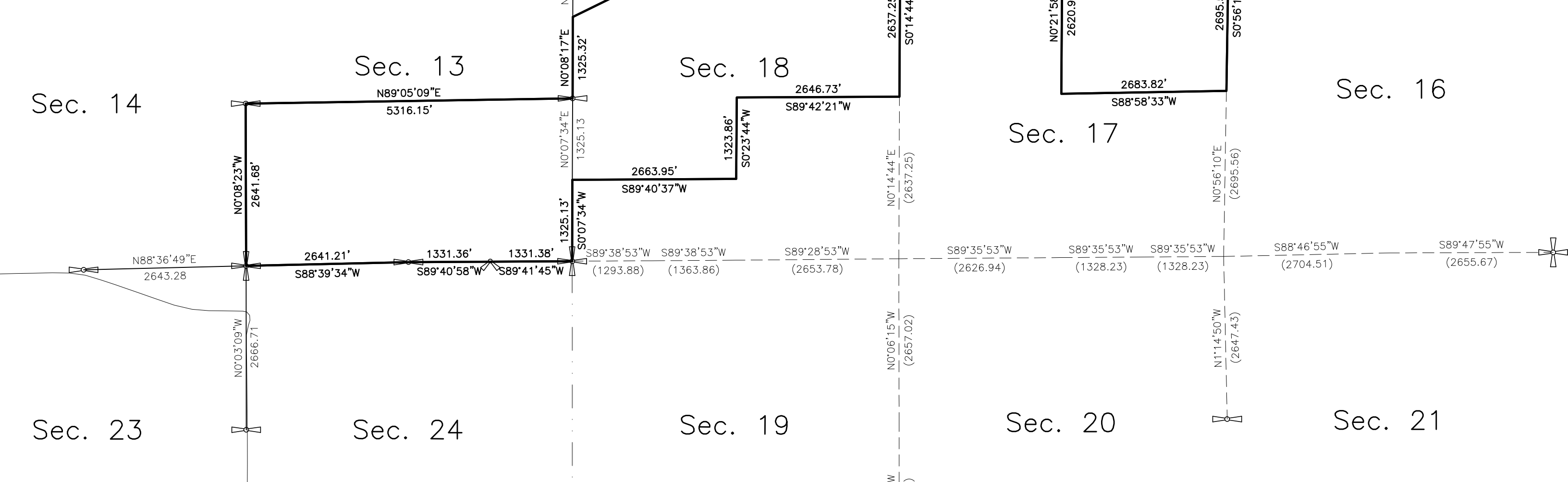
- Transportation information
  - o Roads
    - **6.1 miles paved road between County Road T-7 and Hoadley Road plus rocked around shops, facilities and yards**
  - o Rail, number of tracks – **6.65 miles of continuous loop track for access off and back on to BNSF/UP joint line plus lightweight track scale**
- Utilities
  - o Water - Size, gallons per minute on well
    - **1mm gallon holding pond**
    - **Deaver well – 100 gpm capacity**
    - **Deep well – 100 gpm capacity**
  - o Electrical –
    - **69kV with multiple substations 25kV, 8kV and 480 kV**
    - **Single metering point**
    - **Substation capacity to shop/plant**
    - **Substation capacity to pit**
  - o Natural Gas - Provider, Size of line – **N/A**
  - o Sewer - Size, total capacity
    - **Two (2) wastewater ponds operated in series totaling 11.6 acres with total capacity of 55.96 acre-ft**
    - **400 people max**
  - o Industrial Wastewater - Size, Max gallons – **N/A**
  - o Telecommunications - **fiber**
  - o Broadband copper - **fiber**
- Flood Plain – **Facility drains to sediment control ponds and then flows offsite**
- Zoning and other adjoining property zoning – **surrounding areas comprised of private landowners, WY State Lands and BLM controlled federal lands – can provide map of land ownership if requested.**
- Air Permit – **Two fugitive dust permits: MD-5393 for max production of coal up to 50mm tpy and MD-11300, for operation of the fogger systems at the truck dump/plant.**
- Contact person –
  - o **Jake Hahn, 307-464-2731; [JHahn@archrsc.com](mailto:JHahn@archrsc.com)**
  - o **Kasie Pickens, 307-464-2705; [KPickens@archrsc.com](mailto:KPickens@archrsc.com)**
- Coal Quality – BTU, Ash and other mineral content
  - o **Roland 1 Seam**
    - **8,325 BTU**
    - **5.97% Ash**
    - **30.6% Moisture**
    - **0.33% Sulfur**
  - o **Roland 3 Seam**
    - **8,000 BTU**
    - **7.50% Ash**
    - **31.75% Moisture**
    - **0.44% Sulfur**
- Remaining recoverable tons – **92mm**



2683.82 FEET TO THE SOUTHWEST CORNER OF SAID NE4;  
 2620.91 FEET TO THE NORTHWEST CORNER OF SAID NE4;  
 17, S89° 20' 00"W, 2638.23 FEET TO THE NORTHEAST CORNER OF  
 18, S00° 14' 44"W, 2637.25 FEET TO THE SOUTHEAST CORNER OF SAID NE4;  
 2646.73 FEET TO THE SOUTHWEST CORNER OF SAID NE4;  
 SECTION 18, S00° 23' 44"W, 1323.86 FEET TO THE SOUTHEAST CORNER OF SAID  
 "W, 2663.95 FEET TO THE SOUTHWEST CORNER OF SAID N2SW4;  
 3, S00° 07' 34"W, 1325.13 FEET TO THE SOUTHEAST CORNER OF SAID  
 1' 45"W, 1331.38 FEET TO THE EAST SIXTEENTH CORNER OF SECTIONS 13 AND  
 8;  
 1331.36 FEET TO THE SOUTH QUARTER CORNER OF SAID SECTION 13,  
 2641.21 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 13, MONUMENTED  
 23"W, 2641.68 FEET TO THE WEST QUARTER CORNER OF SAID SECTION 13,  
 SECTION 13, N89° 05' 09"E, 5316.15 FEET TO THE EAST QUARTER CORNER OF  
 18, N00° 08' 17"E, 1325.32 FEET TO THE SOUTHWEST CORNER OF THE N2NW4  
 R CORNER OF SAID SECTION 18, MONUMENTED BY A 1974 BLM BRASS CAP;  
 CORNER OF AFOREMENTIONED SECTION 8, MONUMENTED BY A 1974 BLM  
 SECTION 8, N89° 18' 47"E, 5355.71 FEET TO THE EAST QUARTER CORNER OF SAID  
 37"W, 2615.62 FEET TO THE POINT OF BEGINNING.



2683.82 FEET TO THE SOUTHWEST CORNER OF SAID NE4;  
 2620.91 FEET TO THE NORTHWEST CORNER OF SAID NE4;  
 17, S89° 20' 00"W, 2638.23 FEET TO THE NORTHEAST CORNER OF  
 18, S00° 14' 44"W, 2637.25 FEET TO THE SOUTHEAST CORNER OF SAID NE4;  
 2646.73 FEET TO THE SOUTHWEST CORNER OF SAID NE4;  
 SECTION 18, S00° 23' 44"W, 1323.86 FEET TO THE SOUTHEAST CORNER OF SAID  
 "W, 2663.95 FEET TO THE SOUTHWEST CORNER OF SAID N2SW4;  
 3, S00° 07' 34"W, 1325.13 FEET TO THE SOUTHEAST CORNER OF SAID  
 1' 45"W, 1331.38 FEET TO THE EAST SIXTEENTH CORNER OF SECTIONS 13 AND  
 8;  
 1331.36 FEET TO THE SOUTH QUARTER CORNER OF SAID SECTION 13,  
 2641.21 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 13, MONUMENTED  
 23"W, 2641.68 FEET TO THE WEST QUARTER CORNER OF SAID SECTION 13,  
 SECTION 13, N89° 05' 09"E, 5316.15 FEET TO THE EAST QUARTER CORNER OF  
 18, N00° 08' 17"E, 1325.32 FEET TO THE SOUTHWEST CORNER OF THE N2NW4  
 R CORNER OF SAID SECTION 18, MONUMENTED BY A 1974 BLM BRASS CAP;  
 CORNER OF AFOREMENTIONED SECTION 8, MONUMENTED BY A 1974 BLM  
 SECTION 8, N89° 18' 47"E, 5355.71 FEET TO THE EAST QUARTER CORNER OF SAID  
 37"W, 2615.62 FEET TO THE POINT OF BEGINNING.



**Coal Creek Mine Rezoning  
Legal Description  
September 15, 2023**

A tract located in the SW4SW4 Section 4, a portion of the SE4 Section 7, S2 Section 8, W2W2 Section 9, NE4 Section 17 and portions of the N2 and N2SW4 Section 18, T46N, R70W and the S2 Section 13, T46N, R71W, of the 6th P.M., Campbell County, Wyoming, being more particularly described as follows:

Commencing at the southwest corner of said Section 4, monumented by a brass cap stamped LS 529 and being the point of beginning;

Thence along the west line of said Section 4, N00° 11' 37"E, 1337.80 feet to the northwest corner of aforementioned SW4SW4 Section 4;

Thence along the north line of said SW4SW4, N88° 29' 46"E, 1328.03 feet to the northeast corner of said SW4SW4;

Thence along the east line of said SW4SW4, S00° 02' 46"W, 1335.90 feet to the west sixteenth corner of Sections 4 and 9, monumented by a 1974 BLM brass cap;

Thence along the east line of aforementioned W2W2 Section 9, S00° 44' 54"E, 5201.50 feet to the west sixteenth corner of Sections 9 and 16, monumented by a 1974 BLM brass cap;

Thence along the south line of said Section 9, N89° 53' 18"W, 1337.10 feet to the southwest corner of said Section 9, monumented by a brass cap stamped LS 529;

Thence along the east line of aforementioned NE4 Section 17, S00° 56' 10"W, 2695.56 feet to the southeast corner of said NE4;

Thence along the south line of said NE4, S88° 58' 33"W, 2683.82 feet to the southwest corner of said NE4;

Thence along the west line of said NE4, N00° 21' 58"E, 2620.91 feet to the northwest corner of said NE4;

Thence along the north line of aforementioned Section 17, S89° 20' 00"W, 2638.23 feet to the northeast corner of aforementioned Section 18;

Thence along the east line of the NE4 of said Section 18, S00° 14' 44"W, 2637.25 feet to the southeast corner of said NE4;

Thence along the south line of said NE4, S89° 42' 21"W, 2646.73 feet to the southwest corner of said NE4;

Thence along the east line of aforementioned N2SW4 Section 18, S00° 23' 44"W, 1323.86 feet to the southeast corner of said N2SW4;

Thence along the south line of said N2SW4, S89° 40' 37"W, 2663.95 feet to the southwest corner of said N2SW4;

Thence along the east line of aforementioned Section 13, S00° 07' 34"W, 1325.13 feet to the southeast corner of said Section 13, monumented by a brass cap stamped LS 529;

Thence along the south line of said Section 13, S89° 41' 45"W, 1331.38 feet to the east sixteenth corner of Sections 13 and 24, monumented by a 1990 aluminum cap stamped PLS 538;

Thence continuing along said south line, S89° 40' 58"W, 1331.36 feet to the south quarter corner of said Section 13, monumented by a 1984 BLM brass cap;

Thence continuing along said south line, S88° 39' 34"W, 2641.21 feet to the southwest corner of said Section 13, monumented by a 1984 BLM brass cap;

Thence along the west line of said Section 13, N00° 08' 23"W, 2641.68 feet to the west quarter corner of said Section 13, monumented by a 1984 BLM brass cap;

Thence along the north line of aforementioned S2 Section 13, N89° 05' 09"E, 5316.15 feet to the east quarter corner of said Section 13, monumented by a 1974 BLM brass cap;

Thence along the west line of aforementioned Section 18, N00° 08' 17"E, 1325.32 feet to the southwest corner of the N2NW4 of said Section 18;

Thence N63° 53' 12"E, 2990.32 feet to the north quarter corner of said Section 18, monumented by a 1974 BLM brass cap;

Thence  $N44^{\circ} 41' 44''E$ , 3739.97 feet to the west quarter corner of aforementioned Section 8, monumented by a 1974 BLM brass cap;

Thence along the north line of aforementioned S2 Section 8,  $N89^{\circ} 18' 47''E$ , 5355.71 feet to the east quarter corner of said Section 8, monumented by a brass cap stamped LS 529;

Thence along the east line of said Section 8,  $N01^{\circ} 17' 37''W$ , 2615.62 feet to the point of beginning.

Said tract contains 1447.356 acres more or less.

The basis of bearing for this legal description is Wyoming State Plane Grid, NAD83, East Zone (4901).

**Coal Creek - Road Easement  
Legal Description  
September 15, 2023**

A 66 foot wide road easement located in the NW4NW4 of Section 24, T46N, R71W, of the 6th P.M., Campbell County, Wyoming, the westerly sideline being more particularly described as follows:

Commencing at the northwest section corner of said Section 24, monumented by a 1984 BLM brass cap and being the point of beginning;

Thence along the west line of said Section 24, S00° 03' 09"E, 1333.355 feet to the point of termination, from which the west quarter corner lies S00° 03' 09"E, 1333.355 feet, monumented by a 1984 BLM brass cap.

The sidelines of said road easement are to be shortened or extended to prevent gaps and overlaps.

Said road easement length is 1333.355 feet more or less.

The basis of bearing for this legal description is Wyoming State Plane Grid, NAD83, East Zone (4901).

**Coal Creek – T-7 Road Centerline  
Legal Description  
September 15, 2023**

A road located in portions the NW4SW4 and SW4NW4 of Section 4, T46N, R70W, of the 6th P.M., Campbell County, Wyoming, the centerline being more particularly described as follows:

Commencing at the west quarter corner of said Section 4, monumented by a 1974 BLM brass cap;

Thence along the west line of said Section 4,  $N00^{\circ} 10' 33''E$ , 256.05 to the point of beginning of aforementioned centerline;

Thence along said centerline,  $S57^{\circ} 19' 13''E$ , 100.99 feet to the beginning of a non-tangent circular curve to the right;

Thence continuing along said centerline, through said curve with a length of 430.49 feet, a radius of 617.19 feet, a delta angle of  $39^{\circ} 57' 49''$ , a chord length of 421.81 and a chord bearing  $S37^{\circ} 19' 22''E$ ;

Thence continuing along said centerline,  $S17^{\circ} 17' 45''E$ , 201.41 feet to the beginning of a non-tangent circular curve to the right;

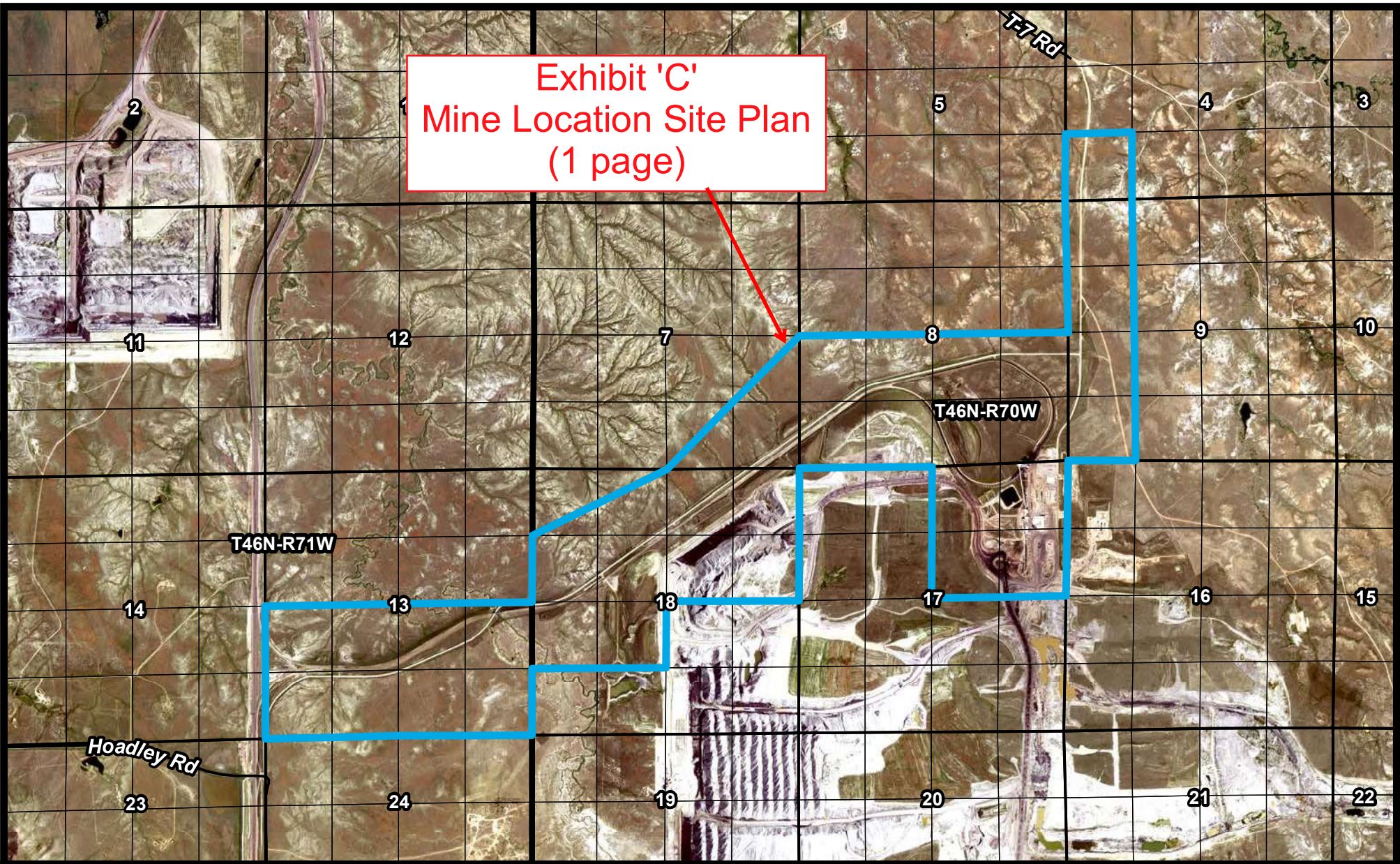
Thence continuing along said centerline, through said curve with a length of 626.13 feet, a radius of 1661.24 feet, a delta angle of  $21^{\circ} 35' 42''$ , a chord length of 622.43 and a chord bearing  $S05^{\circ} 59' 33''E$ ;

Thence continuing along said centerline,  $S06^{\circ} 17' 57''W$ , 383.60 feet to a point on the south line of aforementioned NW4SW4 and being the point of termination, from which the south sixteenth corner of Sections 4 and 5 lies  $S88^{\circ} 29' 46''W$ , 428.98 feet.

Said road centerline length is 1742.62 feet more or less.

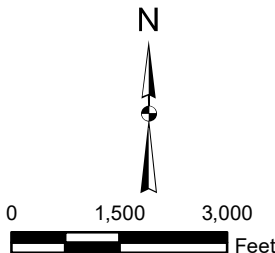
The basis of bearing for this legal description is Wyoming State Plane Grid, NAD83, East Zone (4901).

Exhibit 'C'  
Mine Location Site Plan  
(1 page)



**Legend**

 AREA OF INTEREST



CAMPBELL COUNTY  
DEPARTMENT OF PUBLIC WORKS  
500 S. Gillette Ave. Gillette, Wyoming 82716  
Phone # 307 685-8061  
Fax # 307 687-6349

THUNDER BASIN  
SITE PLAN



**DEPARTMENT OF PUBLIC WORKS**  
**Building & Planning Division**  
500 S. Gillette Avenue, Suite 1500  
Gillette Wyoming 82716  
Phone 307-682-1970 Fax 307-687-6468

November 21, 2023

**Re:** Thunder Basin Coal Company LLC / Zoning Request

**Legal Description:** A tract located in the SW4SW4 Section 4, a portion of the SE4 Section 7, S2 Section 8, W2W2 Section 9, NE4 Section 17 and portions of the N2 and N2SW4 Section 18, T46N, R70W and the S2 Section 13, T46N, R71W, of the 6<sup>th</sup> P.M., Campbell County, Wyoming

**Situs Address:** 1270 T-7 Road, Gillette, WY

Dear Neighboring Landowner:

I would like to inform you of a proposed Zoning request in your area. The applicant has requested to receive a Zoning Classification of 'I-2' Heavy Industrial for the above-mentioned unzoned property.

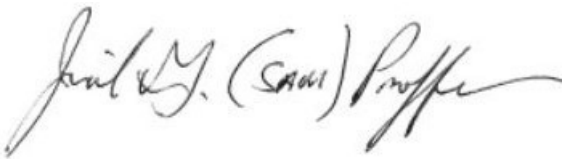
The attached aerial photo shows the approximately 1,447-acre proposed project location highlighted in blue. A copy of the 'I-2' Zoning District Use Chart is enclosed for review. If you should have any concerns or comments, you are invited to attend the following public hearing:

The County Planning Commission will review the Zoning request at their meeting on Thursday, December 21, 2023 at 7 p.m. in the Commissioners' Chambers of the Courthouse, 500 South Gillette Avenue, Gillette, Wyoming.

If you are unable to attend the meeting and have any comments regarding this request, you may send a signed letter or fax to this office, and it will be forwarded to the Commissioners on your behalf.

Please do not hesitate to contact us at 682-1970 if you have any questions.

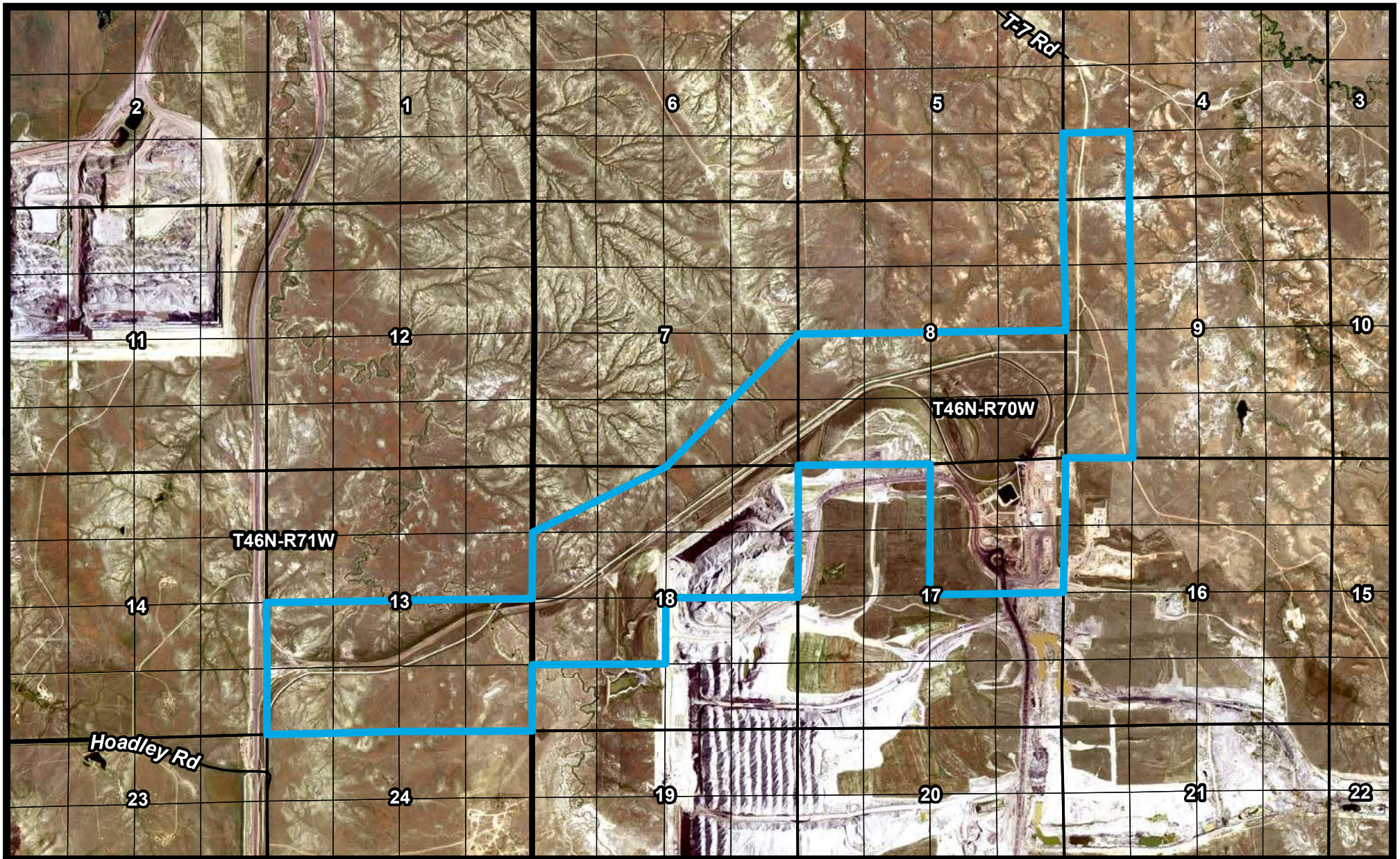
Sincerely,



Sam Proffer  
Planner and Zoning Administrator

Cc: File, Rusty Bell

Enclosures (3 pgs.): Aerial Map, I-2 District Use Chart



**Legend**

 AREA OF INTEREST



N



0 1,500 3,000  
Feet

CAMPBELL COUNTY  
DEPARTMENT OF PUBLIC WORKS  
500 S. Gillette Ave. Gillette, Wyoming 82716  
Phone # 307 685-8061  
Fax # 307 687-6349

**THUNDER BASIN  
SITE PLAN**



**Section 30. Industrial Zoning Districts**

**30.5 Purpose**

Industrial districts provide for land use compatibility while providing a high-quality environment for businesses and employees. The districts are also intended to provide suitable locations for heavy industrial uses (e.g., raw materials processing; and manufacturing, assembly, packaging, or distribution of heavy or large goods) that would not otherwise be compatible in other districts. This section guides the orderly development of industrial areas based on the following objectives:

- (1) Provide for efficient use of land and public services;
- (2) Provide appropriately zoned land with a range of parcel sizes for industry;
- (3) Provide transportation options for employees and customers;
- (4) Locate business services close to major employment centers;
- (5) Ensure compatibility between industrial uses and nearby commercial areas;
- (6) Provide appropriate design standards to accommodate a range of industrial users;
- (7) Provide attractive locations for businesses to locate; and
- (8) Accommodate mixed-use development of light industrial areas.



**30.10 Industrial Zoning District Regulations**



The following descriptions of each industrial zoning district identify the characteristic uses and level of development intended for each district.

- (1) **I-1 Light Industrial District.** Allows for wholesale and warehousing uses, as well as those industrial uses that include fabrication, manufacturing, assembly or processing of materials that are refined in form. Uses in this district do not require intensive land coverage; generate large volumes of vehicular traffic; or create obnoxious sounds, glare, dust, or odors that are offensive when measured at the property line of the subject property.
- (2) **I-2 Heavy Industrial District.** Allows for basic or primary industries that are more intense than I-1 and which are generally not compatible with residential and/or commercial activity.

**30.15 Industrial Use District Charts**

The following Use District Charts contain the basic zoning regulations that apply to property located within Industrial Zoning Districts. Use these charts by reading down the left-hand column entitled "Use." Once you locate the use in which you are interested, read across to find the regulations that apply to that use.

Use District Chart  
District I-2

USE 	REGULATIONS 	I-2 District							
		DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS							
		Review Process (see Table 10.10-1)	MINIMUMS			MAXIMUMS		Sign Category (See Section 40.25)	Special Use Regulations (See Section 45)
			Lot Size = No Minimum Lot Width = None			Lot Coverage (percent)	Height of Structure (feet)		
REQUIRED YARD SETBACK									
		Front (feet)	Side (feet)	Rear (feet)					
<b>Agricultural and Natural Resource Uses</b>									
Mineral Extraction	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	75 <sup>1</sup>	D		
Stable/Kennel <sup>2</sup>	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Veterinary Clinic or Animal Hospital <sup>2</sup>	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	75 <sup>1</sup>	D		
<b>Residential Uses<sup>7</sup></b>									
Caretaker Housing	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	None	45.20	
Residential Re-Entry/Halfway House	3	25	5 <sup>7</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	None		
Construction Camps <sup>8</sup>	4	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	None	45.40	
Live/Work Facilities	5	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	None	42.15	
<b>Commercial and Service Uses</b>									
Armory	2	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	C		
Commercial Storage Facility	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	D		
Lumber Yard and Building Material Sales and Storage <sup>3</sup>	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Machinery and Implement Sales, Service, Repairs and Storage	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Vehicle Fueling and Service Station	3	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	C	45.60	
Vehicle Parking and Storage	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	C		
Warehouse	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	D		
<b>Industrial Uses</b>									
All Industrial Uses, except as otherwise mentioned.	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	C		
Bulk Plant, Gasoline, or LP Gas, Above Ground Storage	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	E		
Contractors Yard for Vehicles, Equipment, Supplies	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Explosives Manufacturing	4	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Heavy Equipment Sales, Service, and Repair	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Junk Yard, Auto Wrecking, Scrap Processing	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		

USE ↓	REGULATIONS →	I-2 District							
		DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS							
		Review Process (see Table 10.10-1)	MINIMUMS			MAXIMUMS		Sign Category (See Section 40.25)	Special Use Regulations (See Section 45)
			Lot Size = No Minimum Lot Width = None			Lot Coverage (percent)	Height of Structure (feet)		
REQUIRED YARD SETBACK									
Front (feet)	Side (feet)	Rear (feet)							
Manufacturing, Light <sup>4</sup>	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Manufacturing, Heavy	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	D		
Oil and Gas Above or Underground Storage Facility	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	C		
Oil Field Supply Sales and Service	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	D		
Oil, Gas, or Mineral Processing, Refining, Separation, or Storage	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	75 <sup>1</sup>	C		
Printing and Publishing	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	C		
Quarry	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	75 <sup>1</sup>	D		
Railroad Facility (Including Terminals, Shop, Yard)	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	C		
Soils Conditioning, Storage, and Sales	3	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
Warehouse/Freight Movement	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	50 <sup>1</sup>	D		
Sanitary Landfill (Governmental)	3	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	50 <sup>1</sup>	D		
<b>Community and Government Services</b>									
Institutional or Government Facility, including Police Firing Ranges	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	75 <sup>1</sup>	D		
<b>Utilities, Transportation, and Communications</b>									
Airport or Heliport	4	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	100 <sup>1</sup>	D	45-33	
Public Utility Facilities and Infrastructure	1	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	90	100 <sup>1</sup>	D	45-55	
Wind Power Generation	4	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	100 <sup>1</sup>	D	32	
Wireless Communication Facilities <sup>6</sup>	3	25 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup>	85	100 <sup>1</sup>	B	45-55	

Special Regulations. The following special regulations apply to individual land uses as designated in the Use District Chart above. Additional regulations and requirements may be found in General Regulations, Section 1.5, and Parking Requirements, Section 40.10.

- (1) Church spires, church towers, chimneys, flagpoles, antennas, monuments, water towers and fire towers are exempt from height limitations. Please see Section 32 for height restrictions for Wind Power Generation facilities.
- (2) All animal runs and pens, except horse stables, must be completely enclosed within a building.

- (3) Not including ready-mix concrete and asphalt.
- (4) Including bottling, electronics, jewelry, metal craft, monument, carpentry and cabinet works, and plastics.
- (5) If the property abuts a residential zone or use, then the following setbacks apply: front: 25 feet; side: 25 feet; rear: 25 feet.
- (6) If the applicant wishes to increase the height of the tower beyond the stated maximum, the review process shall be a Review Process 4.
- (7) All residential uses that are adjacent to a mineral extraction use or an intensive agricultural activity shall maintain a 100-foot setback between the use and the shared property line.
- (8) Construction camps shall only be provided for the business owner(s) or employees of the subject site's primary business use.
- (9) It should be noted that placement of the I-2 district adjacent to residential uses or Zoning Districts may be restricted.

<b>Owner</b>	<b>Address</b>	<b>Phone</b>
NAVAJO TRANSITIONAL ENERGY COMPANY LLC	PO BOX 3001 GILLETTE, WY 82717-3001	307-682-8005
THUNDER BASIN COAL COMPANY LLC	1 CITYPLACE DR STE 300 SAINT LOUIS, MO 63141-7066	314-994-2700
HAYDEN TONY S	1127 T-7 RD GILLETTE, WY 82718-9233	307-682-3888
DEPT OF INTERIOR/BLM	PO BOX 1828 CHEYENNE, WY 82002-0001	307-775-6256
MOORE DALENE ELIZABETH	320 MOORE RD UNIT A GILLETTE, WY 82718-9259	307-939-1253
STATE OF WYOMING	122 W 25TH ST CHEYENNE, WY 82001-3004	307-777-7331
EDWARDS ORIN R	2098 HILIGHT RD GILLETTE, WY 82718-9214	307-939-1262
BNSF RAILWAY COMPANY	2500 LOU MENK DRIVE AOB-3 FORT WORTH, TX 76131-2828	888-428-2673

plans supplement CCEDC and NEWEDC's efforts with future land use planning that identifies locations for business and industrial growth.

While this Plan sets out goals and objectives that serve as a general guide for future decisions, it also contains several specific work tasks that are designed to follow up the goals with actions. These tasks can be included in the work plans of staff members and commissions to implement the plan.

In understanding this plan, it also is important to state what this plan is not; it is not an ordinance, regulation or law. Sometimes, regulations and laws can be adopted to implement a goal in a comprehensive plan, but the adoption of such rules is another step that goes beyond a comprehensive plan. This plan serves as a policy guide and not a rule, regulation or law.

## The Vision for the Future

This summary concludes with the Campbell County Vision Statement that was formulated by the Citizen Advisory Committee, Planning and Zoning Division staff and the planning consultant team and was reviewed with the County's citizens at four open house meetings. The "Vision Statement" is the formal expression of what the County is striving to become and serves as the starting point for the creation of the comprehensive plan.

The Campbell County Comprehensive Plan's Vision Statement is:

*Promote orderly, attractive growth that sustains the community's economic prosperity, supports energy development and preserves the county's rural character*

*The most cost effective growth and development in Campbell County will be near future sewer and water lines, roads, and other infrastructure. Good development also fits in with existing neighborhoods, offers amenities for the people who live or work here, and meets the housing, recreation, and employment needs of Campbell County citizens. The County has a long history of ranching and mining, and by keeping them both viable, the County's character will be maintained.*

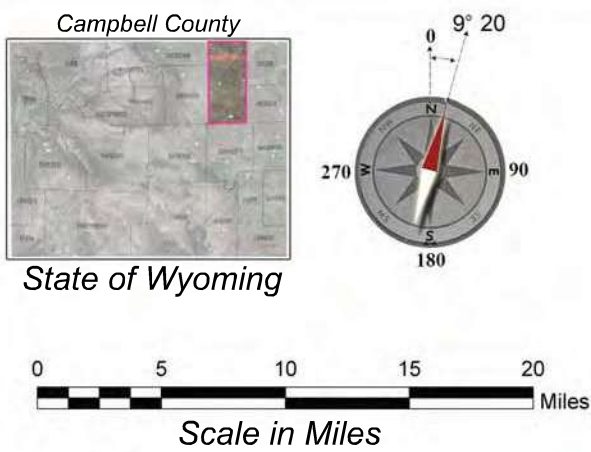
# Coal Mines

## Coal Mine Map

There are 13 active coal mines in the Wyoming portion of the Powder River Basin. These mines produced 426 million short tons in 2011. Coal mines in the Powder River Basin in Wyoming employed over 6,800 personnel in 2008.

Name	Acres
ANTELOPE MINE	920
CABALLO	19976
CABALLO-BELLE AYR	1092
JACOBS RANCH MINE	16188
BLACK THUNDER MINE	27224
NORTH ROCHELLE MINE	5092
BLACK THUNDER-NORTH ROCHELLE	1974
BLACK THUNDER - JACOBS RANCH	2724
BUCKSKIN MINE	8284
NORTH ANTELOPE ROCHELLE MINE	46016
COAL CREEK MINE	6854
DRY FORK MINE	3810
EAGLE BUTTE MINE	10344
SCHOOL CREEK MINE	23040
*WYODAK - ESTIMATE ONLY	3874
*CORDERO ROJO - ESTIMATE ONLY	15606
BELLE AYR	11896
RAWHIDE MINE	8890

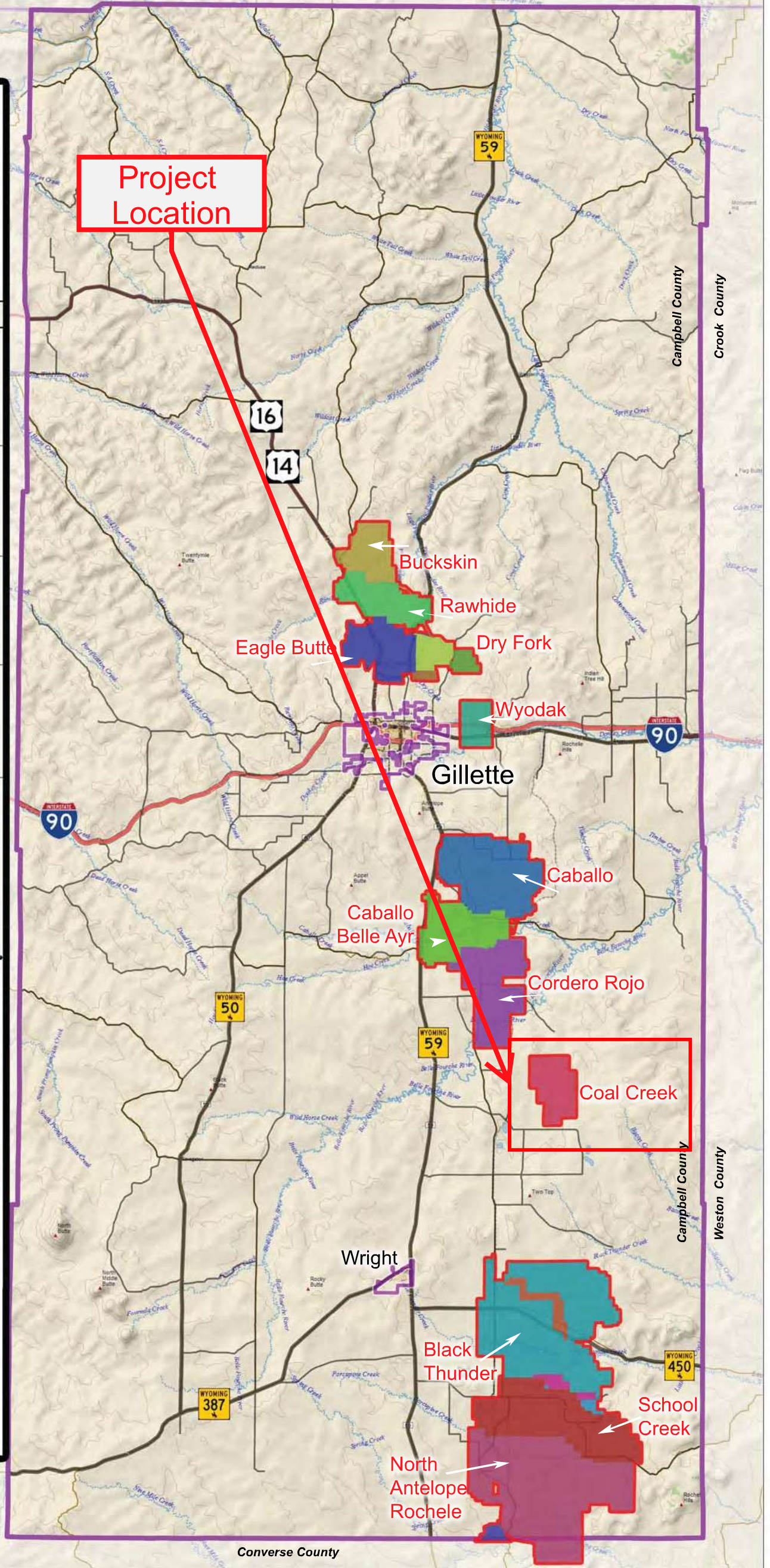
\* Estimate Only. No Map Provided

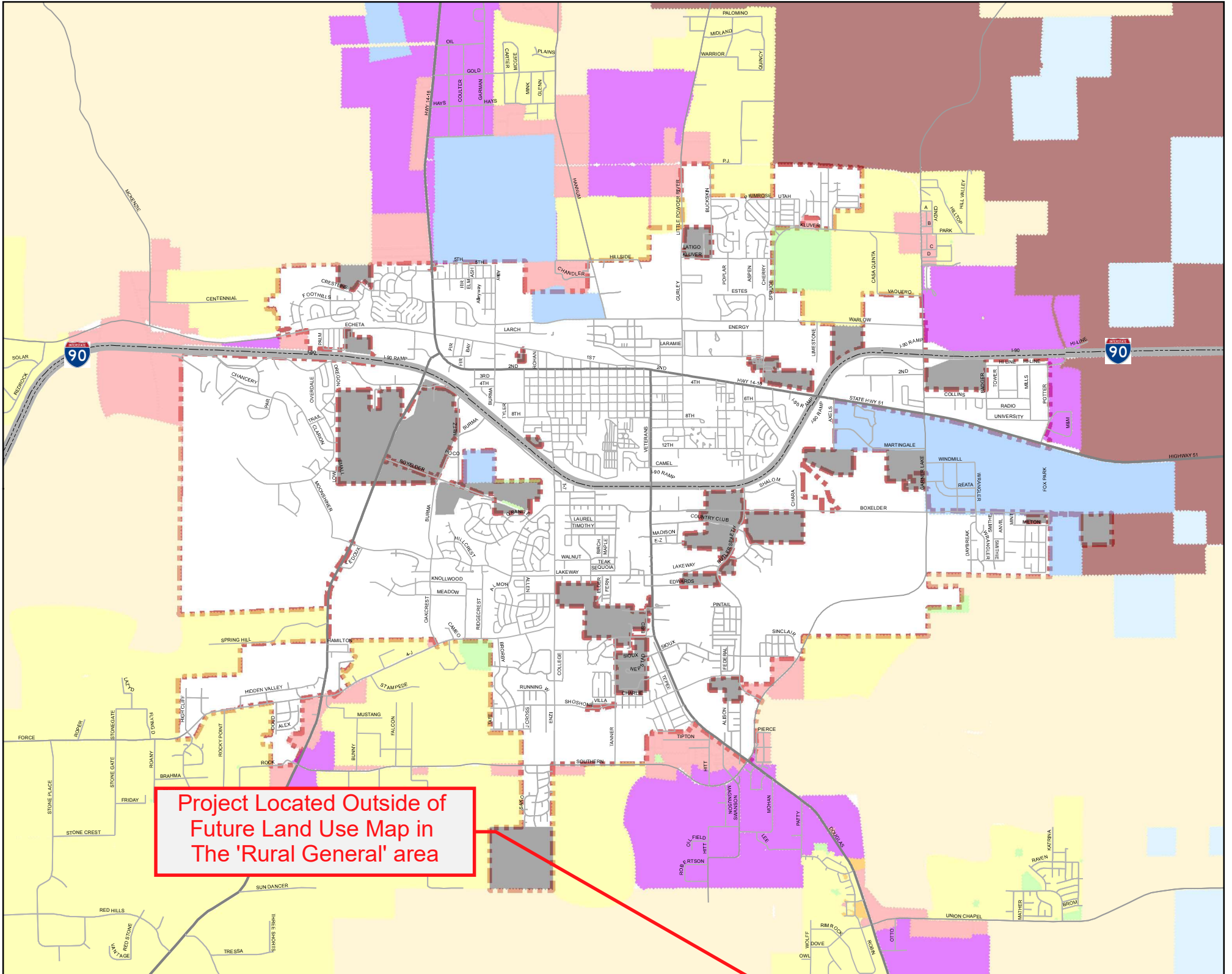


Campbell County's future...today

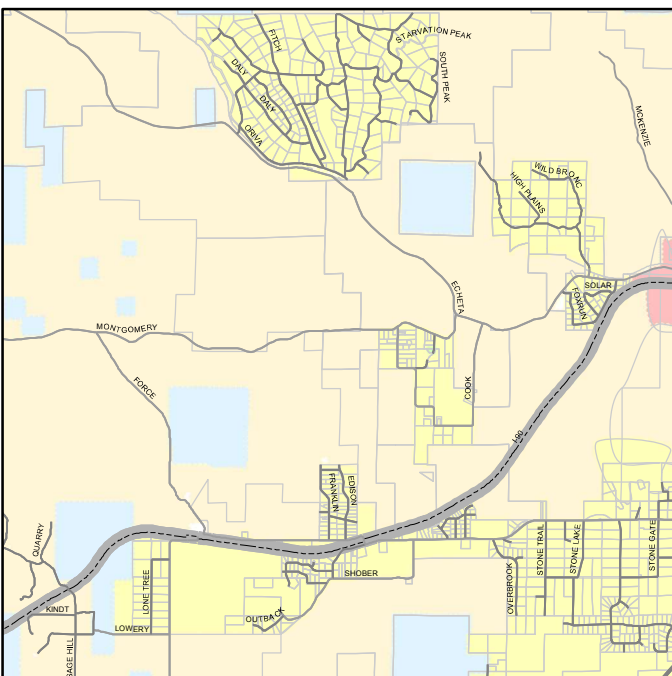


COMPREHENSIVE PLAN 2013

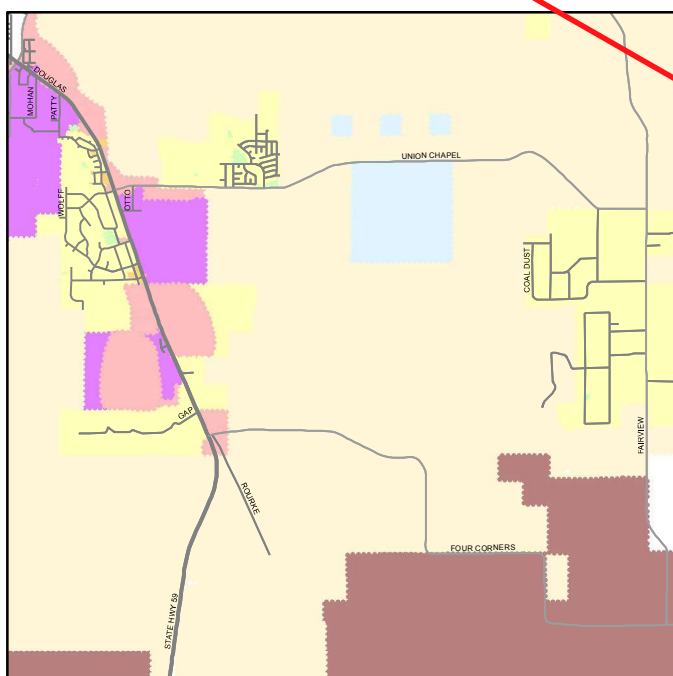




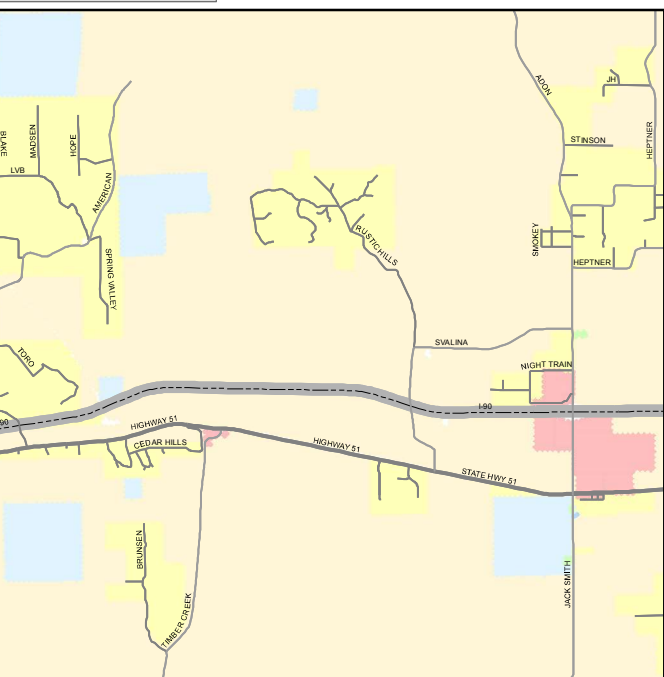
**Project Located Outside of Future Land Use Map in The 'Rural General' area**



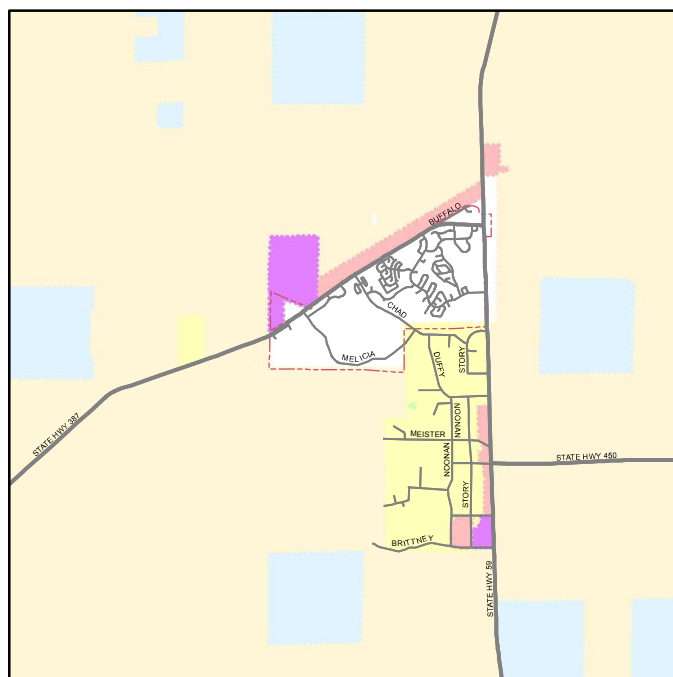
West Gillette



Southeast Gillette



Rozet Area



Wright Area

### Future Land Use Categories

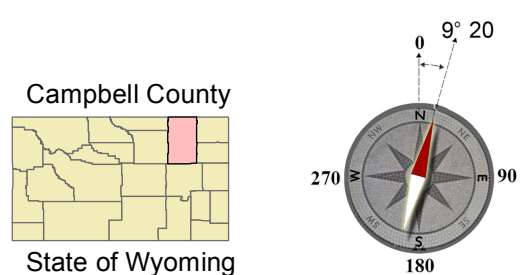
- |                          |                         |
|--------------------------|-------------------------|
| City Infill              | Mining                  |
| Commercial               | Parkland/Infrastructure |
| Federal/State/Public     | Public Facilities       |
| High Density Residential | Residential             |
| Industrial               | Rural General           |
|                          | City Limits             |

### Additional Map Information

Future Land Use categories shown on this map were created through a public input process during the development of the 2013 Campbell County Comprehensive Plan Update. This map is made available to the public by the County and is not a legally recorded map or survey and is not intended to be used as such.

This map is created from compiled records, spatial information, and data from various sources. The source data may contain errors.

Campbell County shall not be liable for any damages or claims that arise out of the user's access to, or use of this map. This map is provided as reference only and should not be relied upon without reviewing the Official Future Land Use Map kept in the Public Works, Planning Division. This Future Land Use Map is a generalization that is not updated daily. Maps can be purchased in full size copies or small copies or by obtaining a .shp or .lyr file from the Planning Division



Campbell County's future...today



COMPREHENSIVE PLAN 2013



This content is from the eCFR and is authoritative but unofficial.

## Title 30 - Mineral Resources

### Chapter VII - Office of Surface Mining Reclamation and Enforcement, Department of the Interior

#### Subchapter B - Initial Program Regulations

#### Part 715 - General Performance Standards

**Authority:** Pub. L. 95-87 (30 U.S.C. 1201 et seq.).

**Source:** 42 FR 62680, Dec. 13, 1977, unless otherwise noted.

#### § 715.13 Postmining use of land.

- (a) **General.** All disturbed areas shall be restored in a timely manner
  - (1) to conditions that are capable of supporting the uses which they were capable of supporting before any mining, or
  - (2) to higher or better uses achievable under criteria and procedures of paragraph (d) of this section.
- (b) **Determining premining use of land.** The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported if the land had not been previously mined and had been properly managed.
  - (1) The postmining land use for land that has been previously mined and not reclaimed shall be judged on the basis of the highest and best use that can be achieved and is compatible with surrounding areas.
  - (2) The postmining land use for land that has received improper management shall be judged on the basis of the premining use of surrounding lands that have received proper management.
  - (3) If the premining use of the land was changed within 5 years of the beginning of mining, the comparison of postmining use to premining use shall include a comparison with the historic use of the land as well as its use immediately preceding mining.
- (c) **Land-use categories.** Land use is categorized in the following groups. Change from one to another land use category in premining to postmining constitutes an alternate land use and the permittee shall meet the requirements of paragraph (d) of this section and all other applicable environmental protection performance standards of this chapter.
  - (1) **Heavy industry.** Manufacturing facilities, powerplants, airports or similar facilities.
  - (2) **Light industry and commercial services.** Office buildings, stores, parking facilities, apartment houses, motels, hotels, or similar facilities.
  - (3) **Public services.** Schools, hospitals, churches, libraries, water-treatment facilities, solid-waste disposal facilities, public parks and recreation facilities, major transmission lines, major pipelines, highways, underground and surface utilities, and other servicing structures and appurtenances.
  - (4) **Residential.** Single- and multiple-family housing (other than apartment houses) with necessary support facilities. Support facilities may include commercial services incorporated in and comprising less than 5 percent of the total land area of housing capacity, associated open space, and minor vehicle parking and recreation facilities supporting the housing.

- (5) **Cropland.** Land used primarily for the production of cultivated and close-growing crops for harvest alone or in association with sod crops. Land used for facilities in support of farming operations are included.
- (6) **Rangeland.** Includes rangelands and forest lands which support a cover of herbaceous or scrubby vegetation suitable for grazing or browsing use.
- (7) **Hayland or pasture.** Land used primarily for the long-term production of adapted, domesticated forage plants to be grazed by livestock or cut and cured for livestock feed.
- (8) **Forest land.** Land with at least a 25 percent tree canopy or land at least 10 percent stocked by forest trees of any size, including land formerly having had such tree cover and that will be naturally or artificially reforested.
- (9) **Impoundments of water.** Land used for storing water for beneficial uses such as stock ponds, irrigation, fire protection, recreation, or water supply.
- (10) **Fish and wildlife habitat and recreation lands.** Wetlands, fish and wildlife habitat, and areas managed primarily for fish and wildlife or recreation.
- (11) **Combined uses.** Any appropriate combination of land uses where one land use is designated as the primary land use and one or more other land uses are designated as secondary land uses.

(d) **Criteria for approving alternative postmining use of land.** An alternative postmining land use shall be approved by the regulatory authority, after consultation with the landowner or the land-management agency having jurisdiction over State or Federal lands, if the following criteria are met. Proposals to remove an entire coal seam running through the upper part of a mountain, ridge, or hill must also meet these criteria in addition to the requirements of § 716.3 of this chapter.

- (1) **The proposed land use is compatible with adjacent land use and, where applicable, with existing local, State or Federal land use policies and plans.** A written statement of the views of the authorities with statutory responsibilities for land use policies and plans shall accompany the request for approval. The permittee shall obtain any required approval of local, State or Federal land management agencies, including any necessary zoning or other changes necessarily required for the final land use.
- (2) Specific plans have been prepared which show the feasibility of the proposed land use as related to needs, projected land use trends, and markets and that include a schedule showing how the proposed use will be developed and achieved within a reasonable time after mining and be sustained. The regulatory authority may require appropriate demonstrations to show that the planned procedures are feasible, reasonable, and integrated with mining and reclamation, and that the plans will result in successful reclamation.
- (3) Provision of any necessary public facilities is assured as evidenced by letters of commitment from parties other than the permittee, as appropriate, to provide them in a manner compatible with the permittee's plans.
- (4) Specific and feasible plans for financing attainment and maintenance of the postmining land use including letters of commitment from parties other than the permittee as appropriate, if the postmining land use is to be developed by such parties.

- (5) The plans are designed under the general supervision of a registered professional engineer, or other appropriate professional, who will ensure that the plans conform to applicable accepted standards for adequate land stability, drainage, and vegetative cover, and aesthetic design appropriate for the postmining use of the site.
- (6) The proposed use or uses will neither present actual or probable hazard to public health or safety nor will they pose any actual or probable threat of water flow diminution or pollution.
- (7) The use or uses will not involve unreasonable delays in reclamation.
- (8) Necessary approval of measures to prevent or mitigate adverse effects on fish and wildlife has been obtained from the regulatory authority and appropriate State and Federal fish and wildlife management agencies.
- (9) Proposals to change premining land uses of range, fish and wildlife habitat, forest land, hayland, or pasture to a postmining cropland use, where the cropland would require continuous maintenance such as seeding, plowing, cultivation, fertilization, or other similar practices to be practicable or to comply with applicable Federal, State, and local laws, shall be reviewed by the regulatory authority to assure that -
  - (i) There is a firm written commitment by the permittee or by the landowner or land manager to provide sufficient crop management after release of applicable performance bonds to assure that the proposed postmining cropland use remains practical and reasonable;
  - (ii) There is sufficient water available and committed to maintain crop production; and
  - (iii) Topsoil quality and depth are shown to be sufficient to support the proposed use.
- (10) The regulatory authority has provided by public notice not less than 45 days nor more than 60 days for interested citizens and local, State and Federal agencies to review and comment on the proposed land use.

[42 FR 62680, Dec. 13, 1977; 43 FR 2721, Jan. 19, 1978]

### A Better Plan for Wyoming's Coal Industry Assets

For decades coal mining has formed the bedrock of Wyoming's economy. Thermal coal has provided thousands of stable, well-paying jobs, brought prosperity to rural communities, and supported the state with millions in severance tax revenues each year. Many don't realize that Wyoming's surface coal mining industry really began to flourish due to the passage of federal regulations that created a market for Wyoming's low-sulfur coal. Just like in the past, economic headwinds can mean new opportunities for our state in unexpected ways.

While Wyoming's thermal coal industry has thrived for decades, it is now in a slow but steady decline due to other state and federal policies. However, expanding industries that the state is currently pursuing like hydrogen, wind, solar and nuclear energy, carbon capture, manufacturing, carbon products, data centers and energy storage will all need to be located somewhere. The assets and facilities found on coal industry sites represent ideal locations for new economic development. Rather than disturbing untouched land and disrupting wildlife migration corridors or crucial habitat by developing new sites, why not repurpose these already disturbed areas?

A [new report](#) funded by The Nature Conservancy (TNC) goes in-depth on the opportunity and challenges surrounding this innovative concept. The Coal Infrastructure Reuse Report provides an inventory of coal industry assets in Wyoming, provides details of past projects that have successfully repurposed infrastructure and examines how Wyoming might use policy or regulate changes to make new projects more successful.

Each of Wyoming's 36 coal industry sites include millions of dollars of investment by companies in railroads, utilities, offices, warehouses, shops and more. Most of these assets can easily be reused, but current regulations incentivize returning the entire site to its original condition. To be clear, reclamation of industrial sites is usually a good thing. Retired mines should be reclaimed, and Wyoming's coal companies do a wonderful job of returning their sites to natural landscapes, seeded with native plants that pronghorn, mule deer and elk love to eat. But each of these sites have facilities that represent a lost opportunity when they are bulldozed and scrapped. Wyoming can and should seize the opportunity before us by adjusting regulations and supporting a new life for our industrial assets. Doing so would attract project developers, reduce new construction costs, and provide a future for these legacy sites, all while avoiding impacts to intact land.

State and county-level economic development organizations can play an important role. Big new investments don't happen overnight, but neither do mine closures. Economic development organizations, if well-funded and empowered, can coordinate with mining companies and project developers in the growing industries that Wyoming is attempting to attract. They can sell the advantages of pre-built infrastructure, a workforce familiar with the site, and Wyoming's quality of life. This will bring new projects and prosperity to mine sites. While new economic investment is arriving, the state would be protecting the intact prairie and rangeland that Wyomingites have hunted, fished, and worked for generations.

With this report from TNC in hand, the groundwork has been laid for the success of the infrastructure reuse concept. Wyoming needs local governments to support innovative projects with workforce training and re-zoning of facilities slated for closure. Wyoming also needs its state legislature and executive leadership to empower state agencies to make the repurposing of industrial sites a reality.

There is no better way to honor the legacy of the thermal coal industry in Wyoming than by repurposing its industrial infrastructure so that the communities coal built can continue to thrive. Doing so will bring benefits to the mining companies, the state, workers, our land, and wildlife.

Full report at: [nature.org/wycoalreusefull](https://nature.org/wycoalreusefull)

Executive summary at: [nature.org/wycoalreusesummary](https://nature.org/wycoalreusesummary)

Author:

Rusty Bell, Director of Campbell County Office of Economic Transition

Exhibit 'H'  
Infrastructure Reuse Report  
(32 pages)

# COAL INFRASTRUCTURE *REUSE REPORT STUDY*

**PREPARED FOR:**  
THE NATURE CONSERVANCY  
IN WYOMING



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## COAL INFRASTRUCTURE REUSE STUDY:

Pathways to Reuse for Wyoming's  
Coal Industry Infrastructure

### A STUDY SPONSORED BY:

The Nature Conservancy  
Wyoming Field Office  
15 March 2023

### PREPARED BY:

Waypoints Wyoming LLC  
Gillette, Campbell County, Wyoming 82718  
under TNC Contract No. WY 14-22

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## DISCLAIMER

*Although the authors have made every attempt to use the best information and data available, to provide transparency in the analysis, and solicited expert opinion and review, the readers need to be reminded that the Coal Infrastructure Reuse Study is an initial compilation of public source data intended to frame a strategic discussion. Alone it is not sufficiently designed, developed, and validated to be a tactical planning and decision tool. Even though the analysis does provide site specific references of property character, these factors are intended to serve only as contextual and subjective considerations.*

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# EXECUTIVE SUMMARY

## COAL MINING & POWER GENERATION INDUSTRIES IN WY

Beginning in 1970 the Wyoming coal industry entered into a 38 year period of nearly uninterrupted growth experiencing an average annual growth rate exceeding 12% and attaining a peak production level of 466 millions tons in 2008 while supporting nearly 7,000 employees.

Development on an immense scale was required to facilitate the coal industry's initial expansion, and an impressive array of infrastructure was developed in the state. There are more than 30 major industrial sites associated with coal mining and coal-fired power generation in Wyoming (see **Figure A.1 Wyoming Statewide Coal Fired Power Plants\_With Mine Permits**), each one home to \$10's to \$100's of millions in infrastructure investment, including rail, materials handling facilities, large industrial maintenance, repair and fabrication buildings, offices, high capacity power lines and substations, water infrastructure, and more.

These sites have proven the capacity to support thousands of jobs. The property, improvements and infrastructure, and the product sales they enable, are taxed generating significant revenues to the Wyoming state budget.

During 2021, 238 million tons of coal moved by unit trains (single destination trains with up to 150 cars) to energy markets in 25 states across the country. Wyoming power plants consumed another 23 million tons during the year, and 4.7 million tons went to other industrial uses.

The vast majority of all of the coal mined in Wyoming is shipped via rail to destinations outside its borders to 25 other states. The top consumers of Wyoming coal are coal-fired power plants in Texas, Missouri, and Illinois.

There are six coal fired power facilities for market generation in Wyoming, and two coal fired power facilities for dedicated industrial power generation spread across eight geographic locations in the State of Wyoming considered in the Coal Infrastructure Reuse Study

The thirty-two unique coal fired boiler-generators installed in the state fall into four general categories: 19 units generating power to the market grid, 8 generating power for direct industrial use, and 5 retired but remaining under permit.

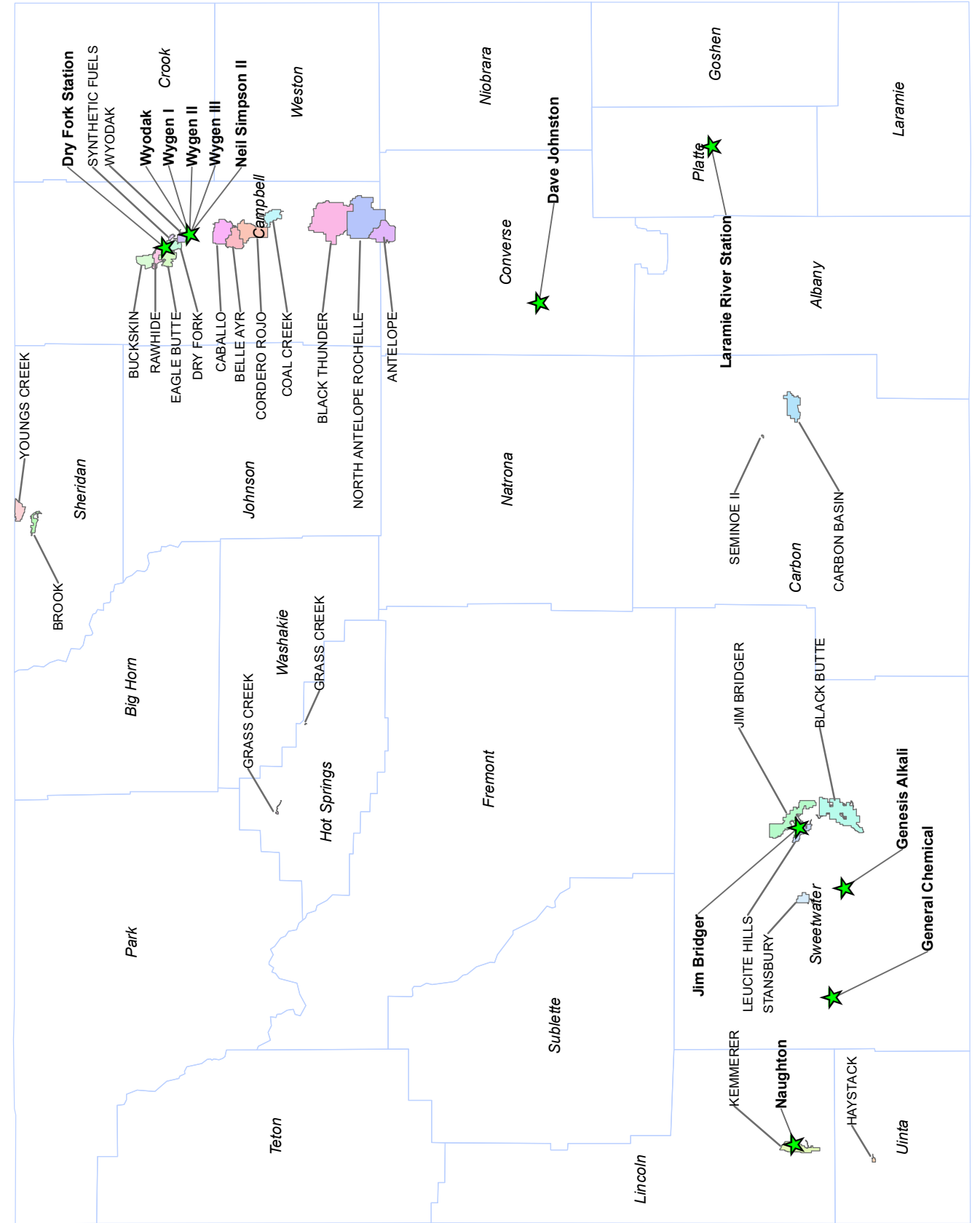
The total acreage dedicated to coal fired power plant operations in Wyoming is over 8,800 acres. The six primary grid tied generating facilities have a generating capacity of 7,205 MW.

Revenues from the coal industry, both mining and power generation during the period of growth, came to be relied upon as the most stable of the States three primary energy commodities, often contributing up to 1/3 of State revenues while its direct and first tier support employees typically earned nearly double the average wages of other business and industry sectors in the State.

The coal mining and power plant sectors now employ just over 5,100 workers. Coal industry jobs are among the best paying in the state with Wyoming coal sector workers collecting an average annual wage of \$93,905, excluding benefits. Coal sector workers take-home pay is almost twice the statewide average wage of \$49,756 per worker.

Estimates indicate that each coal industry position supports an additional two jobs in the service and supply sectors, bringing direct and indirect employment to more than 15,000 workers.

**FIGURE 1.A WYOMING STATEWIDE COAL FIRED POWER PLANTS WITH MINE PERMITS**



## INFLUENCE & IMPACT

The drivers that primarily influence the Wyoming coal industry, both mining and power generation, originate from outside the geographic borders of Wyoming in the form of both regulation and market demands. These drivers are also outside of our ability for meaningful political or social influence.

Since 2008 coal production has been in steep decline having lost 228 million tons of production, a 49% reduction in gross quantity resulting in a loss of over 2,000 direct jobs. Similar to the drivers for the coal industry's growth, forces causing decline are exerted from the outside, and again coming in the form of regulation and market demands.

## THE COAL INFRASTRUCTURE REUSE STUDY

This study was undertaken to:

1. present an Inventory of sites that have realistic potential for reuse post mining or coal fired power generation, and offer a perspective of their Valuation
2. to identify and describe Prior Projects that have successfully employed a reuse strategy
3. to describe the Pathways that exist in the current regulatory structure to seek an exception to demolition and reclamation, and;
4. to identify Partnership and Funding Opportunities to enable a sensible and sustainable reuse strategy.

This compilation is intended to be immediately valuable to inform policy makers, regulators and industry participants facing decision points regarding retirement, decommissioning, and reclamation of valuable infrastructure associated with the coal industry.

Inventories for Mines and Power Plants are based on publicly available datasets from government, regulatory, academic and industry sources.

Obtaining relevant Valuations for Mines and Power Plants proved to be the most challenging aspect of the study. In keeping with the stated intent to identify, access and report reliable

and repeatable data sources for information presented in this report, publicly available tax assessment records were determined to be the most appropriate statements of value. (see **Table 1.B Reclamation Bond Amounts and Assessed Values for Wyoming Coal Mines**).

## AT THE END OF ORIGINAL INTENDED USE

Current federal and state regulations default to demolition of all facilities and infrastructure and reclamation of the land to its prior (pre-industrial development) use and character at the closure of a mine or power plant.

If coal industry sites are fully reclaimed, they are unlikely to be targeted for renewed development. Legacy liabilities and geotechnical issues are likely obstructions. Industrial or energy projects that could have repurposed these sites would necessarily be constructed on greenfield sites elsewhere, leading to unnecessary impact to landscapes and wildlife across the state.

Implementation of reuse strategies for coal industry sites could provide displaced workers with new jobs, the state and county governments with new revenue, the state's economy, and facilitate diversification of the state's economy. Speed to market versus green fields would advantage reuse. Additional impacts of development on Wyoming's landscapes and reclamation costs for coal industry companies closing their operations would be reduced or avoided.

Each of the twenty-four (24) mine sites and the twelve (12) power plant sites addressed in this report (see **Table 1.A Listing of Properties Considered in this Report**) represent an opportunity for post mining industrial reuse including low- impact development of the utility-scale renewable energy facilities.

## FEDERAL AND STATE POLICY, PROJECTS AND FUNDING

Federal policy is serving to promote development of pathways, partnership and funding that supports reuse of mine lands. The Interagency Working Group on Coal and Power Plant Communities, Office of Clean Energy Demonstrations and other funding opportunities coming out of various offices of the Department of Energy and Economic Development Administration are advancing current policy.

Department of Energy and the Economic Development Administration, many other federal agencies and private markets are investing at unprecedented levels in the development of a variety of new clean energy technologies including carbon management, hydrogen, nuclear, grid scale batteries and advanced manufacturing, many of which offer opportunities for diversification of industry in Wyoming. The DOE's \$500 million funding of the Clean Energy on Mine Lands (CEML) demonstrates a signal of policy and programmatic support for the concept of mine lands re-use.

The state government including the Wyoming Energy Authority and the Office of the Governor - Energy Policy Advisory Staff, the Wyoming Business Council, its Regional Director Staff and local Economic Development Organizations and the University of Wyoming - School of Energy Resources are similarly aligning with new energy technologies to diversify and strengthen the state's economy while pledging to reduce the carbon intensity of our energy industries. Reuse of coal industry facilities represent near-ideal locations to support the development of pilot projects, demonstration sites, and commercial deployment of CO2 Storage and Hydrogen Energy Hubs.

## SUCCESS STORIES:

A pathway to properly permit lands for reuse does exist in the current rules and Regulations of the WDEQ, in compliance and alignment with OSMRE requirements in:

**SMRE Title 30, Subchapter B 715.13**

**Postmining use of land**

and within Wyoming DEQ a process for a Land Use Change is in:

**Land Use Change to Industrial/Commercial for Coal Mine Facilities, LQD Coal Chapter 2. Sec. 6(b)(x)(C).**

Examples of navigating the existing federal and state regulatory pathways to achieve reuse do exist (see **Chapter 3. Prior Projects: Re-use Examples on Mine Lands**).

Four projects in Wyoming have sought to re-purpose mine lands with information provided in this report for:

- **Dave Johnson Mine** - Glenrock Rolling Hills Wind Energy
- **Jacobs Ranch Mine** - Rail Utilization Complex
- **Synthetic Fuels Mine** - Fort Union Industrial Park
- **Kemmerer Mine** - Terra Power Natrium Nuclear Project

The environmental impact of the new businesses that reused these lands was lessened because no new land disturbance was necessary, no additional cultural or wildlife resources were impacted.

**SITES, LAND AND VALUE - QUICK FACTS**

- There are **24 coal mines in the State of Wyoming considered in the Coal Infrastructure Reuse Study**
  - 24 with open permits being administered by WDEQ-LQD
  - **17 with active an on-going mining production**
  - 5 in Reclamation status
  - 1 in Temporary Cessation status
  - 1 in Non-Development status
- Lands in Wyoming associated with coal mining comprise
  - **390,000 acres** within active mine permits
  - **245,000 acres privately** owned by mining companies within and proximal to permit boundaries
  - **170,000 acres in active or reclamation status**, in current or prior disturbance disturbance or undergoing some phase of reclamation
- There are 6 **distinct coal fired power facilities for market generation**, and 2 distinct coal fired power facilities for dedicated industrial power generation **at 8 geographic locations in the State of Wyoming considered in the Coal Infrastructure Reuse Study**
  - 32 boiler/generator units considered within all classes, permit and operational status
  - **19 individual boiler/generator units generating power to the market grid**
  - 8 individual boiler/generator units generating power for direct industrial use
  - 5 boiler/generator units having been retired but with remaining open permits
- Lands in Wyoming associated with coal fired power generation comprise. Approximately **9,000 acres owned by power generating companies** proximal to plant sites
- Bonding, reclamation reserve funds by class
  - **\$1.9 billion in Total mine reclamation bonds**
  - \$990 million in Area Bonds (*mostly dedicated to pit area backfill*)
  - **\$360 million in Incremental Bonds** (*includes infrastructure demolition funds*)
  - A typical mid-sized mine in the Powder River Basin will allocate \$4.5 to \$8.0 million dollars to infrastructure demolition

- Mines and Power Plants across the State commonly have facilities that include clerical offices, labs, professional engineering and management spaces, conference and training rooms, warehouses, and heavy industrial repair and fabrication shops. Even the smallest of the mine facilities are comprised of 40-50,000 square feet of total facilities with the largest being in excess of 200,000 square feet of total buildings of all classes.
- Assessed Values for Select Asset Categories and Types
  - **Public tax records indicate replacement costs in excess of \$980 million for Buildings, Site Improvements and Plant Machinery and Equipment**
  - **A differential cost approaching \$1.35 billion is indicated between demolition and reclamation of Buildings, Site Improvements and Plant Machinery and Equipment and the replacement of the same on a build ready greenfields site.**

**TAKE AWAYS:**

Efforts to develop a strategic framework that pursues policy, statute and regulation that result in reuse as a preferential pathway are encouraged to avoid unnecessary and regressive destruction of assets and infrastructure that would return lands to a lesser productive condition and value.

Presently coal mine and coal power plant owners must view disturbed lands, transportation infrastructure, permanent improvements and utilities as liabilities. A properly formed reuse strategy would allow the owners, communities and future industries to realize these as assets.

Wyoming’s workers, businesses, environment and financial bottom line would benefit from the reuse of coal mine and coal power plant lands, assets and infrastructure.

**EXECUTIVE SUMMARY TABLE 1.A  
LISTING OF PROPERTIES CONSIDERED IN THE REPORT**

COAL MINES		
MINE NAME	COMPANY	COUNTY
Antelope	Navajo Transitional Energy Company, LLC	Converse
Belle Ayr	Eagle Speciality Materials, LLC	Campbell
Black Butte	Black Butte Coal Company	Sweetwater
Black Thunder	Thunder Basin Coal Company, LLC	Campbell
Brook	Brook Mining Company, LLC	Sheridan
Buckskin	Buckskin Mining Company	Campbell
Caballo	Peabody Caballo Mining, LLC	Campbell
Carbon Basin	Arch of WY LLC	Carbon
Coal Creek Mine	Thunder Basin Coal Company, LLC	Campbell
Cordero Rojo	Navajo Transitional Energy Company, LLC	Campbell
Dry Fork	Western Fuels WY, Inc.	Campbell
Eagle Butte	Contura Coal West, LLC	Campbell
Grass Creek	Spring Gulch Coal Co (The)	Hot Springs
Haystack	Westmoreland Haystack Mining, LLC	Uinta
Jim Bridger	Bridger Coal Company	Sweetwater
Kemmerer	Kemmerer Operations, LLC	Lincoln
Leucite Hills	Black Butte Coal Company	Sweetwater
North Antelope Rochelle	Peabody Powder River Mining, LLC	Campbell
Rawhide	Peabody Caballo Mining, LLC	Campbell
Seminole II	Arch of WY LLC	Carbon
Stansbury	Rocky Mountain Coal Company	Sweetwater
Synthetic Fuels Mine	Green Bridge Holdings, Inc.	Campbell
Wyodak	Wyodak Resources Development Corporation	Campbell
Youngs Creek	Navajo Transitional Energy Company, LLC	Sheridan
POWER PLANTS		
PLANT NAME	COMPANY	COUNTY
Dave Johnston	PacifiCorp	Converse
Dry Fork Station	Basin Electric Power Coop	Campbell
General Chemical	PacifiCorp	Sweetwater
Genesis Alkali	PacifiCorp	Sweetwater
Jim Bridger	PacifiCorp	Sweetwater
Laramie River	Basin Electric Power Coop	Platte
Naughton	PacifiCorp	Lincoln
Neil Simpson II	Black Hills Power Inc	Campbell
Wygen I	Black Hills Power Inc	Campbell
Wygen II	Black Hills Power Inc	Campbell
Wygen III	Black Hills Power Inc	Campbell
Wyodak	Black Hills Power Inc	Campbell

# CHAPTER ONE INTRODUCTION

The Coal Infrastructure Reuse Study (CIRS): Pathways to Reuse for Wyoming' Coal Industry Infrastructure is intended to serve as an informational tool set that summarizes the coal industry's assets and infrastructure across the State of Wyoming and to provide a base set of metrics as a starting point to consider the potential for reuse of coal mining and coal fired generation sites at the end of their original intended use.

A comprehensive listing of coal mining and power generation sites has been developed as the foundation for all subsequent tasks. This listing provides a framework for detailed inventory and categorization of assets including a GIS dataset and resulting mapping for each site. Each set of site specific data should serve as the platform to identify and quantify lands and infrastructure that could offer value within a reuse strategy.

Existing mine and power generation facilities are listed and their attributes cataloged by site. So that each site may be evaluated according to its character; land and infrastructure are described to provide some insight to prospective reuse scenarios. The methods employed should allow for considerations of values through three particular lenses: current use, utilization in place for other than present purposes, and replacement cost in an assumed greenfields scenario creating similar capacity. Analysis reflects items identified that are likely to provide value to a future reuse proposition and also those that should be considered as no longer offering any benefit beyond the original intended purpose.

Examples of prior projects that have employed coal industry assets for purposes outside of their original intent are described. Several

projects in Wyoming have already repurposed coal industry assets. Four of these have been summarized so that the reader may consider the process, challenges, and viability of repurposing additional coal industry lands and infrastructure in the future.

The current reclamation bonding requirements of the Office of Surface Mining and the Wyoming Department of Environmental Quality are reported for each site with the specific intention of calling out certain potential financial and regulatory barriers to repurposing assets, and spur ideas on how to overcome those barriers.

Potential partnerships and opportunities are considered from among those entities that may have an interest in supporting post mining reuse applications. Existing pathways through the current business, legal and regulatory fields, with particular focus on issues that might impede or prevent a sensible use model for these assets and infrastructure outside of the present coal industry model are discussed. Successful transitions to reuse are sure to require collaboration, and communities will benefit from strategic partnerships that together present opportunities for creation of unique value propositions in the evolving energy sector.

## 1.1 BACKGROUND

Wyoming is a state with a wealth of energy resources, including coal, oil, natural gas, and uranium. While a historical review of production and pricing metrics for each of these reveals both rational cyclic variations and striking unpredicted periods of volatility, it is coal that can be distinguished from the others as having been relatively immune to the well known boom and bust cycles of Wyoming's energy industries.

Beginning in 1970 the Wyoming coal industry entered into a 38 year period of nearly uninterrupted growth, recording year-over-year losses of production only twice during that time. The sector experienced an average annual growth rate exceeding 12% having reached a peak production level of 466 millions tons in 2008 while supporting nearly 7,000 employees. Revenues from the coal industry, both mining and power generation, came to be relied upon as the most stable of the States three primary energy commodities, often contributing up to 1/3 of State revenues while its direct and first tier support employees typically earned nearly double the average wages of other business and industry sectors in the State. **See Figures B & C.**

This period of growth was driven in a very significant way by a factor that previously had not before exerted much influence on Wyoming's coal mining or coal fired power generation industry - that is Federal environmental actions, particularly the evolution of the Clean Air Act regulations. With the Clean Air Act came an unanticipated advantage to Wyoming's coal resource and the electricity it could produce. **Early on our State chose to take action in recognition of this new reality.**

So significant were the impacts of these actions that Wyoming surpassed the historic front

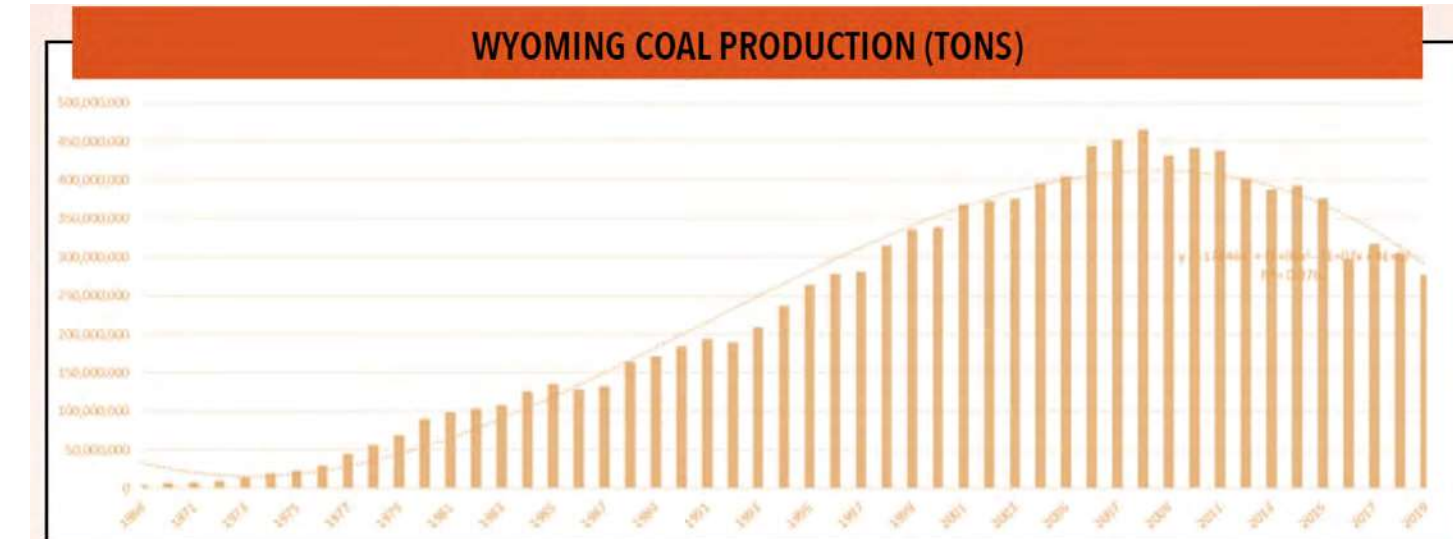
runners in coal production within 15 years of initiating a coal and coal fired power export strategy and has maintained that position to present. Along the way the mining and power generation sectors in Wyoming have established themselves as clear industry leaders in production, quality, operating costs and safety. The State is rightfully proud of our coal industry and its people, for their essential role in providing an outsized contribution to the nation's energy needs and doing it in typical Wyoming fashion - with hard work and an independent mind set.

There must be a recognition though that essentially all of the actions within our State have been in response to demands that originated from the outside, in the form of both regulation and market demands. These drivers originated, and remain, not only outside of our geographic borders but outside of our ability for meaningful political or social influence.

Today our coal industries continue to be driven by influences outside of our control. Since 2008 coal production has been in steep decline having lost 228 million tons of production, a 49% reduction in gross quantity with that loss taking over 2,000 direct jobs with it.

Just as with the drivers for the coal industry's growth, the down-pressures causing decline are exerted from the outside and again coming

**FIGURE B**  
WMA CONCISE GUIDE TO WYOMING COAL - VOLUME TRENDS  
SOURCED: WYOMING MINING ASSOCIATION COAL CONCISE GUIDE 2020-2021

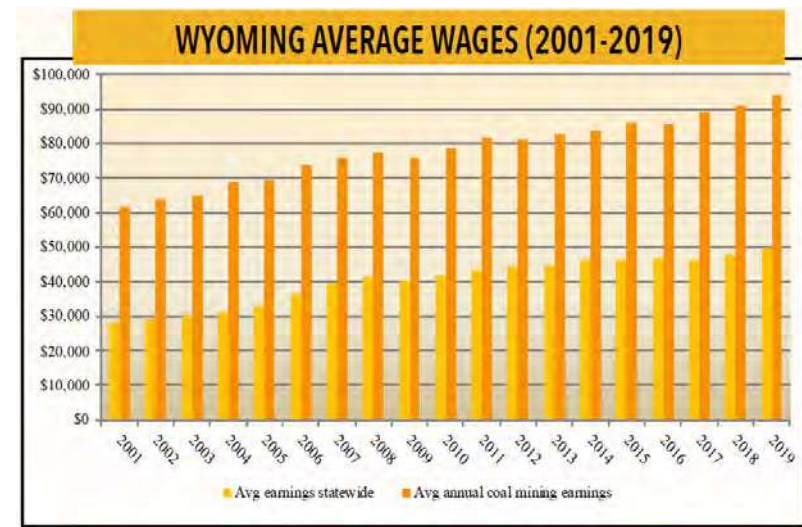


in the form of regulation and market demands. Wyoming's low priced energy from coal has been challenged by historically underpriced natural gas and by subsidized wind and solar energy development. The once highly sought after emissions "super compliant" coal from the Powder River Basin has been overshadowed by its own colorless and odorless contributions

to atmospheric carbon dioxide levels. These factors of regulation and price now force decisions in the marketplace that put coal in a lagging position while global opinions and policy relating to climate change only serve to multiply the market realities leveraged against coal. **Once again, our State has an opportunity to take action in recognition of a new reality.**

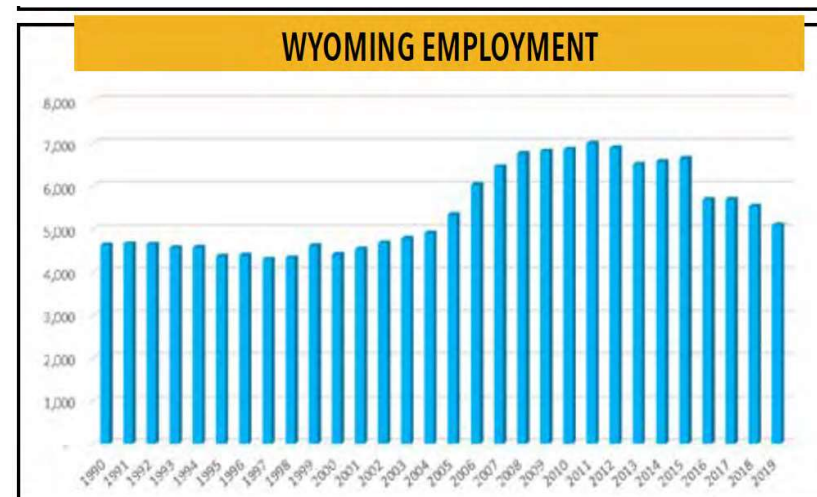
**FIGURE C- PART 1**

WMA CONCISE GUIDE TO WYOMING COAL - EMPLOYMENT & WAGES  
 SOURCED: WYOMING MINING ASSOCIATION COAL CONCISE GUIDE 2020-2021



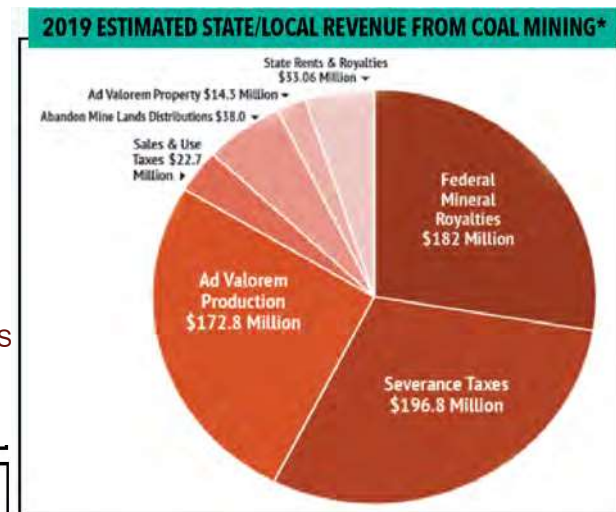
**FIGURE C- PART 2**

WMA CONCISE GUIDE TO WYOMING COAL - EMPLOYMENT & WAGES  
 SOURCED: WYOMING MINING ASSOCIATION COAL CONCISE GUIDE 2020-2021



**FIGURE D**

WMA CONCISE GUIDE TO WYOMING COAL - TAXES CHART  
 SOURCED: WYOMING MINING ASSOCIATION COAL CONCISE GUIDE 2020-2021



**1.2. CONTEXT & SETTING**

Development on an immense scale was required to facilitate the coal industry's initial expansion, and an impressive array of infrastructure was developed in the state. There are more than 30 major industrial sites associated with coal mining and coal-fired power generation in Wyoming, each one home to \$10's to \$100's of millions in infrastructure investment, including rail, materials handling facilities, large industrial maintenance, repair and fabrication buildings, offices, high capacity power lines and substations, water infrastructure, and more. These sites have proven the capacity to support thousands of jobs. The property, improvements and infrastructure, and the product sales they enable, are taxed generating significant revenues to the Wyoming state budget. **See Figure D on previous page.**

Due to the current economic and environmental regulatory trends, coal mines and coal-fired power plants in Wyoming are likely to cease operations well ahead of the depletion of economically recoverable coal reserves. At the same time alternative energy industries, specifically solar and wind, are likely to see significant increases in generating capacity on the intrastate and interstate power grids through construction of new facilities in Wyoming.

Pacificorp, the parent company of Wyoming's largest electric utility Rocky Mountain Power (RMP), publishes a biennial Integrated Resource Plan and their most recent has Wyoming's last RMP-owned coal-fired generating unit retiring around 2040, with most retiring several years before that. Of Wyoming's currently producing coal mines addressed in this report only one has announced a closure date, but the coal mine life cycle is entirely dependent on the undeniable trend in power plant closures in this state and across the nation. **See Figures E 1-5 on following page.**

Upon the closure of a coal mine or power plant, current federal and state regulatory requirements default to position of demolition of all facilities and infrastructure and reclamation of the land

to its prior (pre-industrial development) use and character.

Once these sites are fully reclaimed, they are unlikely to be targeted for new development due to legacy liabilities and geotechnical issues of new construction. New industrial facilities that could have re-purposed these sites would then likely be constructed on greenfield sites elsewhere, leading to unnecessary impact to landscapes and wildlife across the state and country.

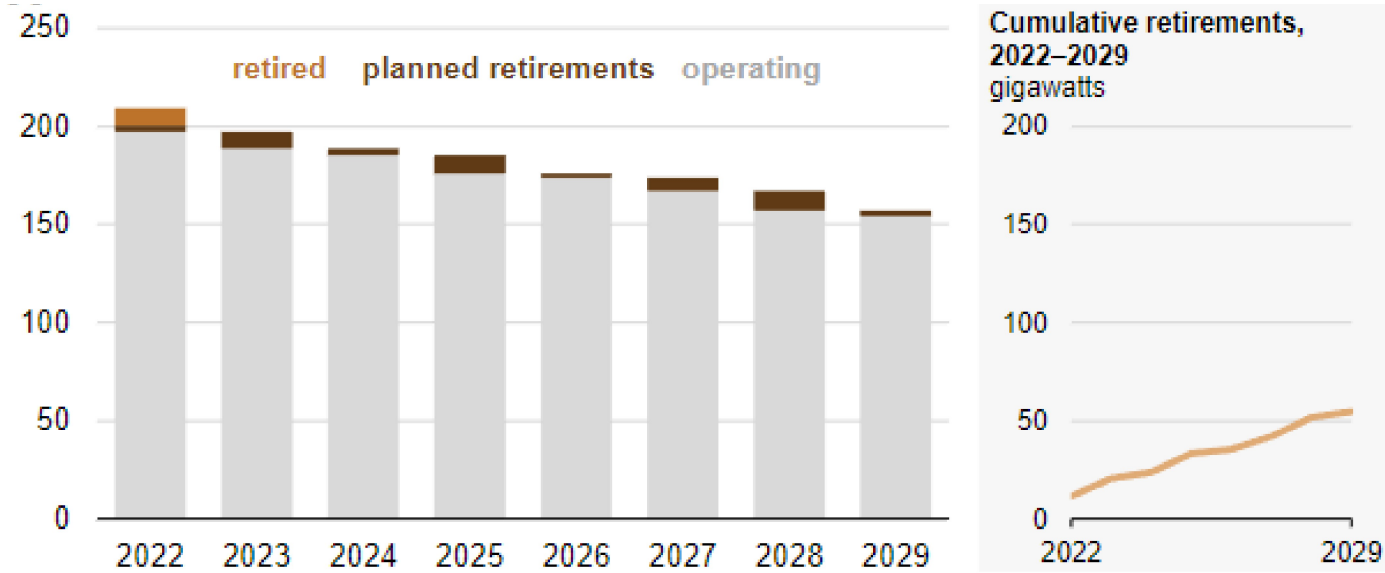
Alternatively, re-use of these coal industry sites could provide displaced workers with new jobs, the state and county governments with new revenue, facilitate diversification of the state's economy, while reducing the time for market entry versus greenfields development. Additional impacts of development on Wyoming's landscapes and reclamation costs for coal industry companies closing their operations would be reduced or avoided.

Each of the twenty-four (24) mine sites and the twelve (12) power plant sites addressed in this report (**see Figures A.1, A.2, A.3, A.4 that follow**) represent an opportunity for post mining industrial reuse including low- impact development of the utility-scale renewable energy facilities. Renewable energy generation facilities have the potential to co-utilize land resources with certain compatible industries with many examples indicating that access to low-carbon energy has attracted other types of economic investment.

**FIGURE E.1**

US COAL-FIRED GENERATING CAPACITY & PLANNED RETIREMENTS

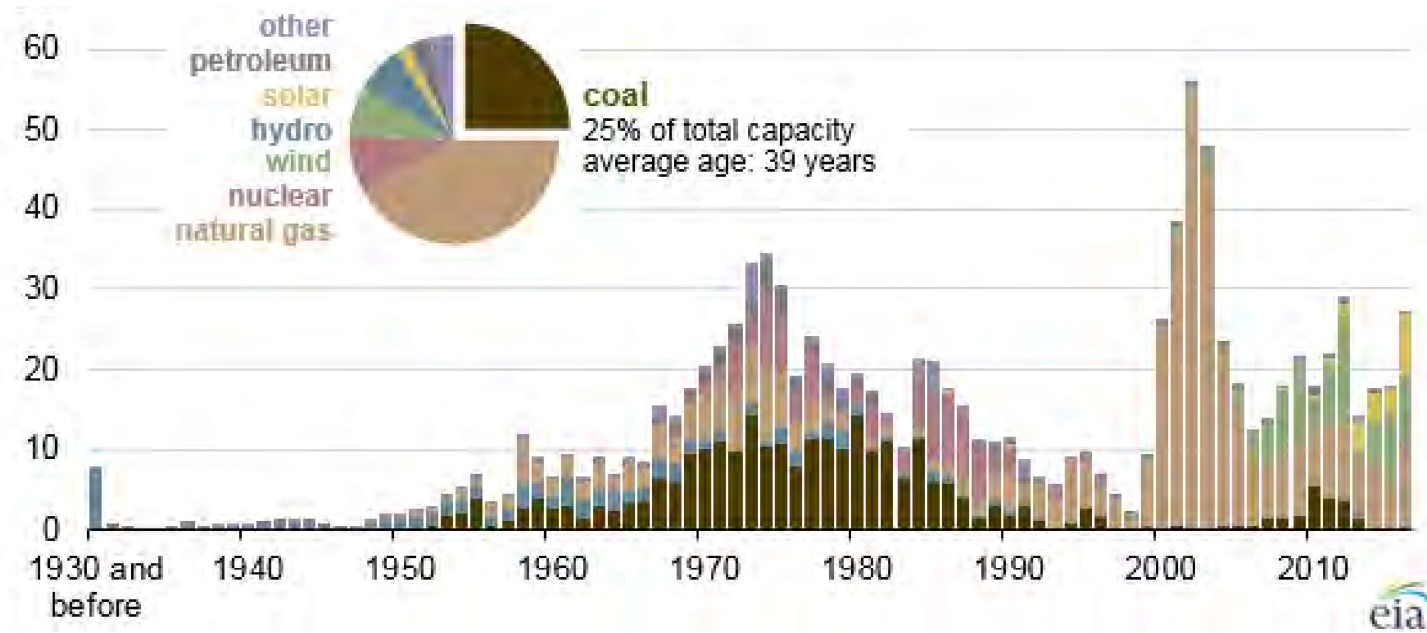
SOURCED: US ENERGY INFORMATION ADMINISTRATION, MONTHLY ELECTRIC GENERATOR INVENTORY



**FIGURE E.2**

US UTILITY SCALE ELECTRIC GENERATING CAPACITY BY INITIAL OPERATING YEAR

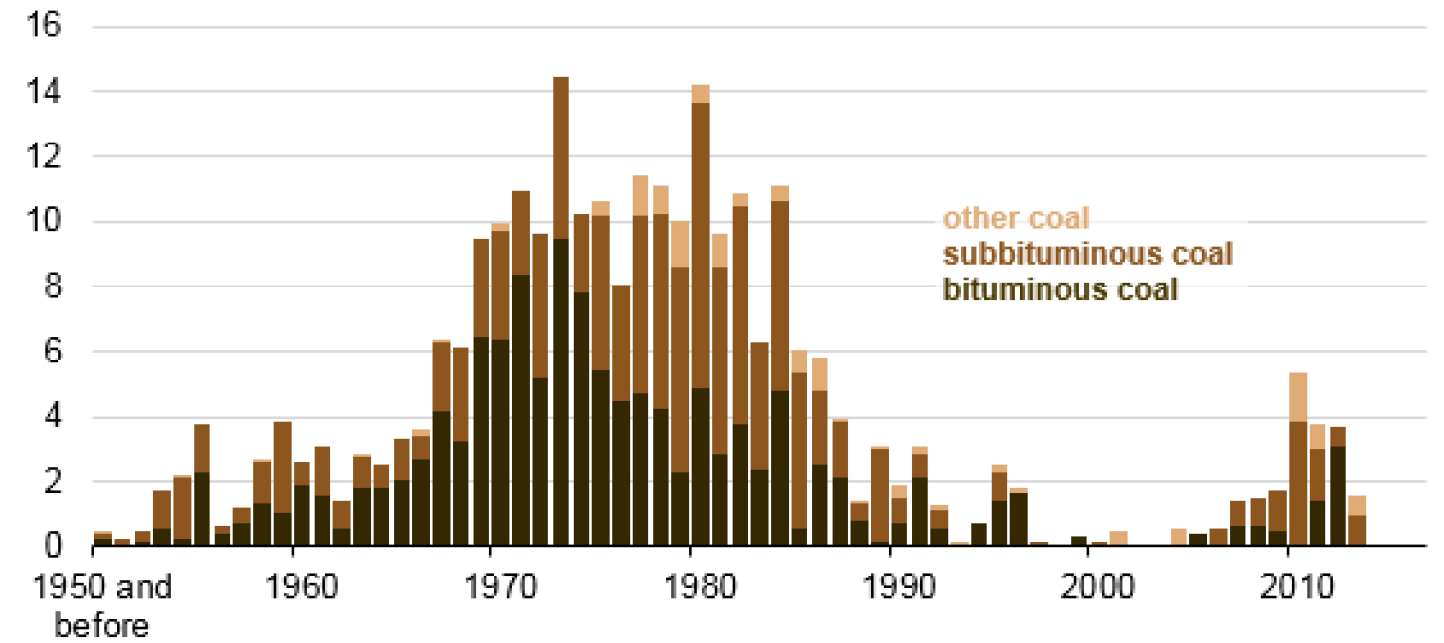
SOURCED: US ENERGY INFORMATION ADMINISTRATION, PRELIMINARY MONTHLY ELECTRIC GENERATOR INVENTORY



**FIGURE E.3**

US UTILITY-SCALE COAL-FIRED ELECTRIC GENERATING CAPACITY BY INITIAL OPERATING YEAR

SOURCED: US ENERGY INFORMATION ADMINISTRATION, PRELIMINARY MONTHLY ELECTRIC GENERATOR INVENTORY



**FIGURE E.5**

US COAL PLANT CAPACITY BY INITIAL OPERATING YEAR

SOURCED: US ENERGY INFORMATION ADMINISTRATION, PRELIMINARY MONTHLY ELECTRIC GENERATOR INVENTORY

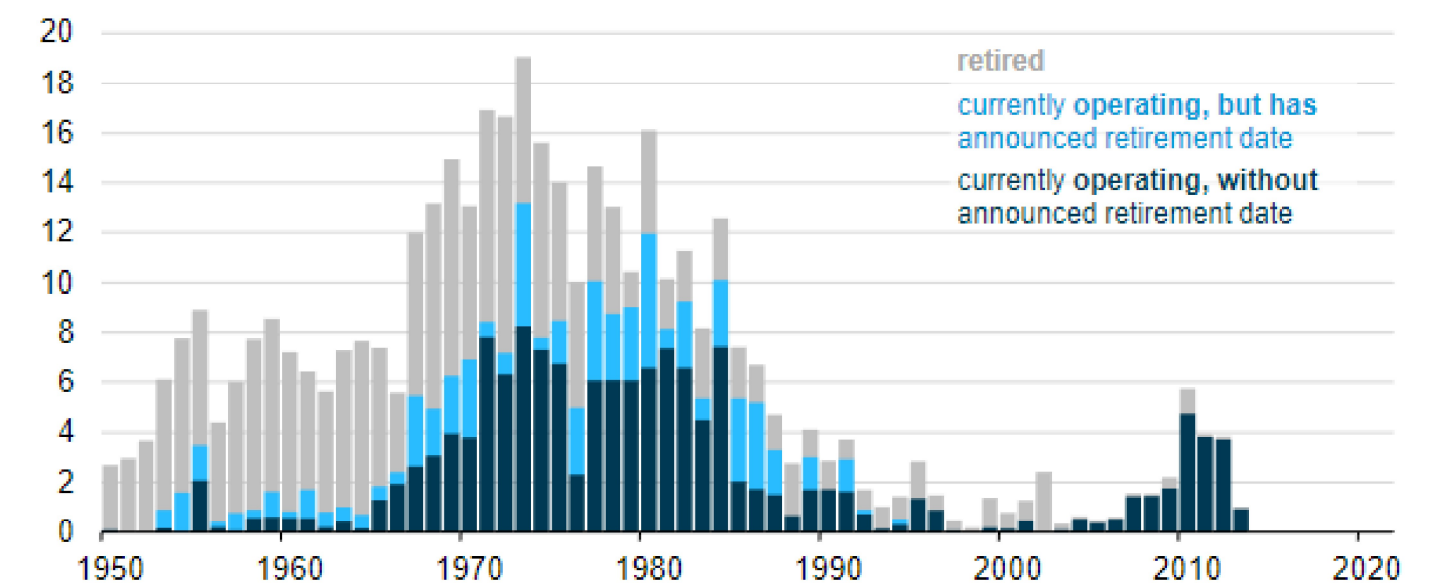


FIGURE A.2

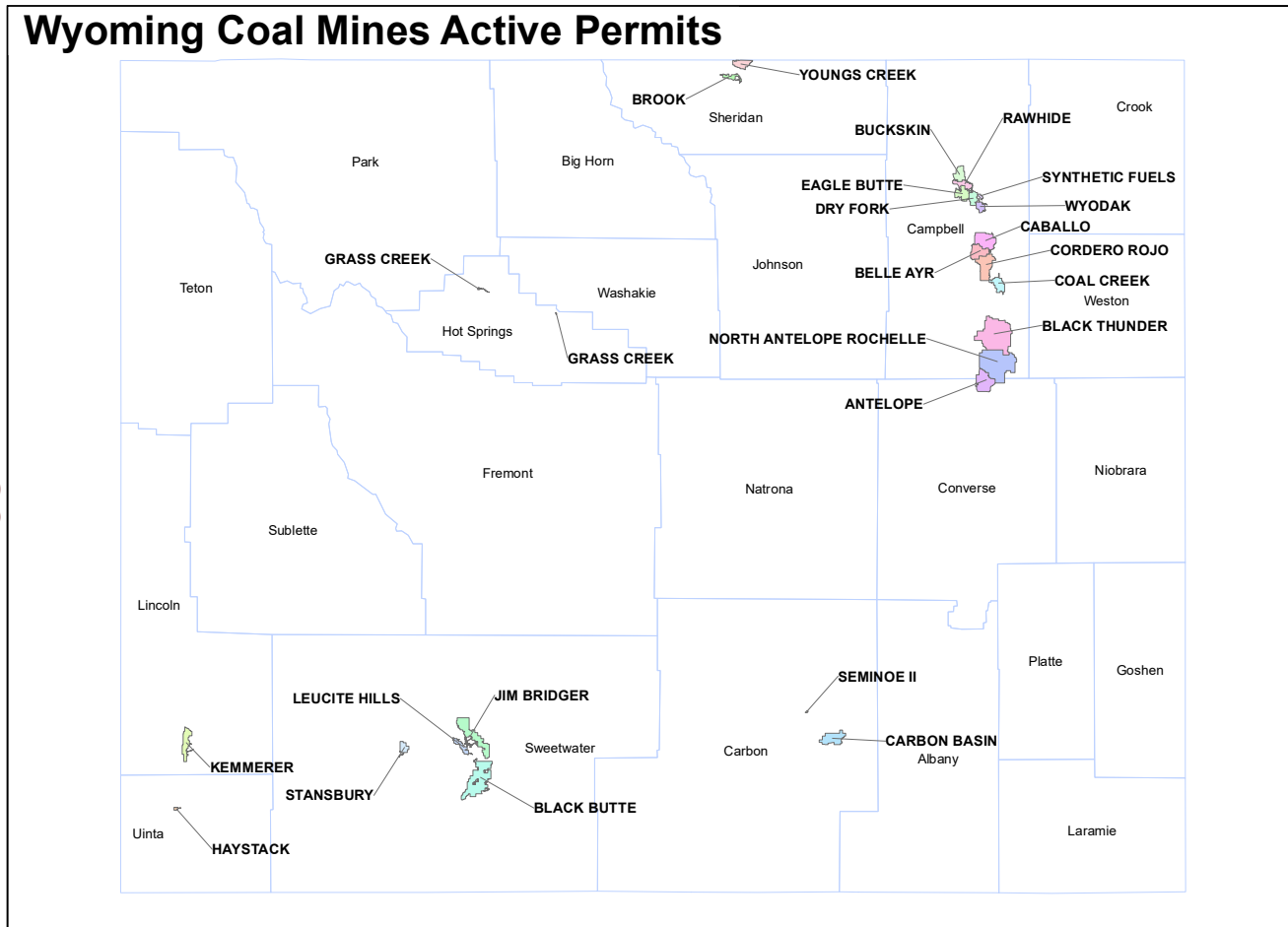


FIGURE A.3

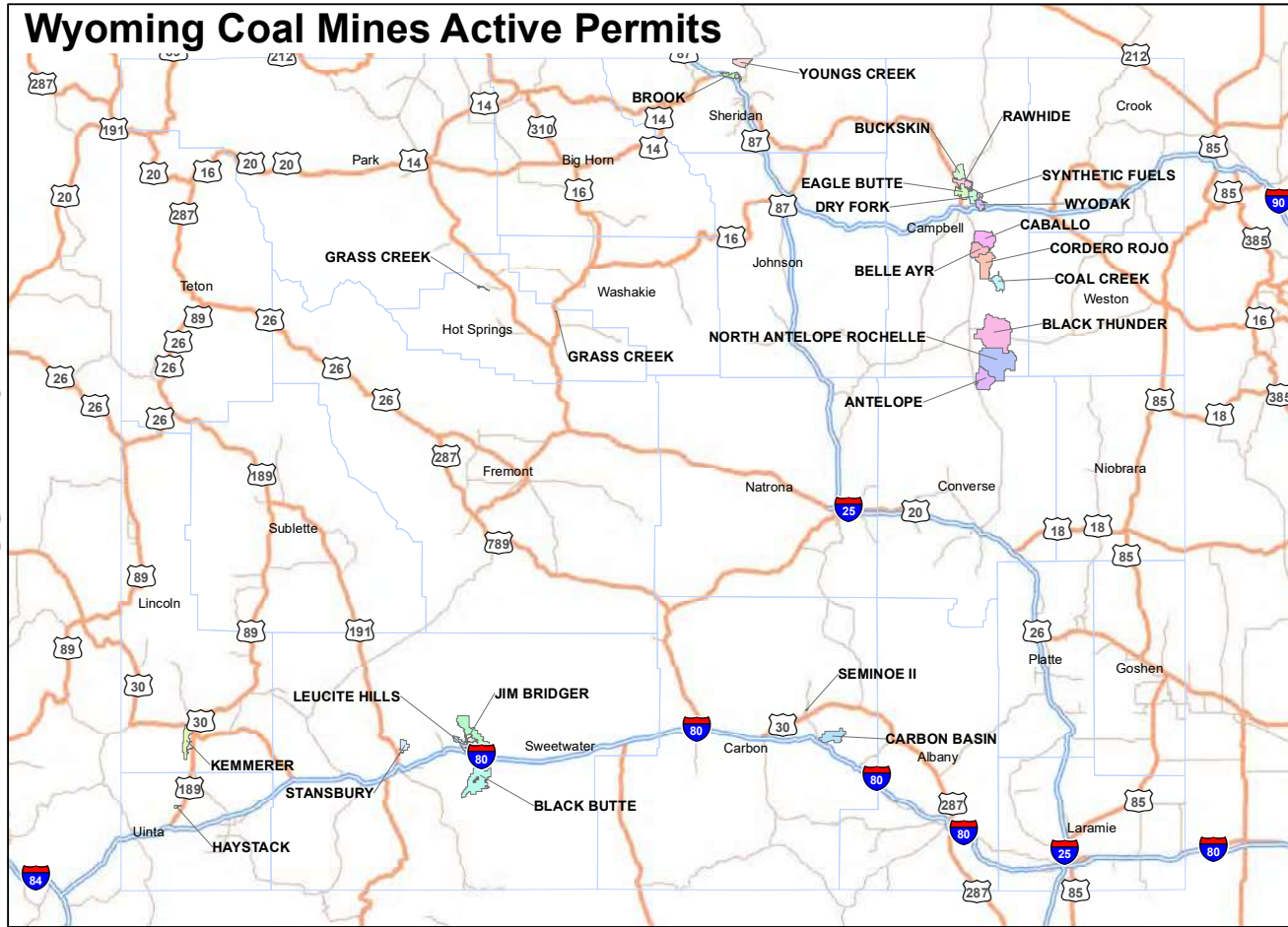


FIGURE A.4

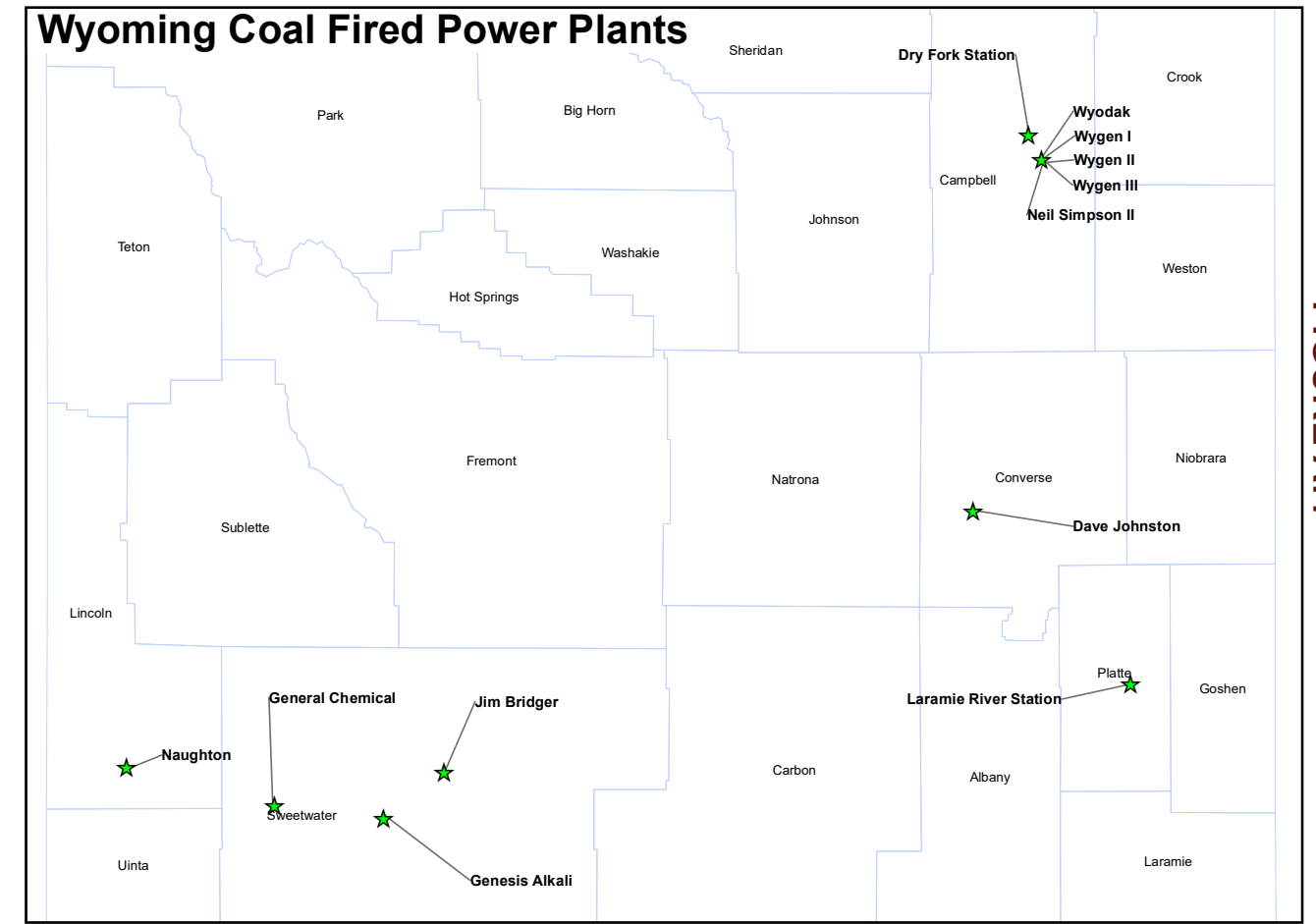
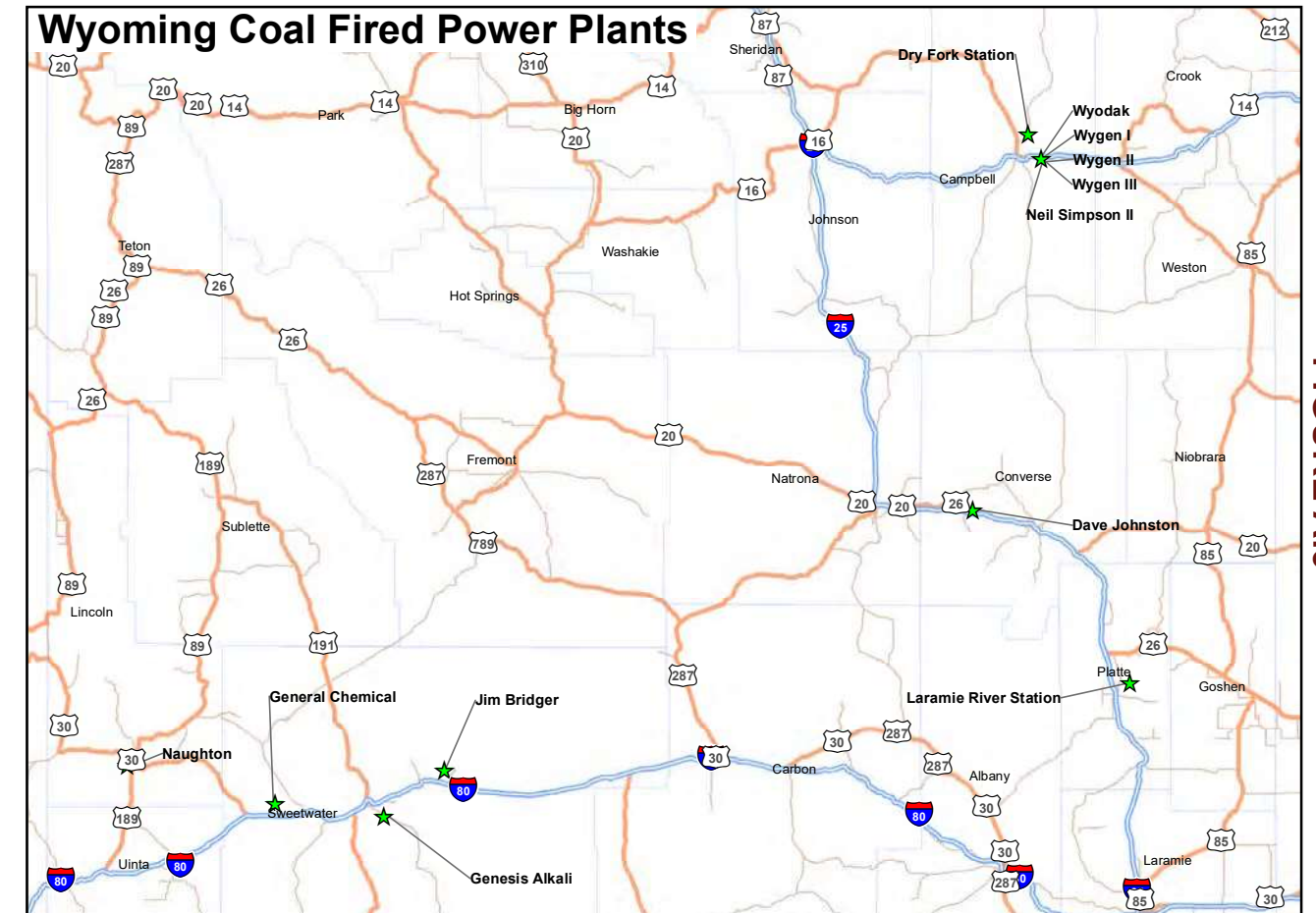


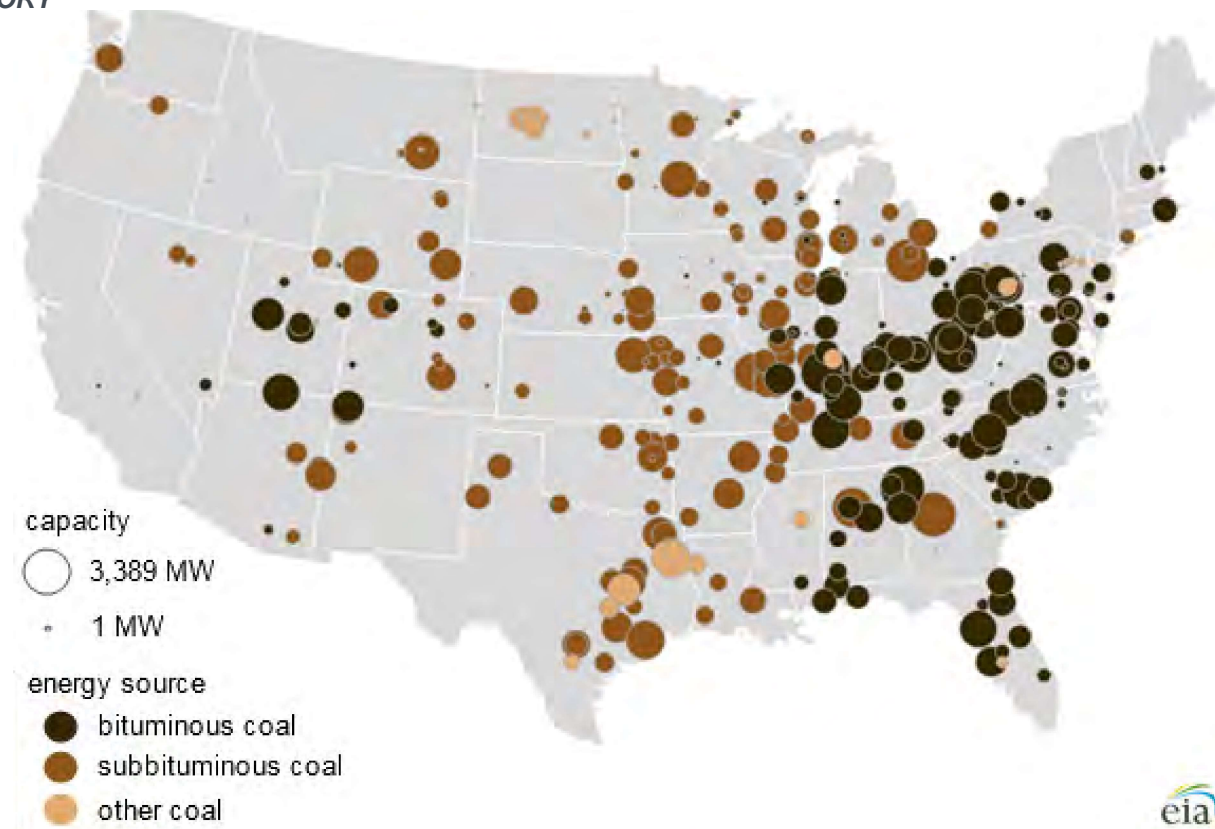
FIGURE A.5



## FIGURE E.4

DISTRIBUTION OF COAL PLANTS IN THE LOWER 48 STATES

SOURCED: US ENERGY INFORMATION ADMINISTRATION, PRELIMINARY MONTHLY ELECTRIC GENERATOR INVENTORY



### 1.3. PURPOSE & NEED

This study was undertaken to 1) present an Inventory of sites that have realistic potential for reuse post mining or coal fired power generation, and offer a perspective of their Valuation, 2) to identify and describe Prior Projects that have successfully employed a reuse strategy, 3) to describe the Pathways that exist in the current regulatory structure to seek an exception to demolition and reclamation, and 4) to identify Partnership and Funding Opportunities to enable a sensible and sustainable reuse strategy.

The report that follows is a compilation of a broad spectrum of information that intends to be immediately valuable to inform policy makers, regulators and industry participants facing decision points regarding retirement, decommissioning, and reclamation of valuable infrastructure associated with the coal industry. This content presented may offer insight to both general context and specific questions that are

being considered in every corner of the State; in the Capitol Building and by the Governor and the Legislature, in Managers offices and in the homes of coal industry workers.

Consideration of the issues presented to date has usually been undertaken within very narrow brackets, on an individual project or property level rather than a collective, broad spectrum and comprehensive approach that could begin to inform a Statewide policy and implementation strategy that could serve Wyoming during an energy transition that is likely to span decades.

Federal policy is serving to promote development of pathways, partnership and funding that supports reuse of mine lands. The Interagency Working Group on Coal and Power Plant Communities, Office of Clean Energy Demonstrations and other funding opportunities coming out of various offices of the Department of Energy and Economic Development Administration are advancing current policy.

Alongside the Department of Energy and the Economic Development Administration, many other federal agencies and private markets are investing at unprecedented levels in the development of a variety of new clean energy technologies including carbon management, hydrogen, nuclear, grid scale batteries and advanced manufacturing, many of which offer opportunities for diversification of industry in Wyoming. The DOE's \$500 million funding of the Clean Energy on Mine Lands (CEML) demonstrates a signal of policy and programmatic support for the concept of mine lands re-use.

The state government including the Wyoming Energy Authority and the Office of the Governor - Energy Policy Advisory Staff, the Wyoming Business Council, its Regional Director Staff and local Economic Development Organizations and the University of Wyoming - School of Energy Resources are similarly aligning with new energy technologies to diversify and strengthen the state's economy while pledging to reduce the carbon intensity of our energy industries. Reuse of coal industry facilities represent near-ideal locations to support the development of pilot projects, demonstration sites, and commercial deployment of CO2 Storage and Hydrogen Energy Hubs.

Wyoming's workers, businesses, environment and financial bottom line would benefit from the reuse of coal mine and coal power plant lands, assets and infrastructure.

***Efforts to develop a strategic framework that pursues policy, statute and regulation that result in reuse as a preferential pathway are encouraged to avoid unnecessary and regressive destruction of assets and infrastructure that would return lands to a lesser productive condition and value.***

## 1.4. METHODOLOGY

### 1.4.1. DEFINITIONS & EXCLUSIONS OF COAL RELATED INFRASTRUCTURE

For this inventory of coal industry related infrastructure, coal mines within the state of Wyoming were examined as well as coal fired power plants within the state of Wyoming that provide electricity to the power grid in-state as well as exported out-of-state. Two coal-fired power plants were also examined that provide electricity as an independent power source to trona mines in the southwest part of the state, which is a significant portion of the economy and job market in that region. Coal mines that are currently in operation as well as those that have been closed and are in the process of reclamation or have been re-used are examined in detail, including maps of surface ownership and publicly available infrastructure (roads, rail, powerlines, pipelines).

The sources for determining which coal mines to include are the Wyoming Department of Environmental Quality – Land Quality Division, the Wyoming State Mine Inspector's Office, the Wyoming State Geological Survey, and the Mine Safety and Health Administration. These sources provided data on surface ownership, permitting, coal production and employment. The sources for determining which power plants to include are the Wyoming Department of Environmental Quality – Air Quality Division and the United States Energy Information Administration. These sources provided data on plant ownership and operations, permitting, plant generating capacity and projected retirement dates.

Once the coal mines and power plants had been identified and located throughout the state, the types of infrastructure were narrowed to include those that, in the opinion of the author, would be attractive to potential re-use scenarios: land, roads, rail, power lines, pipelines and buildings. These types of infrastructure represent sunk costs for the current owners and operators of the



mines and power plants and are unlikely to be moved or sold to new owners, but would likely have to be scrapped in place or permanently removed for site reclamation. Personal property such as light duty vehicles, mobile equipment such as trucks, loaders, graders and shovels and draglines were not included as infrastructure suitable for re-use. **See Table 1B on the following page.**

#### **1.4.2. INFORMATIONAL SOURCES**

The intention of this inventory and valuation was to gather information from publicly available sources or directly from mine and power plant owners/operators and not to editorialize, opionate or otherwise generate new data. As such, wherever possible, original documents were sought out that had been filed with regulatory agencies or otherwise made publicly available by the mine or power plant owners. These original documents include annual reports, mine plans and adjudication files, power plant air quality permits, electrical utility Integrated Resource Plans and other published data from state regulatory agencies. Where original documents could not be found from the mine or power plant owners themselves, secondary sources were used to fill in gaps in data such as media reports on coal mine and power plant closures, employment numbers, and history of mine and power plant sites.

**TABLE 1.B RECLAMATION BOND AMOUNTS AND SELECT ASSESSED VALUES FOR WYOMING COAL MINES**

COAL MINE	PERMIT #	COMPANY	COUNTY	MINE STATUS
Belle Ayr	PT0214	Eagle Speciality Materials, LLC	Campbell	Active
Black Thunder	PT0233	Thunder Basin Coal Company, LLC	Campbell	Active
Buckskin	PT0500	Buckskin Mining Company	Campbell	Active
Caballo	PT0433	Peabody Caballo Mining, LLC	Campbell	Active
Coal Creek Mine	PT0483	Thunder Basin Coal Company, LLC	Campbell	Active
Cordero Rojo	PT0237	Navajo Transitional Energy Company, LLC (NTEC)	Campbell	Active
Dry Fork	PT0599	Western Fuels WY, Inc.	Campbell	Active
Eagle Butte	PT0428	Contura Coal West, LLC	Campbell	Active
North Antelope Rochelle (NARM)	PT0569	Peabody Powder River Mining, LLC	Campbell	Active
Rawhide	PT0240	Peabody Caballo Mining, LLC	Campbell	Active
Synthetic Fuels Mine	PT0486	Green Bridge Holdings, Inc.	Campbell	In Reclamation
Wyodak	PT0232	Wyodak Resources Development Corporation	Campbell	Active
Carbon Basin	PT0730	Arch of WY LLC	Carbon	In Reclamation
Seminole II	PT0377	Arch of WY LLC	Carbon	Active
Antelope	PT0525	Navajo Transitional Energy Company, LLC (NTEC)	Converse	Active
Grass Creek	PT0211	Spring Gulch Coal Co (The)	Hot Springs	Active
Kemmerer	PT0379	Kemmerer Operations, LLC	Lincoln	Inactive
Brook	PT0841	Brook Mining Company, LLC	Sheridan	Non-Development
Youngs Creek	PT0407	Navajo Transitional Energy Company, LLC (NTEC)	Sheridan	Active
Black Butte	PT0467	Black Butte Coal Company	Sweetwater	Active
Jim Bridger	PT0338	Bridger Coal Company	Sweetwater	In Reclamation
Leucite Hills	PT0520	Black Butte Coal Company	Sweetwater	In Reclamation
Stansbury	PT0264	Rocky Mountain Coal Company	Sweetwater	Active
Haystack	PT0786	Westmoreland Haystack Mining, LLC	Uinta	Temporary Cessation

Notes: Area Bond, Incremental Bond and Total Bond amounts are sourced directly from the most recent Annual Report submitted to WDEQ – LQD by the facility operator or permit holder. Contingency/Miscellaneous have been adjusted slightly to account for variations in reporting standards and timing on annual calculation or reconciliation of bond releases.

Area Bond - the area bond specifies the costs associated with bringing the main coal pits up to the bond topography also known as the "Interim" post mining topography (PMT). Specifically, these costs include the equipment and materials for backfilling the pits and final grading of the backfill. Interim post-mining topography (PMT) is designed to maximize available backfill area and minimize the disturbance of lands that are in permanent reclamation and native borrow area.

Incremental Bond - the incremental bond specifies the costs associated with reclaiming all disturbed areas within the permit area except the main coal pit area which was calculated in the Area Bond. These costs include overburden redistribution, demolition of facilities, removal of monitoring structures, scarification of compacted surfaces, topsoil redistribution on all disturbed surfaces and revegetation of all disturbed lands. Also included in this section are monies to cover reclamation of the anticipated exploratory drilling program, miscellaneous items and contingencies.

Data Sources - Bond data from Current Coal Mine Annual Reports on file with the WDEQ Land Quality Division for each respective Wyoming coal mine with an active mine permit. Assessed values from County level public tax records.

**TABLE 1.B RECLAMATION BOND AMOUNTS AND SELECT ASSESSED VALUES FOR WYOMING COAL MINES (CONTINUED)**

RECLAMATION BOND - AMOUNTS				ASSESSED- SELECT ASSET CATEGORIES & TYPES		
TOTAL	AREA BOND	INCREMENTAL BOND	"CONTINGENCIES/ MISCELLANEOUS"	ORIGINAL COST	"REPLACEMENT COST - NEW"	PRESENT WORTH -
\$ 92,759,500	\$ 55,146,900	\$ 17,278,000	\$ 20,334,600	\$ 21,765,754	\$ 28,273,659	\$ 21,991,260
\$ 421,369,000	\$ 252,611,000	\$ 66,591,800	\$ 102,166,200	\$ 20,915,059	\$ 27,673,191	\$ 20,482,710
\$ 128,546,086	\$ 65,770,692	\$ 14,448,445	\$ 48,326,949	\$ 26,852,151	\$ 43,626,712	\$ 20,104,550
\$ 143,353,337	\$ 85,110,216	\$ 15,553,931	\$ 42,689,190	\$ 3,941,713	\$ 4,862,638	\$ 3,594,340
\$ 22,691,600	\$ 7,952,400	\$ 8,877,100	\$ 5,862,100	\$ 8,420,365	\$ 11,161,036	\$ 6,616,210
\$ 140,127,000	\$ 77,518,000	\$ 32,838,000	\$ 29,771,000	\$ 123,586,281	\$ 252,812,752	\$ 38,889,430
\$ 34,100,000	\$ 18,069,257	\$ 8,410,449	\$ 7,620,294	\$ 61,122,380	\$ 106,903,658	\$ 50,654,040
\$ 123,230,000	\$ 61,937,300	\$ 13,899,000	\$ 47,393,700	\$ 6,473,685	\$ 8,373,127	\$ 6,553,340
\$ 291,318,287	\$ 168,813,669	\$ 64,061,254	\$ 58,443,364	\$ 118,905,976	\$ 153,360,054	\$ 92,354,150
\$ 32,878,000	\$ 16,179,356	\$ 7,216,872	\$ 9,481,772	\$ 11,244,012	\$ 14,538,143	\$ 10,320,430
\$ 584,167	N/A	\$ 452,730	\$ 131,437	\$ 80,310	\$ 114,358	\$ 60,690
\$ 25,756,918	\$ 10,884,648	\$ 9,226,127	\$ 5,646,143	\$ 46,421,870	\$ 77,323,325	\$ 28,828,330
\$ 745,443	N/A	\$ 95,443	\$ 650,000	N/A	N/A	N/A
\$ 1,026,192	N/A	\$ 181,134	\$ 845,058	N/A	N/A	N/A
\$ 106,783,000	\$ 45,298,000	\$ 16,797,000	\$ 44,688,000	\$ 32,310,599	\$ 58,747,839	\$ 16,908,892
\$ 299,505	\$ 87,882	\$ 110,185	\$ 101,438	N/A	N/A	N/A
\$ 66,350,130	\$ 22,553,082	\$ 11,285,595	\$ 32,511,453	\$ 38,654,872	\$ 65,129,340	\$ 28,699,527
\$ 1,248,015	\$ 457,913	\$ 524,776	\$ 265,326	N/A	N/A	N/A
\$ 229,000	N/A	N/A	N/A	N/A	N/A	N/A
\$ 95,428,911	\$ 38,193,518	\$ 36,947,873	\$ 20,287,520	\$ 38,654,872	\$ 65,129,340	\$ 28,699,527
\$ 155,173,109	\$ 60,497,270	\$ 30,607,626	\$ 64,068,213	\$ 38,654,872	\$ 65,129,340	\$ 28,699,527
\$ 4,585,000	N/A	\$ 2,918,593	\$ 1,666,407	N/A	N/A	N/A
\$ 1,938,681	N/A	\$ 1,557,173	\$ 381,508	N/A	N/A	N/A
\$ 4,384,251	\$ 2,168,270	\$ 637,131	\$ 1,578,850	N/A	N/A	N/A
<b>\$ 1,894,905,132</b>	<b>\$ 989,249,373</b>	<b>\$ 360,516,237</b>	<b>\$ 544,910,522</b>	<b>\$ 598,004,770</b>	<b>\$ 983,158,511</b>	<b>\$ 403,456,952</b>

Notes: Area Bond, Incremental Bond and Total Bond amounts are sourced directly from the most recent Annual Report submitted to WDEQ – LQD by the facility operator or permit holder. Contingency/Miscellaneous have been adjusted slightly to account for variations in reporting standards and timing on annual calculation or reconciliation of bond releases.

Area Bond - the area bond specifies the costs associated with bringing the main coal pits up to the bond topography also known as the "Interim" post mining topography (PMT). Specifically, these costs include the equipment and materials for backfilling the pits and final grading of the backfill. Interim post-mining topography (PMT) is designed to maximize available backfill area and minimize the disturbance of lands that are in permanent reclamation and native borrow area.

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Data Sources - Bond data from Current Coal Mine Annual Reports on file with the WDEQ Land Quality Division for each respective Wyoming coal mine with an active mine permit. Assessed values from County level public tax records.

## CHAPTER TWO INVENTORY & VALUATION

### 2.1 OVERVIEW

Presented in this chapter of the report are inventories and valuations for operating coal mines and inventories for power plants in the state of Wyoming.

Inventories for Mines and Power Plants are based on publicly available datasets from government, regulatory, academic and industry sources to identify the occurrence of assets including land, permanent improvements, transportation infrastructure and utilities related to coal mining and coal-fired power generation and presented for each Mine and each Power Plant as Property Summaries in Sections 2.2 and 2.3 respectively. GIS based datasets were accessed and assembled for spatial identification of all critical property attributes and presented in **Appendix A** for each Mine and each Power Plant.

Provision of relevant Valuations for Mines and Power Plants proved to be the most challenging aspect of the study. In keeping with the stated intent to identify, access and report reliable and repeatable data sources for information presented in this report, publicly available tax assessment records were determined to be the most appropriate statements of value within the context of the study.

#### 2.1.1. VALUATIONS

**The following provides Context and Methodology for Valuations of Mines and Power Plants.** Summaries of property tax assessment data for Mines were acquired from the Campbell County Assessor's Office for the 12 coal mines that are currently operating in Campbell County, Wyoming. As information

relating to tax assessments provided by property owners or taxpayers is confidential, the values reported are at the Category and Type level as available through public facing tax records. This data provided the foundation of valuations for coal mines across the state. Reporting mine asset values from this basis, and in consideration of the stated intention to evaluate assets and infrastructure for post mining reuse scenarios, is further complicated due to inconsistencies in assessment practices employed; whether on cost or income approach and if economic obsolescence is considered in reported values. **Mine valuations follow in Appendix C.**

Tables are provided in **Appendix C** for each Mine considered in this report. State statute and subsequent regulatory policy creates assignment of four Property Categories:

- Taxable
- Fire Equipment
- Pollution Control
- Mining - Surface

Within these categories, three specific Property Types were identified as being pertinent to the aims of this report in that they can reasonably be envisioned to have a role in a non-mining reuse scenario, the selected Property Types reported are:

- Buildings
- Site Improvements
- Plant Machinery & Equipment.

Purposely excluded from reporting of the assessed value records were Property Types:

- Mobile Machinery and Equipment
- Vehicles
- All Other Personal Property
- Materials and Supplies
- Current Works in Progress as taxable assets of these Types are viewed by the author as having only narrow applicability to the traditional extractive coal mining industry with

no reasonable expectation of value in a post mining reuse scenario.

Category and Type subtotals and totals are presented for each subject Mine and aggregated for all Mines statewide.

Attempts to replicate the process standards and sources for statements of values for Power Plants were unsuccessful. In general, determining values for property employed specifically in Coal Mining or Coal Power Generation is difficult to obtain from outside the ownership and control structure of companies involved. Within the context of this study this has proven to be particularly true in reference to Power Plants valuation. Utilization scenarios of assets typical of coal Power Plants, particularly coal receipt and handling facilities and boiler and turbine equipment are difficult to ascertain outside of their original and current use.

Adding complexity to the process standard of reliance on assessed value data is the fact that typically the Wyoming State Department of Revenue is responsible for assessment of Power Plants where County Assessors are responsible for Coal Mines. The report author was unable to locate or access public facing assessed values for Power Plants within the scope of the study. As such, no statements of value are reported for Power Plants.

### 2.2 INVENTORY - COAL MINES

#### SUMMARIES FOR COAL MINES

The primary data acquisition element for the Coal Mine inventory aspect of this project was initiated by contacting the Wyoming Department of Environmental Quality Land Quality Division (WDEQ LQD) District 1 office in Cheyenne, Wyoming, with an inquiry about the availability of public records for active coal mines in the state of Wyoming.

The LQD office first provided a listing of all coal mines in Wyoming with active mining permits. This list indicated that there are 24 coal mines in the state with active mine permits on file with

the WDEQ LQD, 13 of which are in the Powder River Basin (PRB).

After review of the list of active mines in the state, a series of electronic requests were submitted to the WDEQ LQD Records and Data Management office to procure the current Annual Reports and Mine Plans for all 24 coal mines. Upon receipt of these documents, a thorough review of them was conducted, and the information and datasets that were pertinent to fulfilling the goals (tasks) of this project were identified and extracted. The Mine Permits or renewals thereof, Annual Reports and Mine Plans (with particular focus on Reclamation Plans) provided background information necessary to characterize and uniquely identify each facility. In addition to general information for a coal mine provided in the Annual Report, the facility infrastructure information most critical to this project was found in the Reclamation Performance Bond report section provided as an appendix, a subfolder or other similarly identified addendum, where reclamation bond calculation worksheets were found.

## 2.2.1. PROPERTY SPOTLIGHT

Coal Creek Mine is currently owned and operated by Thunder Basin Coal Company (a subsidiary of Arch Coal, Inc) is in Campbell County, Wyoming, located 18.2 miles north of the town of Wright, population 1,644 and 31 miles south of the town of Gillette, population 33,403. The past year mining capacity was 1,994,359 million tons per year with a workforce of 102 employees, having had peak production of 11,454,000 tons per year and maximum of 161 employees.

The Coal Creek Mine began operations in 1979 and is typical of Wyoming mines constructed during the significant build out of mining capacity spanning the decade beginning in the mid-1970's and ending in the mid-1980's. Coal Creek is notable in the context of this study as Arch publicly announced the intended closure of this mine in early 2021 stating that they would undertake "...commence full reclamation work in 2022, including the demolition of the facilities...". While significant efforts have been undertaken to hasten required pit reclamation, the complete closure of the mine has been delayed, for a time at least, due to increases in post pandemic demand and accompanying revenues.

Photos of select assets and infrastructure of the Coal Creek Mine that could reasonably be considered in a post mining industrial re-use scenario are presented here. These facilities are typical of the smallest class of mines, based on historic peak production levels, considered in this study.

### PHOTOS 1 – 6: Guard Shack, Offices, and Crew Change Room - Exterior & Interior

Controlled Access with staffed Guard Shack and mine entrance. Office and Change Room building overall dimensions 100'W x 140'L x 14'H (14,000 sq.ft.). Steel frame construction with steel exterior cladding and roofing. Office section ~ 7,000 sq.ft. and Change Room section ~ 7,000 sq.ft.



#1 GUARD SHACK & OFFICE



#4 OFFICE INTERIOR- CONFERENCE ROOM



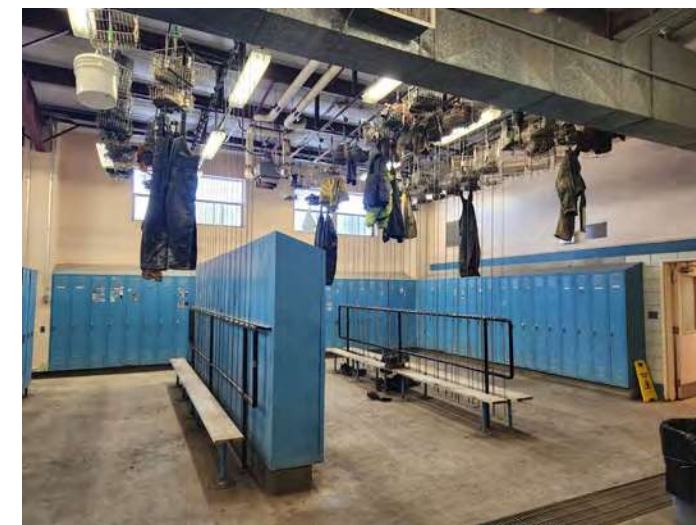
#2 OFFICE INTERIOR, ENTRY, & MAIN HALLWAY



#5 CREW CHANGING ROOM



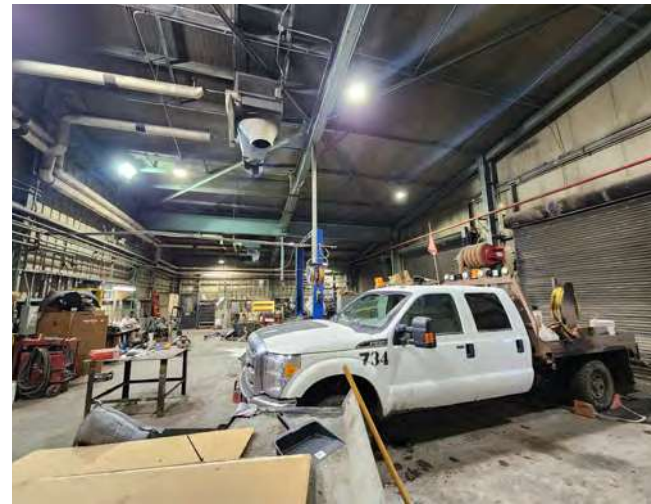
#3 OFFICE INTERIOR, ADMINISTRATION & ENGINEERING OFFICES



#6 CREW CHANGING ROOM



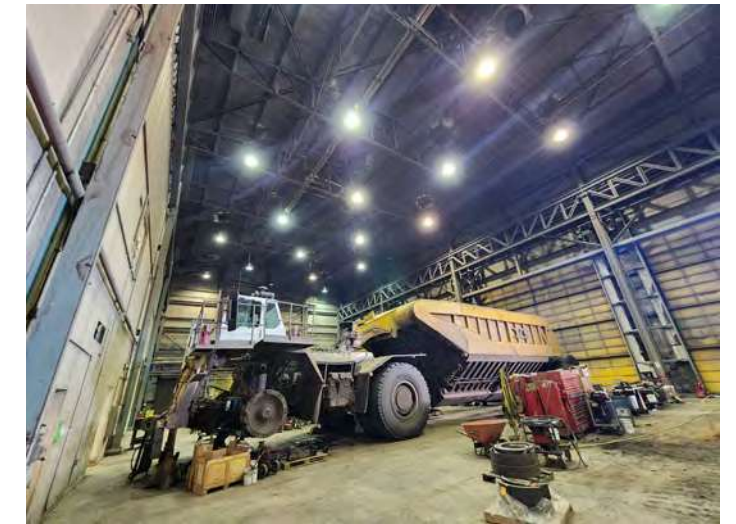
#7 WAREHOUSE & LIGHT DUTY SHOP



#10 LIGHT DUTY SHOPS, INTERIOR



#13 HEAVY INDUSTRIAL MAINTENANCE & REPAIR



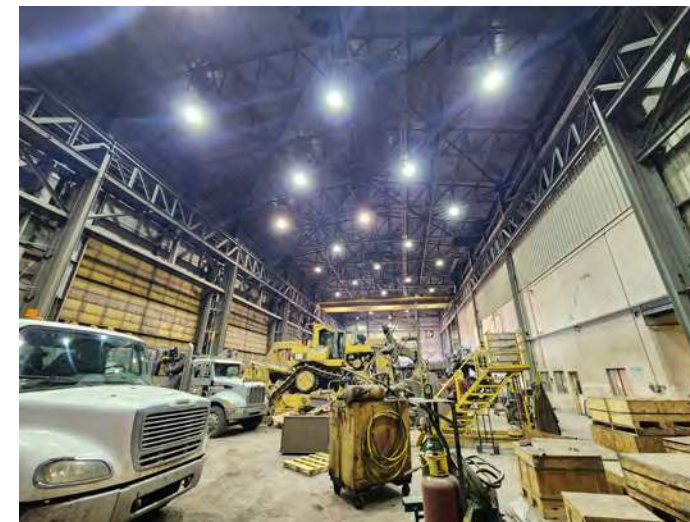
#16 HEAVY INDUSTRIAL MAINTENANCE & REPAIR, INTERIOR



#8 WAREHOUSE & LIGHT DUTY SHOP, FENCED STORAGE

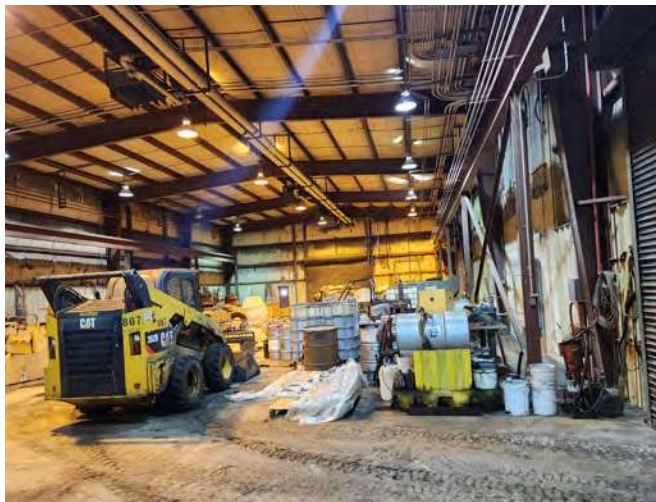


#11 LIGHT DUTY SHOPS, INTERIOR

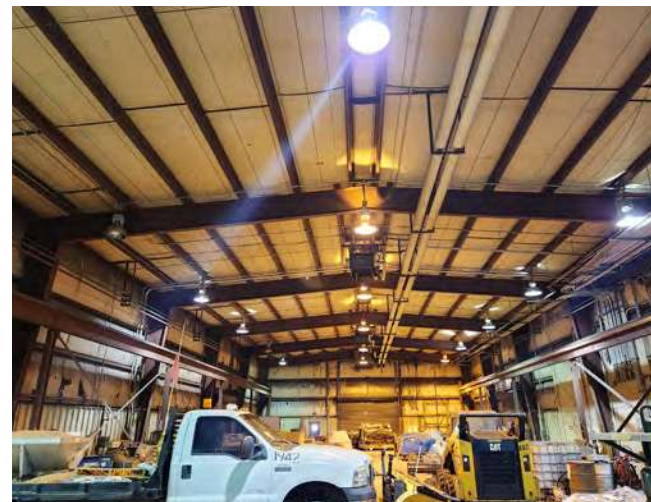


#14 HEAVY INDUSTRIAL MAINTENANCE & REPAIR, INTERIOR

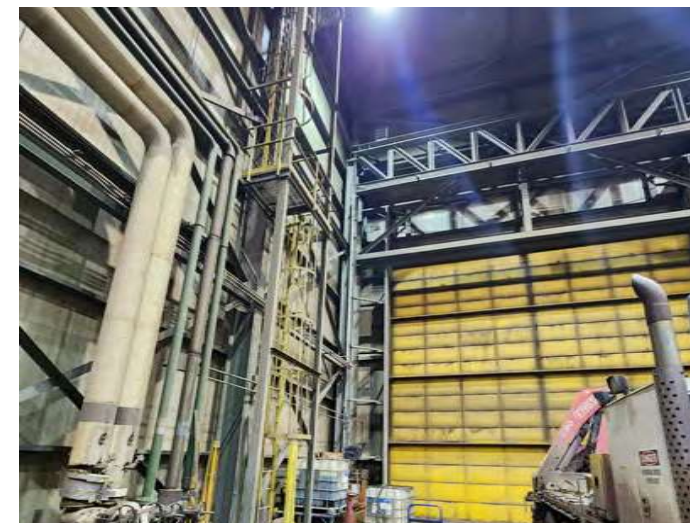
**PHOTOS 13 - 17:** Heavy Industrial Maintenance and Repair – Exterior & Interior  
Heavy Industrial Maintenance and Repair shops 220'W (irregular) x 270'L x 54'H (max) (57,000 sq.ft.). Steel frame construction with steel exterior cladding and roofing. Multiple 32'H x 30'W O.H. doors. Extreme service footings, foundations and floors, 8" – 12" steel reinforced floors. Wash bay. Very well equipped with lights, electrical service, heat, venting, service air and bridge cranes.



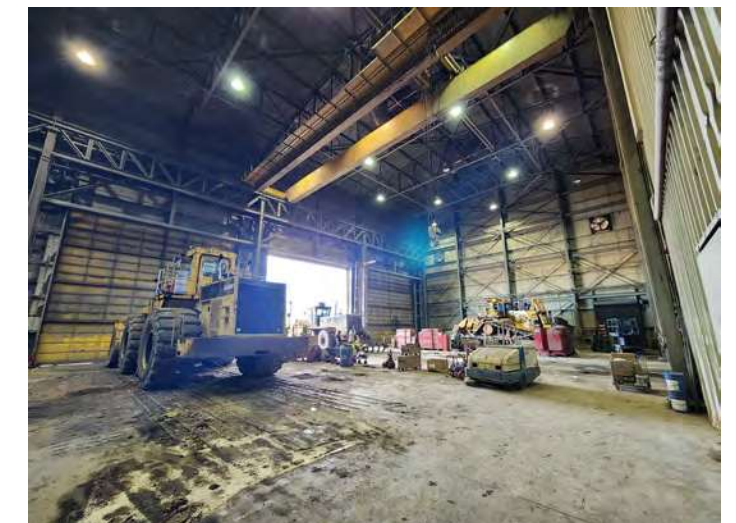
#9 WAREHOUSE INTERIOR



#12 LIGHT DUTY SHOPS, INTERIOR



#15 HEAVY INDUSTRIAL MAINTENANCE & REPAIR, INTERIOR



#17 HEAVY INDUSTRIAL MAINTENANCE & REPAIR, INTERIOR

**PHOTOS 7 – 12:** Warehouse, Light Duty Shops Interior & Fenced Storage

Warehouse and Light Duty Shops building overall dimensions 60'W x 220'L x 22'H (13,200 sq.ft.) Steel frame construction with steel exterior cladding and roofing. Multiple 12'H and 14'H O.H. doors. Heavy footings and foundations, 4' – 8" steel reinforced floors. Very well equipped with lights, electrical service, heat, venting, service air and bridge cranes. ~ 5.0 acres fenced outdoor storage.



#19 BULK FUEL STORAGE & DISPENSING



#21 COAL CONVEYING, STORAGE & RAIL LOAD-OUT



#18 ELECTRICAL SUBSTATION

**PHOTO 18:** Utility owned 69KV 30MW substation with 13,800/7,800 to 480 VAC three phase power.

**PHOTO 19:** Bulk Fuel Storage and Dispensing ~ 40,000 gallon bulk fuel storage and high flow dispensing.

**PHOTO 20-21:** Coal Crushing, Sampling, Conveying, Storage and Rail Load-Out Primary crushing from ROM to 2" minus with auto sampler and aggregator. Two x 12,000 ton silo storage, continuous weigh/batch load-out at ~ 14,000 TPH.



#20 COAL CRUSHING, SAMPLING & CONVEYING

2.2.2. TABLE 2. COAL MINE ACREAGE & DISTURBANCE							
PERMIT #	COAL MINE	COMPANY	COUNTY	MINE STATUS	"SURFACE OWNERSHIP"	"MINE PERMIT"	"DISTURBANCE - TOTAL MINE LIFE"
PT0214	Belle Ayr	Eagle Speciality Materials, LLC	Campbell	Active	11,577	13,408	7,716
PT0233	Black Thunder	Thunder Basin Coal Company, LLC	Campbell	Active	15,688	62,066	33,388
PT0500	Buckskin	Buckskin Mining Company	Campbell	Active	12,345	9,146	5,560
PT0433	Caballo	Peabody Caballo Mining, LLC	Campbell	Active	17,872	21,269	9,029
PT0483	Coal Creek Mine	Thunder Basin Coal Company, LLC	Campbell	Active	11,481	9,741	4,587
PT0237	Cordero Rojo	Navajo Transitional Energy Company, LLC	Campbell	Active	24,531	22,537	14,866
PT0599	Dry Fork	Western Fuels WY, Inc.	Campbell	Active	7,558	7,134	2,224
PT0428	Eagle Butte	Contura Coal West, LLC	Campbell	Active	10,141	10,667	5,856
PT0676	Izita	Thunder Basin Coal Company, LLC	Campbell	In Reclamation	None*	1,831	432
PT0569	North Antelope Rochelle	Peabody Powder River Mining, LLC	Campbell	Active	19,743	65,805	31,300
PT0240	Rawhide	Peabody Caballo Mining, LLC	Campbell	Active	7,911	9,231	4,296
PT0486	Synthetic Fuels Mine	Green Bridge Holdings, Inc.	Campbell	In Reclamation	653	930	447
PT0232	Wyodak	Wyodak Resources Development Corporation	Campbell	Active	3,054	4,974	2,166
PT0730	Carbon Basin	Arch of WY LLC	Carbon	In Reclamation	15,323	17,154	179
PT0377	Seminole II	Arch of WY LLC	Carbon	Active	None*	211	3,702
PT0525	Antelope	Navajo Transitional Energy Company, LLC	Converse	Active	21,809	22,538	12,579
PT0211	Grass Creek	Spring Gulch Coal Co (The)	Hot Springs	Active	1,285	294	68
PT0379	Kemmerer	Kemmerer Operations, LLC	Lincoln	Inactive	8,313	13,441	5,116
PT0841	Brook	Brook Mining Company, LLC	Sheridan	Non-Development	3,787	4,549	0
PT0407	Youngs Creek	Navajo Transitional Energy Company, LLC	Sheridan	Active	4,750	7,822	141
PT0467	Black Butte	Black Butte Coal Company	Sweetwater	Active	28,369	43,384	13,343
PT0338	Jim Bridger	Bridger Coal Company	Sweetwater	In Reclamation	12,987	28,681	11,009
PT0520	Leucite Hills	Black Butte Coal Company	Sweetwater	In Reclamation	None*	6,729	2,217
PT0264	Stansbury	Rocky Mountain Coal Company	Sweetwater	Active	6,260	5,501	172
PT0786	Haystack	Westmoreland Haystack Mining, LLC	Uinta	Temporary Cessation	None*	773	205
<b>TOTAL ACRES =</b>					<b>245,437</b>	<b>389,817</b>	<b>170,598</b>

\*"None" as an entry in the Surface ownership column means that none of the surface acreage within the mine boundary is owned by the Coal Mine Company.

SOURCES:

- Permit #, Coal Mine and Company name, County and Mine Status for Wyoming Coal Mines with active permits was provided by WDEQ Land Quality Division, District 1 - Cheyenne Office.
- Ownership acreage sourced through the Wyoming Statewide Parcel Viewer and respective County Assessor records.
- Mine Permit acreage sourced through WDEQ LQD Map Viewer.
- Disturbance-Total Mine Life acreage from current Coal Mine Annual Report on file with the WDEQ Land Quality Division for each respective Wyoming coal mine with an active mine permit.

2.2.3. TABLE 3. RECLAMATION BOND DETAILS								
PERMIT #	COAL MINE	COMPANY	COUNTY	MINE STATUS	TOTAL	AREA BOND	INCREMENTAL BOND	"CONTINGENCIES/MISCELLANEOUS"
PT0214	Belle Ayr	Eagle Speciality Materials, LLC	Campbell	Active	\$ 92,759,500	\$ 55,146,900	\$ 17,278,000	\$ 20,334,600
PT0233	Black Thunder	Thunder Basin Coal Company, LLC	Campbell	Active	\$ 421,369,000	\$ 252,611,000	\$ 66,591,800	\$ 102,166,200
PT0500	Buckskin	Buckskin Mining Company	Campbell	Active	\$ 128,546,086	\$ 65,770,692	\$ 14,448,445	\$ 48,326,949
PT0433	Caballo	Peabody Caballo Mining, LLC	Campbell	Active	\$ 143,353,337	\$ 85,110,216	\$ 15,553,931	\$ 42,689,190
PT0483	Coal Creek Mine	Thunder Basin Coal Company, LLC	Campbell	Active	\$ 22,691,600	\$ 7,952,400	\$ 8,877,100	\$ 5,862,100
PT0237	Cordero Rojo	Navajo Transitional Energy Company, LLC (NTEC)	Campbell	Active	\$ 140,127,000	\$ 77,518,000	\$ 32,838,000	\$ 29,771,000
PT0599	Dry Fork	Western Fuels WY, Inc.	Campbell	Active	\$ 34,100,000	\$ 18,069,257	\$ 8,410,449	\$ 7,620,294
PT0428	Eagle Butte	Contura Coal West, LLC	Campbell	Active	\$ 123,230,000	\$ 61,937,300	\$ 13,899,000	\$ 47,393,700
PT0676	Izita	Thunder Basin Coal Company, LLC	Campbell	In Reclamation	\$ 454,680	\$ 216,000	\$ 216,000	\$ 22,680
PT0569	North Antelope Rochelle (NARM)	Peabody Powder River Mining, LLC	Campbell	Active	\$ 291,318,287	\$ 168,813,669	\$ 64,061,254	\$ 58,443,364
PT0240	Rawhide	Peabody Caballo Mining, LLC	Campbell	Active	\$ 32,878,000	\$ 16,179,356	\$ 7,216,872	\$ 9,481,772
PT0486	Synthetic Fuels Mine	Green Bridge Holdings, Inc.	Campbell	In Reclamation	\$ 584,167	N/A	\$ 452,730	\$ 131,437
PT0232	Wyodak	Wyodak Resources Development Corporation	Campbell	Active	\$ 25,756,918	\$ 10,884,648	\$ 9,226,127	\$ 5,646,143
PT0730	Carbon Basin	Arch of WY LLC	Carbon	In Reclamation	\$ 745,443	N/A	\$ 95,443	\$ 650,000
PT0377	Seminole II	Arch of WY LLC	Carbon	Active	\$ 1,026,192	N/A	\$ 181,134	\$ 845,058
PT0525	Antelope	Navajo Transitional Energy Company, LLC (NTEC)	Converse	Active	\$ 106,783,000	\$ 45,298,000	\$ 16,797,000	\$ 44,688,000
PT0211	Grass Creek	Spring Gulch Coal Co (The)	Hot Springs	Active	\$ 299,505	\$ 87,882	\$ 110,185	\$ 101,438
PT0379	Kemmerer	Kemmerer Operations, LLC	Lincoln	Inactive	\$ 66,350,130	\$ 22,553,082	\$ 11,285,595	\$ 32,511,453
PT0841	Brook	Brook Mining Company, LLC	Sheridan	Non-Development	\$ 1,248,015	\$ 457,913	\$ 524,776	\$ 265,326
PT0407	Youngs Creek	Navajo Transitional Energy Company, LLC (NTEC)	Sheridan	Active	\$ 229,000	N/A	N/A	N/A
PT0467	Black Butte	Black Butte Coal Company	Sweetwater	Active	\$ 95,428,911	\$ 38,193,518	\$ 36,947,873	\$ 20,287,520
PT0338	Jim Bridger	Bridger Coal Company	Sweetwater	In Reclamation	\$ 155,173,109	\$ 60,497,270	\$ 30,607,626	\$ 64,068,213
PT0520	Leucite Hills	Black Butte Coal Company	Sweetwater	In Reclamation	\$ 4,585,000	N/A	\$ 2,918,593	\$ 1,666,407
PT0264	Stansbury	Rocky Mountain Coal Company	Sweetwater	Active	\$ 1,938,681	N/A	\$ 1,557,173	\$ 381,508
PT0786	Haystack	Westmoreland Haystack Mining, LLC	Uinta	Temporary Cessation	\$ 4,384,251	\$ 2,168,270	\$ 637,131	\$ 1,578,850
					<b>\$ 1,895,359,812</b>	<b>\$ 989,465,373</b>	<b>\$ 360,732,237</b>	<b>\$ 544,933,202</b>

NOTE: Area Bond, Incremental Bond and Total Bond values are sourced directly from the most recent Annual Report submitted to WDEQ – LQD by the facility operator or permit holder. Contingency/Miscellaneous have been adjusted slightly to account for variations in reporting standards and timing on annual calculation or reconciliation of bond releases.

Area Bond - the area bond specifies the costs associated with bringing the main coal pits up to the bond topography also known as the "Interim" post mining topography (PMT). Specifically, these costs include the equipment and materials for backfilling the pits and final grading of the backfill. Interim post-mining topography (PMT) is designed to maximize available backfill area and minimize the disturbance of lands that are in permanent reclamation and native borrow area.

Incremental Bond - the incremental bond specifies the costs associated with reclaiming all disturbed areas within the permit area except the main coal pit area which was calculated in the Area Bond. These costs include overburden redistribution, demolition of facilities, removal of monitoring structures, scarification of compacted surfaces, topsoil redistribution on all disturbed surfaces and revegetation of all disturbed lands. Also included in this section are monies to cover reclamation of the anticipated exploratory drilling program, miscellaneous items and contingencies.

SOURCES: All data from Current Coal Mine Annual Reports on file with the WDEQ Land Quality Division for each respective Wyoming coal mine with an active mine permit.

## 2.2.4. CAMPBELL COUNTY

### 2.2.4.1 BELLE AYR COAL MINE

Belle Ayr Coal Mine is located in Campbell County, Wyoming, 18 miles south of the town of Gillette, population 33,403 and 31 miles north of the town of Wright, population 1,644. The mine is owned and operated by Eagle Specialty Materials and its current mining capacity is 14.4 million tons per year with a workforce of 256 employees.

The Belle Ayr Mine began operations in 1972 and is the oldest, non-captive mine in the Powder River Basin. The Belle Ayr mine has changed hands many times through mergers and sales. Previous owners include AMAX, Cyprus AMAX, RAG and Foundation Coal. The current owner, Eagle Specialty Materials LLC, is also the owner and operator of the Eagle Butte Mine located in Campbell County.

Mining is carried out primarily by truck/shovel, dozer and scraper equipment utilized to remove coal. Coal Production for the Annual Report year 2019-2020 submitted to the Wyoming Department of Environmental Quality (WDEQ) Land Quality Division (LQD) in Cheyenne was 10.7 million tons. The current storage capacity (processed) stands at 27,500 tons.

#### MINE LIFE

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2031. A graphical representation for the Belle Ayr Coal Mine's trends in annual production and employment are shown on charts presented in *Appendix B*.

#### RECLAMATION BOND ESTIMATE

The reclamation performance bond estimate for Belle Ayr Mine is updated annually as part of the WDEQ reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus an additional area resulting from interim post-mining topography (PMT) disturbance. The estimate is separated into two

sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found *Appendix D*.

For 2021, the total Reclamation Bond calculation was \$92,759,500 and designed to cover required mine disturbance for the Annual Report period February 1, 2021 to January 31, 2022. The total bond cost represents a decrease of \$9.55 million from the 2020 approved bond of \$102,318,500 due almost exclusively to the reduction of native overburden removal and a slight reduction of some equipment costs.

#### PERMIT HISTORY

Surface Mining Permit No. 525 for the Belle Ayr Coal Mine was first issued by WDEQ on March 11, 1982. Permit renewals for coal mines in the State of Wyoming are submitted in maximum of five-year increments. 10 permit renewals for mine permit No. 525 have been approved over a 37-year period and the 525-T10 term renewal was approved by WDEQ on March 7, 2019.

Air Quality permits are issued to coal mine facilities by the Wyoming Air Quality Division, and in compliance with these permits, mining facilities are designed to minimize fugitive dust or vapor emissions to the extent technologically possible under Best Available Control Technology (BACT) criteria.

#### DESCRIPTION OF COAL RESERVE AND COAL QUALITY

Two minable coal seams are locally referred to as the Anderson and Canyon seams. The Anderson Seam outcrops on the eastern and northern parts of the Belle Ayr Coal Field. The Anderson seam thickness ranges from 18 to 44 feet and is thickest in the northern part of the field. The Canyon seam has a thickness of 30 to 36 feet but contains numerous splits in the southern half of the field, forming five separate and relatively thin seams. As of 12/31/2018, the Anderson and Canyon seams contain approximately 472,419,711 tons of remaining recoverable coal. The coal quality as reported in the current Mine Plan submitted to WDEQ LQD is obtained from coal seam composite samples



of both the Anderson and Canyon seams and has a reported caloric value of 7950-9296 BTU/lb. This coal quality is considered representative of in-situ coal throughout the lease areas.

## WATER RESOURCES

Belle Ayr Mine is in a 12 to 13-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer. The Belle Ayr Mine permit has an area of approximately 21.1 square miles and will affect approximately 7 percent of the drainage area of Caballo Creek.

Therefore, the primary source of water for coal mine operations are groundwater supply wells and the same would hold true for future industrial and/or agricultural endeavors.

## PROPERTY ATTRIBUTES

In addition to the water resources discussed above, maps can be found in **Appendix A** for the following Belle Ayr Coal Mine property attributes:

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
  - Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- **Surface Ownership**  
In addition to the **Appendix A** maps, **Table 2** details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.
- **Transportation**
  - **Roads** – Belle Ayr coal mine is accessible by State Highway 59 coming north from Gillette or south from Wright and taking Bishop Road east for 5.9 miles until turning right (south) at the mine entrance sign. The road systems at coal mines consists of

primary and ancillary roads.

- **Railroads** - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Belle Ayr Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.
  - **Transmission Lines**  
**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.
  - **Pipelines**  
**Appendix A** pipeline data accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.
  - **Groundwater**  
In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.
  - **Streams**  
A map showing the surface water drainages (streams) coursing through the Belle Ayr mine property can be found in **Appendix A.7**.
  - **Industrial Facilities Areas**
    - **Permanent Improvements:** the Reclamation Bond section of a coal mine's Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine's facility buildings can be identified under one of the 3 categories below:
      - Office and Professional
      - Warehouses and Light Duty Shops
      - Heavy Industrial Shops
- For the buildings currently present at the Belle Ayr Coal Mine, the area (square footage) for each can be found in **Appendix C** tables

which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

## BELLE AYR COAL MINE SOURCES

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- *2020-2021 Annual Report to WDEQ, file name 2020\_PT0214\_AR Revised\_22MAR2021.pdf*
- *WDEQ Mine Plan Series 300 documents, rev 2014*

State of Wyoming State Mine Inspector's Office, Annual Report to the State Mine Inspector's Office for the Belle Ayr Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Eagle Specialty Materials company website, Eagle Butte | Eagle Specialty Materials (pemining.com), <https://pemining.com/eagle-butte-1>

#### **2.2.4.2 BLACK THUNDER**

Black Thunder coal mine is in Campbell County, Wyoming, located 45 miles southeast of the town of Gillette, population 33,403 and 16 miles east of the town of Wright, population 1,644. The mine is owned and operated by Thunder Basin Coal Company, a subsidiary of Arch Coal, Inc. Its current mining capacity is 59.4 million tons per year with a workforce of 949 employees. The Black Thunder Mine began operations in 1977 and was operated by ARCO Coal until it was acquired by Arch Coal in 1998. For most of its existence, Black Thunder has been the largest mine in the country by production until surpassed by North Antelope Rochelle Mine (NARM).

The Black Thunder Mine primarily uses draglines for overburden removal and shovels for the excavation of coal and loading of haul trucks for transport to the on-site material handling facilities. The Black Thunder coal handling facilities consists of receiving, crushing, conveying, storing, reclaiming, sampling, dust collecting and train loading equipment. Coal Production for the Annual Report year 2018-2019 was 72.5 million tons. Storage capacity (processed) stands at 258,000 tons. Black Thunder's dragline excavator Ursa Major is the biggest working dragline in North America and the third largest ever made. It produces enough coal to load up to 20-25 trains per day. In all, Black Thunder operates six draglines.

#### **MINE LIFE**

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2031. A graphical representation for the Black Thunder Coal Mine's trends in annual production and employment are shown on charts presented in Appendix B.

#### **RECLAMATION BOND ESTIMATE**

The reclamation performance bond estimate for Black Thunder Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report

period, plus additional area resulting from interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond.

For 2019, the total Reclamation Bond calculation was \$406,369,814 and designed to cover required mine disturbance for the Annual Report period December 3, 2018 to December 2, 2019.

#### **PERMIT HISTORY**

The State of Wyoming Permit to Mine No. 233 was issued to Atlantic Richfield Company effective December 3, 1974. Transfer of the State of Wyoming Permit to Mine No. 233 from Atlantic Richfield Company to Thunder Basin Coal Company was approved effective November 23, 1977. The 10th permit renewal application, 233-T10, was submitted in February 2020. Permit renewals for coal mines in the State of Wyoming are submitted in maximum five-year increments.

Air Quality permits are issued to coal mine facilities by the Wyoming Air Quality Division, and in compliance with these permits, mining facilities are designed to minimize fugitive dust or vapor emissions to the extent technologically possible under Best Available Control Technology (BACT) criteria.

#### **DESCRIPTION OF COAL RESERVE & COAL QUALITY**

Black Thunder works coal reserves in the Wyodak seam. Hosted in the Palaeocene Fort Union formation, which covers vast areas of Wyoming, Montana and the Dakotas, the seam at Black Thunder is gently dipping, 22m-thick and locally splits into the Anderson and Canyon beds separated by up to 18m of waste and has a reported caloric value of 8,800 Btu/lb.

#### **WATER RESOURCES**

Black Thunder Mine is in a 12 to 13-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and

measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are groundwater supply wells and the same would hold true for future industrial and/or agricultural endeavors.

## PROPERTY ATTRIBUTES

In addition to the water resources discussed above, maps can be found in **Appendix A** for the following Black Thunder Coal Mine property attributes:

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
  - Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- **Surface Ownership**  
In addition to the **Appendix A maps, Table 2** details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.
- **Transportation**
  - **Roads** – Black Thunder coal mine is accessible by State Highway 59 coming south from Wright, Wyoming, traveling 2.0 miles, turning left onto WY-450 E, traveling 11.9 miles, turning left and traveling 0.7 miles to the mine entrance. The Wyoming Highway Department has constructed State Highway 450 from Reno Junction to Newcastle. This highway crosses through the mine and is north of the main Black Thunder plant site. The road system at the mine consists of primary and ancillary roads.
  - **Railroads** - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading points are Thunder Junction, Thunder Junction West and Thunder Junction East, Campbell County Wyoming and the rail loading

capacities are Full loop with a 4 unit-train capacity.

### • **Transmission Lines**

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

### • **Pipelines**

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

### • **Groundwater**

In addition to the **Appendix A.6** map for groundwater supply wells, Appendix F lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

### • **Streams**

A map showing the surface water drainages (streams) coursing through the Black Thunder mine property can be found in **Appendix A.7**.

### • **Industrial Facilities Areas**

#### • **Permanent Improvements**

The Reclamation Bond section of a coal mine's Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine's facility buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Black Thunder Coal Mine, the area (square footage) for each can be found in **Appendix C** tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

## BLACK THUNDER COAL MINE SOURCES

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- *2020-2021 Annual Report to WDEQ, file name 2019\_PT0233\_AR\_01MAY2020.pdf*
- *WDEQ Mine Plan Series 300 documents, rev 2017*

State of Wyoming State Mine Inspector's Office, Annual Report to the State Mine Inspector's Office for the Black Thunder Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Arch Resources, Inc (Thunder Basin Coal Company) company website, Operations - Arch Resources, Inc. ([archrsc.com](http://archrsc.com)), <https://www.archrsc.com/our-business/operations/>

### 2.2.4.3 BUCKSKIN MINE

Buckskin coal mine is in Campbell County, Wyoming, located 11 miles North of the town of Gillette, population 33,403, and 2 miles east of Highway 14-16. The mine is owned and operated by Buckskin Mining Company and its current mining capacity is 10.6 million tons per year with a workforce of 178 employees.

Mining is carried out primarily by truck and shovel equipment utilized to remove overburden and coal. Coal Production for the Annual Report year 2020-2021 was 9.6 million tons. The current storage capacity (processed) stands at 61,500 tons.

#### MINE LIFE

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2029. A graphical representation for the Buckskin Coal Mine's trends in annual production and employment are shown on charts presented in **Appendix B**.

#### RECLAMATION BOND ESTIMATE

The reclamation performance bond estimate for Buckskin Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2020, the total Reclamation Bond calculation was \$ 128,546,086 and designed to cover required mine disturbance for the Annual Report period February 1, 2020 to January 31, 2021.

#### PERMIT HISTORY

Surface Mining Permit 500-T1 for the Buckskin Coal Mine was first issued by WDEQ LQD in June 1980 and coal mining operations began in 1981. Based on the latest available data (2011

Mine Plan), 8 Permit 500 permit renewals will have been issued by WDEQ covering a 34-year period from 1982 to 2016.

#### DESCRIPTION OF COAL RESERVE & COAL QUALITY

The Buckskin Mine is currently producing more than 10 million tons of coal per year from the Anderson and Canyon seams. The coal produced at this mine has a reported caloric value of 8,400 BTU/lb. Additional coal quality metrics were not available through the Mine Plan or Annual Report documents provided by WDEQ.

#### WATER RESOURCES

Buckskin Mine is in a 11 to 12-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

#### PROPERTY ATTRIBUTES

In addition to the water resources discussed above, maps can be found in Appendix A for the following Buckskin Coal Mine property attributes:

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
  - Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- **Surface Ownership**

In addition to the Appendix A maps, Table 2 details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.
- **Transportation**

- **Roads** – Buckskin coal mine is accessible by State Highway 14-16 coming north from Gillette, Wyoming, traveling 11.2 miles, turning right at the entrance sign for Buckskin Mine. The road system at the mine consists of primary and ancillary roads.
- **Railroads** - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Buckskin Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.
- **Transmission Lines**  
**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.
- **Pipelines**  
**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.
- **Groundwater**  
In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.
- **Streams**  
A map showing the surface water drainages (streams) coursing through the Buckskin mine property can be found in **Appendix A.7**.
- **Industrial Facilities Areas**
  - **Permanent Improvements**  
The Reclamation Bond section of a coal mine’s Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine’s facility buildings can be identified under one of the 3 categories below:
    - Office and Professional

- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Buckskin Coal Mine, the area (square footage) for each can be found in Appendix C tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

**BUCKSKIN MINE SOURCES**

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- 2020-2021 Annual Report to WDEQ, file name 2020\_PT0500\_AR\_30SEP2021.pdf
- WDEQ Mine Plan Series 300 documents, rev 2021

State of Wyoming State Mine Inspector’s Office, Annual Report to the State Mine Inspector’s Office for the Buckskin Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Buckskin Mining Company/Kiewit Corporation company website, Buckskin Mining Company | Kiewit Corporation, <https://www.kiewit.com/projects/buckskin-mining-company/>

#### 2.2.4.4 CABALLO MINE

Caballo coal mine is in Campbell County, Wyoming, located 18.5 miles South of the town of Gillette, population 33,403. The mine is owned and operated by Peabody Caballo Coal LLC and its current mining capacity is 13,860,353 million tons per year with a workforce of 211 employees. The Caballo Mine began operations in 1997 (1978). The Caballo mine has changed hands 3 times through mergers and sales. The two prior owners have been Rio Tinto (1997) and Cloud Peak Energy (2010). The current owner, Peabody Caballo Coal, is also the owner and operator of the Rawhide Mine located in Campbell County.

Mining is carried out primarily by dragline, truck-shovel, dozer and scraper equipment utilized to remove coal. Caballo Mine is a surface coal mine that uses truck-shovel and dozer-push mining methods. Upper overburden benches are excavated and hauled to the backfill while the lower overburden benches are cast-blasted and pushed to the backfill. Scoria is mined for use at the mine. Coal Production for the Annual Report year 2020-2021 was 11.5 million tons. The current storage capacity (processed) stands at 46,000 tons.

#### MINE LIFE

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2038. A graphical representation for the Caballo Coal Mine’s trends in annual production and employment are shown on charts presented in **Appendix B**.

#### RECLAMATION BOND ESTIMATE

The reclamation performance bond estimate for Caballo Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report

submitted to WDEQ LQD and can be found in **Appendix D**.

For 2021, the total Reclamation Bond calculation was \$143,353,337 and designed to cover required mine disturbance for the Annual Report period April 1, 2020 to March 31, 2021.

#### PERMIT HISTORY

Surface Mining Permit 433-T1 for the Caballo Coal Mine was first issued by WDEQ LQD on June 21, 1976. 8 Permit 433 permit renewals have been approved over a 42-year period and the 433-T8 term renewal was approved by WDEQ-LQD on June 4, 2018.

#### DESCRIPTION OF COAL RESERVE & COAL QUALITY

Coal at the Caballo mine is excavated from the Palaeocene Upper Wyodak-Anderson seam which has a thickness of 55 to 75 feet across the property and has a reported caloric value of 8,400 BTU/lb. This coal quality is considered representative of in-situ coal throughout the lease areas.

#### WATER RESOURCES

Caballo Mine is in a 12 to 13-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer. The Caballo Mine permit has an area of approximately 21.1 square miles and will affect approximately 7 percent of the drainage area of Caballo Creek.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

#### PROPERTY ATTRIBUTES

- Permit Boundaries are sourced from the most

recent GIS data available from WDEQ LQD.

- Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.

#### • Surface Ownership

In addition to the Appendix A maps, Table 2 details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.

#### • Transportation

- **Roads** – Caballo coal mine is accessible by State Highway 59 coming south from Gillette, Wyoming, traveling 10.6 miles, turning left (East) onto Bishop Road, traveling 7.6 miles to the main entrance. The road system at the mine consists of primary and ancillary roads.
- **Railroads** - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Caballo Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.

#### • Transmission Lines

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

#### • Pipelines

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

#### • Groundwater

In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

#### • Streams

A map showing the surface water drainages (streams) coursing through the Caballo mine property can be found in **Appendix A.7**.

#### • Industrial Facilities Areas

#### • Permanent Improvements

The Reclamation Bond section of a coal mine's Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine's facility buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Caballo Coal Mine, the area (square footage) for each can be found in Appendix C tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

### CABALLO MINE SOURCES

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- 2020-2021 Annual Report to WDEQ, file name PT433\_Caballo\_2021\_Annual\_Report\_V3.pdf
- WDEQ Mine Plan Series 300 documents, rev 2019

State of Wyoming State Mine Inspector's Office, Annual Report to the State Mine Inspector's Office for the Caballo Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Peabody Caballo Coal LLC company website: Peabody - Caballo Mine ([peabodyenergy.com](https://www.peabodyenergy.com)), <https://www.peabodyenergy.com/Operations/U-S-Mining/Powder-River-Basin-Mining/Caballo-Mine>

#### 2.2.4.5 COAL CREEK MINE

Coal Creek coal mine is in Campbell County, Wyoming, located 18.2 miles north of the town of Wright, population 1,644 and 31 miles south of the town of Gillette, population 33,403. The mine is owned and operated by Thunder Basin Coal Company (a subsidiary company of Arch Coal, Inc) and its current mining capacity is 1,994,359 million tons per year with a workforce of 102 employees.

Mining is carried out primarily by dragline, front-end loaders, excavators, electric shovels and haulage trucks. Coal Production for the Annual Report year 2020 was 2.14 million tons. The current storage capacity (processed) stands at 25,000 tons.

#### MINE LIFE

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2041. A graphical representation for the Coal Creek Coal Mine's trends in annual production and employment are shown on charts presented in **Appendix B**.

#### RECLAMATION BOND ESTIMATE

The reclamation performance bond estimate for Coal Creek Mine is updated annually as part of the Wyoming Department of environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in **Appendix 2** of the most current Annual Report.

For 2021, the total Reclamation Bond calculation was \$22,691,600 and designed to cover required mine disturbance for the Annual Report period August 1, 2021 to January 1, 2022.

#### PERMIT HISTORY

The Coal Creek Mine began operations in 1979, initially owned by the Atlantic Richfield Company. The permit to mine No. 483 was transferred to

the current owner, Thunder Basin Coal Company, in 1997. Thunder Basin Coal Company is also the owner and operator of the Black Thunder Mine located in Campbell County

#### DESCRIPTION OF COAL RESERVE & COAL QUALITY

Three minable coal seams, known as the Wyodak-Anderson R-1, R-3 and R-5 seams (Upper Roland) are the primary target zones for coal mining at the Coal Creek Mine.

The coal quality has a reported caloric value of 8400 BTU/lb. This coal quality is considered representative of in-situ coal throughout the lease areas.

#### WATER RESOURCES

Coal Creek Mine is in a 12 to 13-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. The surface water drainages coursing through the mine permit area, Coal Creek and East Fork Coal Creek and unnamed tributaries to both, are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

#### PROPERTY ATTRIBUTES

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
  - Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.

#### • Surface Ownership

In addition to the **Appendix A** maps, **Table 2** details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.

• **Transportation**

- Railroads - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Coal Creek Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.
- Roads – Coal Creek Coal Mine is accessible by State Highway 59 coming north from Wright, Wyoming, traveling 7.2 miles, turning right onto Breene Road, 4.8 miles, turning left onto Hilight Road, 2.0 miles, turning right onto Hoadly Road, 2.0 miles, turn left, 3.7 miles and taking a right turn to arrive at the mine entrance. The road system at the mine consists of primary and ancillary roads.

• **Transmission Lines**

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

• **Pipelines**

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

• **Groundwater**

In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

• **Streams**

A map showing the surface water drainages (streams) coursing through the Coal Creek mine property can be found in **Appendix A.7**.

• **Industrial Facilities Areas**

• **Permanent Improvements**

The Reclamation Bond section of a coal mine’s Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine’s facility

buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Coal Creek Coal Mine, the area (square footage) for each can be found in Appendix C tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

**COAL CREEK MINE SOURCES**

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- *2020-2021 Annual Report to WDEQ, file name 2020\_PT0483\_AR\_16MAR2021.pdf*
- *WDEQ Mine Plan Series 300 documents, rev 2021*

State of Wyoming State Mine Inspector’s Office, Annual Report to the State Mine Inspector’s Office for the Coal Creek Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide>. page

Thunder Basin Coal Company website, Operations - Arch Resources, Inc. ([archrsc.com](http://archrsc.com)) <https://www.archrsc.com/our-business/operations/>

**2.2.4.6 CORDERO ROJO COAL MINE**

Cordero Rojo coal mine is in Campbell County, Wyoming, located 27.9 miles southeast of the town of Gillette, Wyoming, population 6,386.

Cordero Rojo mine began coal mining operations in 1974. The permitted mining capacity is 65 million tons per year in conjunction with the Caballo Rojo loadout. Under the ownership of the Navajo Transitional Energy Company, hereafter referred to as NTEC, it has a current mining production of 30 million tons per year. Current mining involves dual seams with a coal seam thickness of 32 to 36 feet. Mining is carried out primarily by dragline operations, with truck/shovel operations utilized to remove coal. Coal Production for the Annual Report year 2018-2019 was 15.6 million tons. Storage capacity (processed) currently stands at 27,500 tons. The type of coal is 8,850 Btu/lb. thermal coal.

The mine operator is Cordero Rojo Coal LLC. Navajo Transitional Energy Company currently owns and operates 2 other mines in the Powder River Basin (PRB), Antelope coal mine located in Converse County and Youngs Creek coal mine located in Sheridan County.

**MINE LIFE**

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2047. A graphical representation for the Cordero Rojo coal mine’s trends in annual production and employment are shown on charts presented in **Appendix B**.

**RECLAMATION BOND ESTIMATE**

The reclamation performance bond estimate for Cordero Rojo Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim PMT disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2019, the total Reclamation Bond calculation is \$140,127,000 and is designed to cover required mine disturbance for the Annual Report period July 1, 2018 to September 30, 2019 plus additional as a result of the interim PMT disturbance.

**PERMIT HISTORY**

Surface Mining Permit 237 for the Cordero Rojo coal mine was first issued by WDEQ LQD on January 9, 1975. The original mine plan called for mine construction to commence in 1982, continue through 1983, with initial coal deliveries to begin in November, 1983. Based on the latest available data, 9 Permit 237 permit renewals will have been approved by WDEQ covering a 45-year period from 1975 to 2020.

**DESCRIPTION OF COAL RESERVE & COAL QUALITY**

The Cordero Rojo coal mine is currently producing more than 15.6 million tons of coal per year from the Wyodak-Roland seam which has an average thickness of 60 feet and has a reported caloric value of 8,400 Btu/lb. This coal quality is considered representative of in-situ coal throughout the lease areas.

**WATER RESOURCES**

Cordero Rojo Mine is in a 12 to 13-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

**PROPERTY ATTRIBUTES**

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.

- Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.

• **Surface Ownership**

In addition to the **Appendix A** maps, Table 2 details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.

• **Transportation**

- **Roads** – Cordero Rojo coal mine is accessible by State Highway 59 coming south from Gillette: Hwy 59 S 19.0 miles, take a left onto Haight Road 3.8 miles, continue onto T-7 Road, turn right at the mine entrance. The road system at the mine consists of primary and ancillary roads.
- **Railroads** - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF.2 The rail loading points are Rojo Junction for the North Facility and Cordero Junction for the South Facility, both located in Campbell County, Wyoming. The rail loading capacities are Full loop with a 4 unit-train capacity at the North Facility and a 3-unit train capacity at the South Facility.

• **Transmission Lines**

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

• **Pipelines**

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

• **Groundwater**

In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

• **Streams**

A map showing the surface water drainages (streams) coursing through the Cordero Rojo mine property can be found in **Appendix A.7**.

• **Industrial Facilities Areas**

- **Permanent Improvements**  
The Reclamation Bond section of a coal mine’s Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine’s facility buildings can be identified under one of the 3 categories below:
  - Office and Professional
  - Warehouses and Light Duty Shops
  - Heavy Industrial Shops

For the buildings currently present at the Cordero Rojo coal mine, the area (square footage) for each can be found in **Appendix C** tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

**CORDERO ROJO COAL MINE SOURCES**

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- 2020-2021 Annual Report to WDEQ, Cordero Rojo Annual Report Permit 237-T10
- WDEQ Mine Plan Series 300 documents, rev 2020

State of Wyoming State Mine Inspector’s Office, Annual Report to the State Mine Inspector’s Office for the Cordero Rojo Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Navajo Transitional Energy Company (NTEC) website, Cordero Rojo | A Navajo Transitional Energy Company Strategic Asset (navenergy.com), <https://navenergy.com/cordero-rojo/>

**2.2.4.7 DRY FORK MINE**

Dry Fork coal mine is in Campbell County, Wyoming, located 10.5 miles North of the town of Gillette, population 33,403, and 4.4 miles east of Highway 14-16. The mine is owned and operated by Western Fuels of Wyoming, Inc. and its current mining capacity is 3.7 million tons per year with a workforce of 56 employees.

A combination of scrapers, dozers, front end loaders, shovels and haul trucks are used for overburden removal and coal extraction. Coal Production for the Annual Report year 2020-2021 was 3.9 million tons. The type of coal is 8,050 – 8,200 Btu/lb. thermal coal.

**MINE LIFE**

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2065. A graphical representation for the Dry Fork coal mine’s trends in annual production and employment are shown on charts presented in **Appendix B**.

**RECLAMATION BOND ESTIMATE**

The reclamation performance bond estimate for Dry Fork Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2020, the total Reclamation Bond calculation was \$ 34,012,666 and designed to cover required mine disturbance for the Annual Report period January 1, 2020 to December 31, 2020.

**PERMIT HISTORY**

Surface Mining Permit 599 for the Dry Fork coal mine was first issued by WDEQ LQD in April 13, 1987. Based on the latest available data, 7 Permit 599 permit renewals will have been

approved by WDEQ covering a 35-year period from 1987 to 2022.

**DESCRIPTION OF COAL RESERVE & COAL QUALITY**

The Dry Fork Mine is currently producing more than 3.7 million tons of coal per year from the Upper Wyodak-Anderson coal seam. The coal produced at this mine has a reported caloric value of 8,100 BTU/lb. Additional coal quality metrics were not available through the Mine Plan or Annual Report documents provided by WDEQ.

**WATER RESOURCES**

Dry Fork Mine is in a 11 to 12-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

**Property Attributes**

In addition to the water resources discussed above, maps can be found in **Appendix A** for the following Dry Fork coal mine property attributes:

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
  - Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- **Surface Ownership**  
In addition to the **Appendix A** maps, **Table 2** details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.



• **Transportation**

- Roads – Dry Fork coal mine is accessed from Gillette, WY, by taking US 14-16 north 1.6 miles, turning right on to Northern Drive, 4.0 miles, take left onto N Garner Lake Road, 4.0 miles, take left on Dry Fork mine road, 1.6 miles to the Dry Fork coal mine entrance. The road system at the mine consists of primary and ancillary roads.
- Railroads - Rail service is provided by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Dry Fork Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.

• **Transmission Lines**

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

• **Pipelines**

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

• **Groundwater**

In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

• **Streams**

A map showing the surface water drainages (streams) coursing through the Dry Fork mine property can be found in **Appendix A.7**.

• **Industrial Facilities Areas**

• **Permanent Improvements**

The Reclamation Bond section of a coal mine’s Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine’s facility buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Dry Fork coal mine, the area (square footage) for each can be found in **Appendix C** tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

**DRY FORK COAL MINE SOURCES**

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- *2020-2021 Annual Report to WDEQ, file name 2020\_PT0599\_AR\_08APR2021.pdf*
- *WDEQ Mine Plan Series 300 documents, rev 2019*

State of Wyoming State Mine Inspector’s Office, Annual Report to the State Mine Inspector’s Office for the Dry Fork Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Western Fuels Wyoming, INC website, Dry Fork Mine – WESTERN FUELS-WYOMING, INC <https://www.dryforkmine.com/>

**2.2.4.8 EAGLE BUTTE MINE**

Eagle Butte coal mine is in Campbell County, Wyoming, located 6.4 miles North of the town of Gillette, population 33,403, adjacent to and west of Hwy 59 N. The mine is owned and operated by Eagle Specialty Materials, LLC and its current mining capacity is 13.5 million tons per year with a workforce of 222 employees.

A combination of scrapers, dozers, front end loaders, shovels and haul trucks are used for overburden removal and coal extraction. Coal Production for the Annual Report year 2020-2021 was 126.9 million tons. The current storage capacity (processed) stands at 48,000 tons. The type of coal is 8,350 Btu/lb. thermal coal.

**MINE LIFE**

The estimated date (year) of termination of the proposed mining operation was not stated in the available public resources for this mine, including the most current Annual Report and Mine Plan on file with the Wyoming Department of Environmental Quality Land Quality Division (WDEQ LQD). A graphical representation for the Eagle Butte coal mine’s trends in annual production and employment are shown on charts presented in **Appendix B**.

**RECLAMATION BOND ESTIMATE**

The reclamation performance bond estimate for Eagle Butte Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2020-2021, the total Reclamation Bond calculation was \$ 123,230,000 and designed to cover required mine disturbance for the Annual Report period May 5, 2020 to May 5, 2021.

**PERMIT HISTORY**

Surface Mining Permit 428 for the Eagle Butte coal mine was first issued by WDEQ LQD in April 1987 and coal mining operations began in 1987. Based on the latest available data, 6 Permit 428 permit renewals will have been approved by WDEQ covering a 35-year period from 1987 to 2022.

**DESCRIPTION OF COAL RESERVE & COAL QUALITY**

The Eagle Butte Mine is currently producing more than 13 million tons of coal per year from the Wyodak - Roland, Smith coal seams. The coal produced at this mine has a reported calorific value of 8,350 Btu/lb. Additional coal quality metrics were not available through the Mine Plan or Annual Report documents provided by WDEQ.

**WATER RESOURCES**

Eagle Butte Mine is in a 11 to 12-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

**PROPERTY ATTRIBUTES**

In addition to the water resources discussed above, maps can be found in **Appendix A** for the following Eagle Butte coal mine property attributes:

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.

• **Surface Ownership**

In addition to the Appendix A maps, Table 2 details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.

• **Transportation**

• **Roads** – Eagle Butte coal mine is accessed from Gillette, WY, by taking Hwy 59 N 6.4 miles to the Eagle Butte coal mine entrance on the west side of the highway. The road system at the mine consists of primary and ancillary roads.

• **Railroads** - Rail service is provided by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Eagle Butte Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.

• **Transmission Lines**

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

• **Pipelines**

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

• **Groundwater**

In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

• **Streams**

A map showing the surface water drainages (streams) coursing through the Eagle Butte mine property can be found in **Appendix A.7**.

• **Industrial Facilities Areas**

• **Permanent Improvements**

The Reclamation Bond section of a coal mine’s Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end

of mine life. In general, a coal mine’s facility buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Eagle Butte coal mine, the area (square footage) for each can be found in **Appendix C** tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

**EAGLE BUTTE MINE SOURCES**

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- 2020-2021 Annual Report to WDEQ, file name 2021\_PT0428\_AR\_10MAY2021.pdf
- WDEQ Mine Plan Series 300 documents, 1983 w rev 1987-2015

State of Wyoming State Mine Inspector’s Office, Annual Report to the State Mine Inspector’s Office for the Eagle Butte Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Eagle Specialty Materials website, Eagle Butte | Eagle Specialty Materials (pemining.com) <https://pemining.com/eagle-butte-1>

**2.2.4.9 NORTH ANTELOPE ROCHELLE (NARM) MINE**

North Antelope Rochelle (NARM) coal mine is in Campbell County, Wyoming, located 26.2 miles South of the town of Wright, population 1,644, and 8.5 miles east of highway WY 59. The mine is owned and operated by Peabody Powder River Mining, LLC and its current mining capacity is 62.8 million tons per year with a workforce of 1,348 employees.

A combination of dragline, scrapers, dozers, front end loaders, electric cable shovels and haul trucks are used for overburden removal and coal extraction. Coal Production for the Annual Report year 2019-2020 was 71.2 million tons. The current storage capacity (processed) stands at 165,000 tons. The type of coal is 8,800 Btu/lb. thermal coal.

**MINE LIFE**

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves was currently not available through public resources. A graphical representation for the North Antelope Rochelle (NARM) coal mine’s trends in annual production and employment are shown on charts presented in **Appendix B**.

**RECLAMATION BOND ESTIMATE**

The reclamation performance bond estimate for North Antelope Rochelle (NARM) Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2019-2020, the total Reclamation Bond calculation was \$ \$291,318,287 and designed to cover required mine disturbance for the Annual Report period October 1, 2019 to September 30, 2020.

**PERMIT HISTORY**

Surface Mining Permit 569 for the North Antelope Rochelle (NARM) coal mine was first issued by WDEQ LQD on December 6, 1984 and coal mining operations began in 1985. Based on the latest available data, 9 Permit 569 permit renewals will have been approved by WDEQ covering a 36-year period from 1984 to 2020.

**DESCRIPTION OF COAL RESERVE & COAL QUALITY**

The North Antelope Rochelle (NARM) Mine is currently producing more than 71.2 million tons of coal per year from the Wyodak (Anderson-Canyon) coal seam with an average thickness of 72 feet. The coal produced at this mine has a reported caloric value of 8,800 Btu/lb. Additional coal quality metrics were not available through the Mine Plan or Annual Report documents provided by WDEQ.

**WATER RESOURCES**

North Antelope Rochelle (NARM) Mine is in a 11 to 12-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

**PROPERTY ATTRIBUTES**

In addition to the water resources discussed above, maps can be found in Appendix A for the following North Antelope Rochelle (NARM) coal mine property attributes:

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.

• **Surface Ownership**

In addition to the Appendix A maps, Table 2 details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.

• **Transportation**

• **Roads** – North Antelope Rochelle (NARM) coal mine is accessed from Wright, by taking highway WY 59 S 6.8 miles, then left onto Edwards Road 6.2 miles, continue onto Reno Road .5 mile, right onto Mackey Road 1.1 mile, keep right to continue on Antelope Road, continue onto Matheson Road 2.9 miles, turn left onto NARM Access Road and travel 3.7 miles to the North Antelope Rochelle (NARM) coal mine entrance. NARM can be accessed from either Antelope Road or Reno Road (north guard house). The road system at the mine consists of primary and ancillary roads.

• **Railroads** - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Nacco Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.

• **Transmission Lines**

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

• **Pipelines**

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

• **Groundwater**

In addition to the **Appendix A.6** map for groundwater supply wells, Appendix F lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

• **Streams**

A map showing the surface water drainages (streams) coursing through the North Antelope

mine property can be found in **Appendix A.7**.

• **Industrial Facilities Areas**

• **Permanent Improvements**

The Reclamation Bond section of a coal mine’s Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine’s facility buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the North Antelope Rochelle (NARM) coal mine, the area (square footage) for each can be found in Appendix C tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

**NORTH ANTELOPE ROCHELLE (NARM) MINE SOURCES**

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- *2019-2020 Annual Report to WDEQ, file name 2020\_PT569\_NARM\_2020\_Annual\_Report\_V4.pdf*
- *WDEQ Mine Plan Series 300 documents, rev 2018*

State of Wyoming State Mine Inspector’s Office, Annual Report to the State Mine Inspector’s Office for the North Antelope Rochelle Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide>. page

*Peabody - North Antelope Rochelle Mine (peabodyenergy.com)*  
<https://www.peabodyenergy.com/Operations/U-S-Mining/Powder-River-Basin-Mining/North-Antelope-Rochelle-Mine>

**2.2.4.10 RAWHIDE MINE**

Rawhide coal mine is in Campbell County, Wyoming, located 13.7 miles NE of the town of Gillette, population 33,403. The mine is owned and operated by Peabody Caballo Mining Company and its current mining capacity is 11.6 million tons per year with a workforce of 131 employees.

A combination of scrapers, dozers, front end loaders, shovels and haul trucks are used for overburden removal and coal extraction. Coal Production for the Annual Report year 2020-2021 was 11.2 million tons. The current storage capacity (processed) stands at 71,000 tons. The type of coal is 8,300 Btu/lb. thermal coal.

**MINE LIFE**

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is currently not available through public resources. A graphical representation for the Rawhide coal mine’s trends in annual production and employment are shown on charts presented in **Appendix B**.

**RECLAMATION BOND ESTIMATE**

The reclamation performance bond estimate for Rawhide Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2020-2021, the total Reclamation Bond calculation was \$32,878,000 and designed to cover required mine disturbance for the Annual Report period November 1, 2020 to October 31, 2021.

**PERMIT HISTORY**

Surface Mining Permit 240 for the Rawhide coal

mine was first issued by WDEQ LQD on January 31, 1975 and coal mining operations began in 1977. Based on the latest available data, 8 Permit 240 permit renewals will have been approved by WDEQ covering a 47-year period from 1975 to 2022.

**DESCRIPTION OF COAL RESERVE & COAL QUALITY**

The Rawhide Mine is currently producing more than 11.1 million tons of coal per year from the Wyodak - Upper Roland and Lower Smith coal seams, with the Upper Roland having an average coal seam thickness of 30 feet and the Lower Smith having an average coal seam thickness of 75 feet. The coal produced at this mine has a reported caloric value of 8,300 Btu/lb. Additional coal quality metrics were not available through the Mine Plan or Annual Report documents provided by WDEQ.

**WATER RESOURCES**

Rawhide Mine is in a 11 to 12-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

**PROPERTY ATTRIBUTES**

In addition to the water resources discussed above, maps can be found in **Appendix A** for the following Rawhide coal mine property attributes:

- Permit Boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.

- **Surface Ownership**

- In addition to the Appendix A maps, Table 2 details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.

- **Transportation**

- **Roads** – Rawhide coal mine is accessed from Gillette, WY, by taking highway U.S. 14-16 N 8.0 miles, turning right onto WY-59 for 4.5 miles and turning left, traveling 0.6 miles to the Rawhide coal mine entrance. The road system at the mine consists of primary and ancillary roads.
- **Railroads** - Rail service is provided both by UP, to the western distribution locations serviced by UP, and by BNSF, to the Central and Eastern distribution locations serviced by BNSF. The rail loading point is Rawhide Junction, Campbell County Wyoming and the rail loading capacities are Full loop with a 4 unit-train capacity.

- **Transmission Lines**

- **Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

- **Pipelines**

- **Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

- **Groundwater**

- In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

- **Streams**

- A map showing the surface water drainages (streams) coursing through the Rawhide mine property can be found in **Appendix A.7**.

- **Industrial Facilities Areas**

- **Permanent Improvements**  
The Reclamation Bond section of a coal mine’s Annual Report submitted to WDEQ lists facility buildings, material handling

facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine’s facility buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Rawhide coal mine, the area (square footage) for each can be found in Appendix C tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

**RAWHIDE MINE SOURCES**

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- *2020-2021 Annual Report to WDEQ, file name: 2022\_PT240\_RAWHIDE\_2022\_Annual\_Report\_V2\_2022JUN01.pdf*
- *WDEQ Mine Plan Series 300 documents, rev 2019*

State of Wyoming State Mine Inspector’s Office, Annual Report to the State Mine Inspector’s Office for the Rawhide Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide>. page

Peabody website, Peabody - Rawhide Mine ([peabodyenergy.com](https://www.peabodyenergy.com))  
<https://www.peabodyenergy.com/Operations/U-S-Mining/Powder-River-Basin-Mining/Rawhide-Mine>

### 2.2.4.11 SYNTHETIC FUELS MINE

Synthetic Fuels coal mine (formerly Fort Union coal mine) is in Campbell County, Wyoming, located 7.7 miles north of the town of Gillette, population 33,403. The mine is owned and operated by Green Bridge Holdings, Inc. and is currently in a total reclamation and active property conversion phases and development into an Industrial Park. The industrial park development currently has 3 tenants, Paintbrush Services, Black Bison Water Services and Synthetic Fuels. In addition, 35 acres of the former mine site were sold to Atlas Carbon, a coal to activated carbon production facility.

#### MINE LIFE

Coal mining activities ceased at the Synthetic Fuels Mine in 2007, and subsequent ongoing reclamation activities have been undertaken with the totally reclaimed areas opened to industrial siting for reuse as stated above.

#### RECLAMATION BOND ESTIMATE

The reclamation performance bond estimate for Synthetic Fuels Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond. Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2019, the total Reclamation Bond calculation was \$584,167.00 and designed to cover required mine disturbance for the Annual Report period January 1, 2019 to December 31, 2019.

#### PERMIT HISTORY

Surface Mining Permit 486 for the Synthetic Fuels coal mine was first issued by WDEQ LQD on April 4, 1979 and coal mining operations began in 1981. Based on the latest available data, 7 Permit 486 permit renewals will have been approved by WDEQ covering a 40-year period from 1979 to 2019.

### DESCRIPTION OF COAL RESERVE & COAL QUALITY

The coal produced at this mine in the past had a reported caloric value of 8,200 Btu/lb. Additional coal quality metrics were not available through the Mine Plan or Annual Report documents provided by WDEQ.

#### WATER RESOURCES

Synthetic Fuels Mine is in a 11 to 12-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.

Therefore, the primary source of water for coal mine operations are ground water supply wells and the same would hold true for future industrial and/or agricultural endeavors.

#### PROPERTY ATTRIBUTES

In addition to the water resources discussed above, maps can be found in **Appendix A** for the following Synthetic Fuels coal mine property attributes:

- **Permit Boundaries** are sourced from the most recent GIS data available from WDEQ LQD.
  - Permit boundaries are sourced from the most recent GIS data available from WDEQ LQD.
- **Surface Ownership**  
In addition to the **Appendix A** maps, **Table 2** details the surface ownership acreage, mine permit acreage and disturbance acreage over total mine life to date.
- **Transportation**
  - **Roads** – Synthetic Fuels coal mine can be accessed from Gillette by taking U.S. 14-16 N 1.6 miles, turn right onto Northern Drive 4.1 miles, turn left on Garner Lake Road 2.9 miles, turn right on Innovation Drive to the Synthetic Fuels coal mine entrance. The

road system at the mine consists of primary and ancillary roads.

tables which were derived from the reclamation bond calculation worksheets submitted in the Annual Report to WDEQ.

### SYNTHETIC FUELS MINE SOURCES

State of Wyoming Department of Environmental Quality (WDEQ), Land Quality Division:

- 2020-2021 Annual Report to WDEQ, file name 2019\_PT0486\_AR\_11MAR2020.pdf
- WDEQ Mine Plan Series 300 documents, rev 2004

State of Wyoming State Mine Inspector's Office, Annual Report to the State Mine Inspector's Office for the Synthetic Fuels Mine, 2005-2021

U.S. Census Bureau, 2020 Census, as cited by State of Wyoming Administration and Information – Economic Analysis Division release, August 13, 2021

Burlington Northern Santa Fe (BNSF) Coal Mine Guide, <https://www.bnsf.com/ship-with-bnsf/maps-and-shipping-locations/coal-mine-guide.page>

Energy Capital Economic Development website, describing Green Bridge Holdings, Inc. Green Bridge Holdings, Inc. (energycapited.com) <https://www.energycapited.com/green-bridge-holdings-inc/>

• **Railroads** – The Fort Union Rail Park is served by BNSF. The rail loading point is mile marker 6.0 on the Campbell Subdivision, Campbell County Wyoming and the rail loading capacities are 13,000 tons Full loop with a 1 unit-train capacity.

• **Transmission Lines**

**Appendix A** data includes high voltage interstate and intrastate transmission lines, substations and local distribution lines at reduced voltages.

• **Pipelines**

**Appendix A** pipeline data is accessed from publicly available resources and generally indicates natural gas, crude oil and finished product.

• **Groundwater**

In addition to the **Appendix A.6** map for groundwater supply wells, **Appendix F** lists the groundwater supply wells currently permitted through the Wyoming State Engineers Office and their appropriated flow rates.

• **Streams**

A map showing the surface water drainages (streams) coursing through the Synthetic Fuels mine property can be found in **Appendix A.7**.

• **Industrial Facilities Areas**

• **Permanent Improvements**

The Reclamation Bond section of a coal mine's Annual Report submitted to WDEQ lists facility buildings, material handling facilities and support facilities to be removed in the reclamation process at end of mine life. In general, a coal mine's facility buildings can be identified under one of the 3 categories below:

- Office and Professional
- Warehouses and Light Duty Shops
- Heavy Industrial Shops

For the buildings currently present at the Synthetic Fuels coal mine, the area (square footage) for each can be found in Appendix C

### 2.2.4.12 WYODAK MINE

Wyodak coal mine is in Campbell County, Wyoming, located approximately 5 miles east of the town of Gillette, population 33,403, with mining activities and facilities located on both the north and south sides of the East to West running I-90 interstate highway. The mine is owned Black Hills Corporation and operated by Wyodak Resources Development Corporation and its current mining capacity is 3.5 million tons per year with a workforce of 59 employees.

Wyodak has been in operation since 1923 and is the oldest continuously operating surface coal mine in the United States and the oldest coal mine in the Powder River Basin. Wyodak is a surface coal mine set up as a mine-mouth operation, meaning that the coal produced at the mine is shipped directly to the adjacent power plant customers. Daily operations at the mine primarily supply coal to power plants at the adjacent Neil Simpson Complex.

A combination of scrapers, dozers, front end loaders, shovels and haul trucks are used for overburden removal and coal extraction. Coal Production for the Annual Report year 2019-2020 was 3.8 million tons. The type of coal is 8,850 Btu/lb. thermal coal.

### MINE LIFE

Estimated date (year) of termination of the proposed mining operation, based on current mining practices and estimated reserves is 2062. A graphical representation for the Wyodak coal mine's trends in annual production and employment are shown on charts presented in **Appendix B**.

### RECLAMATION BOND ESTIMATE

The reclamation performance bond estimate for Wyodak Mine is updated annually as part of the Wyoming Department of Environmental Quality reporting requirements. The current bond estimate is designed to cover required mine disturbance for each respective annual report period, plus additional area as a result of interim post-mining topography (PMT) disturbance. The estimate is separated into two sections, the Area Bond and Incremental Bond.

Details are included in the current Annual Report submitted to WDEQ LQD and can be found in **Appendix D**.

For 2019-2020, the total Reclamation Bond calculation was \$ \$25,756,918.00 and designed to cover required mine disturbance for the Annual Report period October 1, 2019 to September 30, 2020.

### PERMIT HISTORY

Surface Mining Permit 232 for the Wyodak coal mine was first issued by WDEQ LQD on November 26, 1974 and coal mining operations began in 1975. Based on the latest available data, 8 Permit 232 permit renewals will have been approved by WDEQ covering a 46-year period from 1974 to 2020. The original Wyodak, Clovis Point and East Gillette Mines were consolidated under Permit 232-T5 in 2001.

### DESCRIPTION OF COAL RESERVE & COAL QUALITY

The Wyodak Mine is currently producing more than 3.5 million tons of coal per year from the Wyodak formation upper and lower coal seams, averaging 80 feet thick, with variations of 20 feet up to a maximum of 100 feet. Average daily production is between 11,000 and 12,000 tons. The coal produced at this mine has a reported caloric value of 8,000 Btu/lb. The Black Hills Corporation website currently cites nearly 200 million tons of coal reserves. Additional coal quality metrics were not available through the Mine Plan or Annual Report documents provided by WDEQ.

### WATER RESOURCES

Wyodak Mine is in a 11 to 12-inch precipitation zone with 65% of that precipitation coming from summer thunderstorms in the months of May through September. Surface water drainages coursing through the mine permit area are all ephemeral with the highest flow rates owing to Spring runoff and measurable flow in stream channels occurring in the months April up through October, dependent upon snowpack from the prior winter and spring and recharge owing to the frequency of thunderstorms throughout the summer.