



0003

STATE OF UTAH  
NATURAL RESOURCES  
State Lands & ForestryNorman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Ralph A. Miles, Division Director

355 W. North Temple • 3 Triad Center • Suite 400 • Salt Lake City, UT 84180-1204 • 801-538-5508

RECEIVED

DEC 09 1985

DIVISION OF OIL  
GAS & MININGMEMORANDUM

TO: John Whitehead, Division Oil, Gas, and Mining

FROM: <sup>JB</sup> John T. Blake, Division State Lands and Forestry

SUBJECT: Technical Review of Gordon Creek #3 and #6 Mines  
Beaver Creek Coal Company

DATE: December 9, 1985

*JNA/COG/127*  
*#2*

As you may be aware the Gordon Creek #6 mine was undermined by the Gordon Creek #3 Mine. In 1981, when Beaver Creek Coal Company proposed secondary recovery in the #3 mine, the Division expressed its concern at possible effects on coal recovery in the #6 mine. The Company at that time guaranteed the absence of adverse effects by posting a surety bond with the State. Later, upon re-commencement of mining in the #6 mine, however, the Company abandoned the mine, allegedly for poor roof conditions. The Division of State Lands and Forestry suspects that previous undermining in the #3 mine may have in fact caused subsidence which contributed to abandonment conditions in the #6 mine. If that is the case then Beaver Creek Coal Company should be held accountable for poor mining practices in undermining the #6 mine and should be held financially liable for coal resources lost to recovery in the #6 mine. I am enclosing a copy of relevant correspondence from our files in this matter. Please analyze this situation from your perspective, employing appropriate geotechnical information, as you conduct your technical review of the Gordon Creek #3 and #6 mine plan. I look forward to receiving your comments and conclusion in this matter.

April 25, 1981

Mr. John Blake  
State of Utah Land Board  
Department of Natural Resources  
231 East 4th South  
Salt Lake City, Utah 84114

Re: Lease #ML-27342  
Gordon Creek #3 Mine  
Beaver Creek Coal Company

Dear Mr. Blake:

Thank you for taking the time to meet with us on Monday, April 20. This letter is to confirm our discussion.

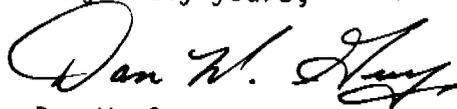
Because of very adverse geologic conditions, it is not economically feasible to extend mining further in the #3 (Hiawatha) seam at Gordon Creek. To maximize recovery of the area which has been developed, we plan to retreat to the portal, pulling the pillars as we go. Coal on either side of the main passageways in State Lease #ML-27342, which is mineable, will also be removed.

You indicated that the State of Utah desires the operator maximize coal recovery in the lease, and that you concur that the pillar extraction method of recovery is the only way to do this.

It is our understanding that pillar extraction will not violate any of the terms and conditions of the lease and that by utilizing such a recovery method, Beaver Creek Coal Company will be in compliance with the terms thereof.

If this is a correct understanding of our discussion, will you please acknowledge by returning a signed copy of this letter.

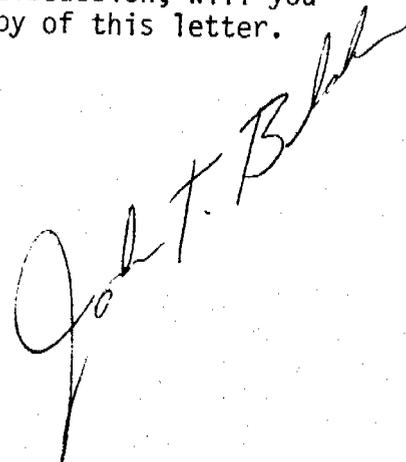
Very truly yours,



Dan W. Guy  
Engineering Manager

DWG/daf

*DWG*





DIVISION OF STATE LANDS & FORESTRY  
DEPARTMENT OF NATURAL RESOURCES  
ROOM 411 EMPIRE BUILDING  
231 EAST 400 SOUTH  
SALT LAKE CITY, UTAH 84114  
(801) 533-5381

Scott M. Matheson  
*Governor*  
Gordon E. Harmston  
*Executive Director*  
*Dept. of Natural Resources*  
William K. Dinehart  
*Director*

May 4, 1981

CERTIFIED MAIL NO. 667199

Beaver Creek Coal Company  
Attn: Don Guy  
P. O. Box AU  
Price, UT 84501

RE: ML 27342

Dear Mr. Guy:

As you recall, you recently visited me in my office to discuss closure of the Gordon Creek #3 mine. Due to adverse geologic conditions, we agreed on the diseconomy of further mining and the desirability of extracting all remaining mineable coal in Gordon Creek #3. In the course of our discussion I questioned the relationship of the proposed closure to the Gordon Creek #6 mine, or the "upper seam" of coal, and was assured that no adverse conditions would result. It was, in fact, my understanding that further mining is planned for Gordon Creek #6.

Although I confirmed our discussion through your letter of April 25th, I have since then had cause for concern. Owners of the Skaggs property adjoining your State lease are understandably upset that closure of Gordon Creek #3 will make their coal less accessible. Of greater concern to me, however, are claims that such closure may in fact cause sufficient displacement to make Gordon Creek #6 unmineable. It is my understanding that as much as 340,000 tons of coal reserves may be at stake in this upper seam. There is also a question as to the mineability of a middle seam in this area.

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Southwestern	ex-officio	Northern	Eastern Area	Forestry & Fire	Southeastern	Central

Beaver Creek Coal  
May 4, 1981  
Page 2

The State feels these claims deserve clarification and hereby requests that you not proceed with pillar extraction in Gordon Creek #3 pending our further investigation. In way of assistance, I respectfully ask that you supply us with an updated copy of your mine map along with detailed information concerning geology and interburden between the formations. I would also like a firm commitment regarding your plans for mining Gordon Creek #6 with respect to the State lease.

I will be passing through Price Thursday May 7, and hope to pick up the additional information and discuss this problem with you in greater detail at that time.

Sincerely yours,



JOHN T. BLAKE  
MINERAL RESOURCE SPECIALIST

JTB:mh

May 8, 1981

Mr. John Blake  
State of Utah Land Board  
Department of Natural Resources  
231 East 400 South  
Salt Lake City, Utah 84114

Re: Lease #ML-27342  
Gordon Creek #3/#6 Mines

Dear Mr. Blake:

Thank you for taking time to meet with us on Thursday, May 7, at our office. This letter is to confirm our discussion on that date and to re-confirm our previous agreement of April 20.

You indicated that there was some concern about the full pillar extraction in the #3 Mine for a long-term affect on the upper seam in this area. Mr. Skaggs had also expressed concern over access to future reserves in the north area of this property. We indicated that mining in the lower seam would have no affect on the upper seam due to the amount of interburden and type of rock strata between seams. We further indicated that mining the our Gordon Creek #2 Mine has been successfully performed over old workings of the Sweet's Mine with no visable affects of subsidence.

We agreed that a second opinion was desirable and at your request you were provided with the following information:

- 1) Updated map of #3 Mine (1"=200')
- 2) Map of #6 Mine (1"=200')
- 3) Drill hole logs on holes #1-76, MC3-2 and MC3-3

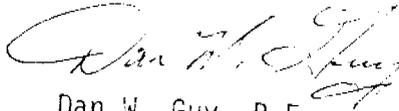
It is our understanding that this information will be presented to the U.S. Geological Survey for an opinion on possible subsidence

Mr. John Blank  
May 8, 1981  
Page Two

effects and that you will respond to Beaver Creek Coal Company within seven (7) days of your visit with the final opinion in this matter.

As I told you during your visit, we will be happy to answer any questions the USGS may have or provide any further information necessary for this evaluation. Also, if you have any further questions or need any additional information, please call me.

Respectfully,



Dan W. Guy, P.E.  
Engineering Manager

DWG/rh

cc: M.A. Robb  
D.W. Trepp  
J.H. Martin

SCOTT M. MATHESON  
Governor

OIL, GAS, AND MINING BOARD

GORDON E. HARMSTON  
Executive Director,  
NATURAL RESOURCES

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS, AND MINING  
1588 West North Temple  
Salt Lake City, Utah 84116  
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CLEON B. FEIGHT  
Director

MEMORANDUM  
\*\*\*\*\*

TO: John T. Blake, Mineral Resources Specialist, Division of State Lands and Forestry

FROM: Leland C. Spencer, Reclamation Engineer

SUBJECT: Secondary Mining of Hiawatha Coal Seam, Utah State Lease #27342

DATE: May 18, 1981

The Division of State Lands' concern for protection of its coal resources in the case of Coal Lease #27342 is well founded. The secondary mining of the lower Hiawatha Coal Seam indeed jeopardizes the recovery of the upper Castlegate "A" Coal Seam. Normally, the prudent mining practice for maximum recovery is to mine the uppermost seam first then progress to the lower seams. This rule generally applies to secondary recovery (pulling of pillars). It is also prudent to columnize upper and lower workings in developmental mining (first mining).

Beaver Creek Coal Company, a subsidiary of ARCO, wishes to abandon the Gordon Creek #3 Mine, after a stated loss of \$2.5 million. The reason for this loss is due to the numerous faults encountered. These faults were encountered periodically through mining development and mining continued with the hope that either the number of faults or the displacements would diminish. To Beaver Creek Coal Company's chagrin, faults intersecting the coal seam continued in high frequency and the displacements became larger. The decision to abandon their attempt precipitated when the mining in the Hiawatha seam was trapped between two faults (in a graben) with displacements on either side of 38 to 42 feet. Geologic evidence also inferred that more faulting would be encountered to the north. Beaver Creek Coal Company found that mining in the Hiawatha seam, in this area, even with eight feet of coal height would clearly be uneconomic if they continued. They had little chance, in the future, of recovering their investment.

Since Beaver Creek Coal Company has decided to abandon the Gordon Creek #6 Mine, they wish to recover as much of the coal in the Hiawatha Seam as possible on retreat mining (secondary mining). The Carbon County Commission has allowed Beaver Creek Coal Company to mine, "as they wish," in the County lease to the north of the State lease. Beaver Creek Coal Company is in the process of maximizing recovery by retreat mining in this area.

Due to this secondary recovery to the north of the State lease as well as being bounded by the abandoned works of the Old National Mine to the west and the outcrop to the east, the access to further reserves through the State lease are cut off.

A more pertinent consideration than future access to Hiawatha reserves is the concern that by secondary recovery of the Hiawatha Seam, the overlying Castlegate "A" Seam may be subject to subsidence and the reserves possibly precluded from future mining. In the upper Castlegate "A" Seam, even if subsidence occurred, access to the north could still be gained by driving through the Skagg's Fee lease, notwithstanding, that the same faulting problems encountered in the Hiawatha Seam would be found in the Castlegate "A" Seam as well.

Beaver Creek Coal Company estimates the coal reserves in the two seams in lease #27342 as follows:

Mine	Coal Seam	Thickness (ft)	Reserves	
			In Place (000's tons)	Recoverable (000's tons)
Gordon Creek #3	Hiawatha	+ 8	367	201
Gordon Creek #6	Castlegate "A"	+ 4	150.3	81.6
TOTAL RECOVERABLE				282.6

It would be to the State's advantage if both seams could be recovered. If only the Hiawatha Seam is recovered, the royalty loss, if Castlegate "A" is not mined, is \$12,240 at \$0.15 per ton. However, Beaver Creek Coal Company does not intend to reactivate the Gordon Creek #6 Mine even if reserves in the State lease remain. From a strictly financial situation, recovery of the Hiawatha Seam now for a possible royalty of \$30,165 is desirable. The future value of \$30,150 at 15 percent rate of return equals \$45,855 in three years. It is unlikely that either Beaver Creek Coal Company or anyone else will mine either seam in the next three years. Therefore, the State would recover \$45,855 (at 15%) in three years where the total royalty of the Castlegate "A" and the Hiawatha seams combined is \$42,390. This may be the same incentive that Beaver Creek Coal Company has for mining the Hiawatha Seam at the present time based on their rate of return.

An additional consideration is that there is a possibility the Castlegate "A" Seam may remain intact when the Hiawatha has been mined out below. In an adjacent area, an old map showed extraction up to 200 feet wide with a 200 foot interburden of sandstone and the upper seam remained intact. Typically, the pressure arch will remain static and no subsidence of the upper seam will occur if the mining width remains on third the overburden depth (Wardell et al. 1968).

In Beaver Creek's case, with the interburden equal to 210 feet (drill hole log MC-3-2), a possibility of stability in the Castlegate "A" Seam may exist with a mining width of over 70 feet. It may be that there were enough stumps (parts of pillars still intact) left unmined in the old works that the sandstone above remained intact and generally old maps are often inaccurate concerning coal recovery.

Beaver Creek Coal Company's extraction of the Hiawatha Seam appears to be approximately 54 percent. With a sandstone bridging between stumps, the Castlegate conceivably could remain intact. The overburden in this lease is generally between 200 feet and 600 feet thick. With uniform partial mining, the overburden may remain intact with between 45 percent to 50 percent extraction. This reviewer feels there is a chance that the Castlegate "A" Seam may remain intact, particularly if the loads are carried on the abutements and the widths in the interior (between abutements) remain small. This may be the case if it turns out that high extraction for extensive areas of the Hiawatha Seam is not possible.

#### Conclusion

In conclusion, this reviewer believes that there is a good possibility, in time, the Castlegate "A" reserves could be sterilized from secondary recovery of the Hiawatha Seam. The economic considerations of mining this area may outweigh this consideration for a number of reasons, including:

1. The present mining of the Hiawatha Seam at the present value of money benefits both Beaver Creek Coal Company and the State.
2. Once abandoned, the Hiawatha workings could deteriorate and future secondary recovery of the Hiawatha Seam would be jeopardized, since it would not be as economically as attractive as it is at present.
3. Access to other reserves for the future mining of this area due to faulting appears to be limited.
4. The Castlegate "A" seams four foot thickness makes the economics questionable under present market conditions and due to faulting mining of this area is not attractive and longwall methods are impossible.
5. Due to the poor roof conditions in the Castlegate "A" Seam, the seam cannot be mined clean and Beaver Creek Coal Company reports that cleaning plant reject is up to 30 percent. The economics of washing this coal as well as the adverse safety conditions make it unattractive.

The State should allow Beaver Creek Coal Company to pursue the secondary recovery of the Hiawatha Seam since in the long run, Beaver Creek Coal Company is in the best position to obtain recovery from the State's lease.

cc: Boyd McKean, USGS  
Max Robb, President, Beaver Creek  
LCS/btm



DEPARTMENT OF NATURAL RESOURCES  
ROOM 411 EMPIRE BUILDING  
231 EAST 400 SOUTH  
SALT LAKE CITY, UTAH 84114  
(801) 533-5381

Scott M. Matheson  
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Dept. of Natural Resources  
William K. Dinehart  
Director

May 18, 1981

CERTIFIED MAIL NO. 667204

Beaver Creek Coal Company  
Attn: Dan Guy  
P. O. Box AU  
Price, Ut 84501

Dear Mr. Guy:

Since my letter of May 4, 1981, I have had opportunity to consider pillaring of the Gordon Creek #3 mine in greater detail.

I understand your position to be that pillaring of the Gordon Creek #3 mine will likely have no significant impact upon the Gordon Creek #6 mine, lying above, due to the depth and nature of interburden material. The State does not share your optimism, however, and is concerned over the possible loss of coal resources in the #6 mine.

We are, of course, both concerned that mining on the State lease be conducted in such a manner as to maximize conservation of the resource. This would normally require that coal bearing formations be mined from the top and down; i.e., pillar Gordon Creek #6 first, then pillar Gordon creek #3. Nevertheless, ARCO has chosen to suspend operations in Gordon Creek #6 and to strip out the lower coal seam.

The State hereby gives consent to your proceeding with operations to pillar Gordon Creek #3 mine. We request, however that you guarantee payment of royalty on all "recoverable" State (ML 27342) coal in the Gordon Creek #6 mine. Such guarantee is acceptable in the form of a surety bond in the amount of \$12,240. This amount is premised on a coal resource of approximately 81,600 tons of State coal reserves in the Castlegate "A" seam, (your estimate), and a royalty rate of 15¢ per ton. The bond will be released either: 1) when mining operations commence in the Castlegate "A" seam through

BOARD MEMBERS

- |                        |                      |                   |                  |                   |                |                 |
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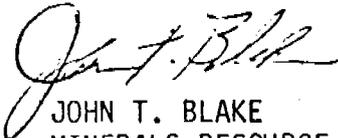
Beaver Creek Coal Company  
May 18, 1981  
Page 2

State leased lands, or, 2) at the end of 10 (ten) years providing State (ML 27342) coal in the Castlegate "A" seam has not been sterilized from recovery as a result of subsidence or shearing pursuant to your operations in the Hiawatha seam. Please post this bond prior to the commencement of pillaring operations on ML 27342 in the Hiawatha seam.

The State requests that you regularly monitor subsidence and shearing in the vicinity and provide us with an annual report. We would also like to be kept posted on the progress of pillaring activity through the State lease. If the interburden material is as solid as you maintain, we expect a high rate of recovery.

Please contact me should you have any questions.

Sincerely yours,



JOHN T. BLAKE  
MINERALS RESOURCE SPECIALIST

JTB/mh

June 25, 1981

Mr. John Blake  
Mineral Resource Specialist  
Dept. of Natural Resources  
Room 411 - Empire Building  
231 East 400 South  
Salt Lake City, Utah 84114

Re: State Lease #27342  
BCCC #6 Mine

Dear John:

As per our discussion on Monday, June 22, I have enclosed a map and calculations of the recoverable tonnage within the existing development at our Gordon Creek #6 Mine.

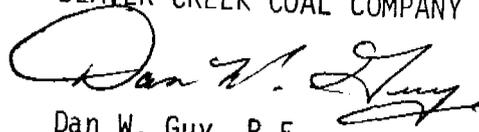
The tonnage estimate is 22,400 recoverable tons; therefore, Beaver Creek Coal Company is prepared to post a bond for \$3,360 (22,400 tons x \$.15/ton) as surety to the State of Utah for this coal.

If the above is acceptable, and you concur with our plans to proceed with the pillaring on the State Lease in our Gordon Creek #3 Mine, please indicate by returning a signed copy of this letter.

Thank you for your consideration, and for taking time to meet with us.

Respectfully,

BEAVER CREEK COAL COMPANY



Dan W. Guy, P.E.  
Engineering Manager

DWG/daf

Enclosures

cc: Lee Spencer, Utah Div. O., G. & M.  
John Hardin, ARCO  
Max Robb, BCCC  
File

NO. 6 MINE

BEAVER CREEK COAL COMPANY

RECOVERABLE TONS IN STATE LEASE NO. 27342

1. Existing Developed Pillars

Pillars - 44

Pillar Size - 60' x 60'

Seam Height - 4'

Pillar Recovery - 50%

*65% optimum*

Recoverable Coal In Existing Pillars ----- 12,700 Tons

2. Rooming And Pillaring On Retreat

Seam Height - 4'

Recovery - 50%

Recoverable Coal In Secondary Pillars ----- 9,700 Tons

Total Recoverable Tonnage ----- 22,400 Tons



TEMPLE A. REYNOLDS  
Executive Director,  
NATURAL RESOURCES

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS, AND MINING  
1588 West North Temple  
Salt Lake City, Utah 84116  
(801) 533-5771

CHARLES R. HENDERSON  
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Director

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MEMORANDUM

TO: John T. Blake, Mineral Resource Specialist, Division of State Lands  
FROM: Leland C. Spencer, Reclamation Hydrologist  
SUBJECT: Bonding of Castlegate A Seam  
Utah State Lease No. 27342  
Beaver Creek Coal Company  
DATE: July 15, 1981

I received Mr. Dan W. Guy's estimate of recoverable coal reserves--22,400 tons. Mr. Guy has used 50 percent recovery. For estimating purposes, I feel that 65 percent recovery may be more appropriate in this case, since 50 percent is often used more in the context of total overall mine reserve recovery. The 50 percent recovery factor generally accounts for losses, barriers and pillars lost due to development.

The actual recovery may vary in actual mining due to roof and loading conditions encountered after retreat mining begins.

Another consideration is the applicability of Article IV of the General Safety Orders Utah Coal Mines, January 1, 1976, Section 30(b) states:

(b) Barrier pillars not less than ten feet plus two feet for every foot of thickness of coal bed, plus five feet for each 100 feet of cover over the bed at the boundary line, shall be retained within the boundary lines of each mine property where more than one coal bed is working within a mine, the width of such boundary barrier pillars shall be calculated on the basis of the sum of the total thicknesses of the various coal beds so worked. Pillars of lesser widths may be



allowed or the removal or penetration of such pillars may be permitted with the approval of the Industrial Commission; however, where different owners operate adjacent properties there shall first be written agreement between them.

In the case of recovery of the Castlegate A (upper seam) and the Hiawatha Seam (lower seam), Beaver Creek Coal Company should leave barriers from the State Lease Boundary as follows:

Hiawatha Seam:

Overburden - 300-600 ft  
Thickness - 8 ft

Barrier Pillar Hiawatha Seam

$$10 \text{ ft} + (2 \text{ ft})(8 \text{ ft}) + \frac{(5 \text{ ft})(600 \text{ ft})}{(100 \text{ ft})} = 56 \text{ ft}^*$$

Castlegate A Seam:

Overburden - 150-450 ft  
Thickness - 4-5 ft

Barrier Pillar Hiawatha Seam:

$$10 \text{ ft} + (2 \text{ ft})(5 \text{ ft}) + \frac{(5 \text{ ft})(450 \text{ ft})}{(100 \text{ ft})} = 42.5 \text{ ft}^*$$

\*May vary.

Unless the adjacent owners have granted permission to extract coal up to these boundaries, no coal should be extracted on secondary mining within the limits of these property barrier pillars.

Due to the 65 percent extraction ratio and the barrier pillar requirements, the bond amount could be adjusted as follows for the Castlegate A Seam:

1. Existing Developed Pillars

Pillars--42  
Pillar Size--60 ft x 60 ft  
Seam Height--4 ft  
Pillar Recovery--65 percent

Recoverable Coal in Existing Pillars -15,725 tons

2. Room and Pillar Retreat

Seam Height--4 ft

Recover--50 percent

12,454 tons

Total Recoverable Reserves

28,179 tons

3. Bond Amount-- $(\$0.15)(28,179) = \$4,227$

If you should require further assistance, please call.

cc: Dan W. Guy

LCS/btm

*John T. Blake*  
*Lee Spencer*

*Lee Spencer*  
**BCC**  
July 20, 1981

CERTIFIED MAIL NO. 667384

Beaver Creek Coal Company  
Attn: Don W. Guy  
P. O. Box 40  
Price, UT 84501  
*SPENCER*

*Lee Spencer*  
*Division of Oil, Gas & Mining*

RE: ML 27342

Dear Mr. Guy:

Thank you for submitting your estimates of recoverable coal associated with the existing development stage of BCCC #6 mine. As you are aware, Mr. Lee Spencer of the Utah Division of Oil, Gas & Mining reviewed your estimates and raised some valid points, I believe, which increases the recoverable coal estimate to 28,179 tons, (see enclosure). Based on this latter estimate please post bond in the amount of \$4,227.00.

The bond should be posted using the Utah "Bond of Lessee" form, and prior to the commencement of pillarling State coal from the Hiawatha seam. As stated in my letter of May 18th, this bond will be held to assure mineability of the Castlegate A seam for either a period of ten years, or until actual mining of this seam resumes on the State lease, whichever event occurs first.

Sincerely yours,

JOHN T. BLAKE  
MINERALS RESOURCE SPECIALIST

JTB/mh

Enclosures

cc: Mr. Lee Spencer  
Division of Oil, Gas & Mining

1981

STANDARD OPERATING PROCEDURE

Acceptance of Bond - ML 27342

**October 2, 1981**

Beaver Creek Coal Company has purchased Surety Bond #8089-81-98 in the amount of \$4,227.00, with Federal Insurance Company as surety. This bond is to assure availability of coal resources from the presently developed Gordon Creek #3 Mine, Gatelegate A seam, on the above numbered lease, (such coal resources are feared in jeopardy of loss from recovery as a result of pillaring **Beaver Creek Coal Company** ed in the Gordon Creek #3 Mine, Hiawatha seam). The **1109 South Carbon Avenue** once for a period of ten years, or until actual mining **P.O. Box AU** A seam resumes on the State lease.

Price, UT

84501 bond appears in order and I recommend that it be accepted.

Gentlemen:

The Director, on August 31, 1981, accepted Bond No. 8089-81-98 in the amount of \$4,227.00 with you as principal and the Federal Insurance Company as surety to cover operations under ML 37342, Coal Lease.

I trust this information will be sufficient for your needs.

JOHN T. BBAKE  
MINERAL RESOURCES SPECIALIST

JTB/mh

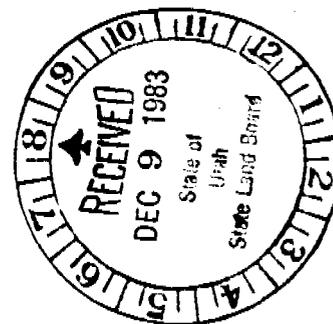
Yours very truly,

JOHN T. BBAKE  
MINERAL RESOURCES SPECIALIST

bp

CC: Federal Insurance Company  
300 Diamond Shamrock Tower  
Dallas, TX 75201

December 8, 1983



Mr. Dan Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box AU  
Price, Utah 84501

RE: Abandonment of Gordon Creek  
#3 & #6 Mines  
ACT/007/017, Folder #2  
Carbon County, Utah

Dear Mr. Guy:

John Blake of the Division of State Lands & Forestry, has recently expressed concern about the abandonment of the Hiawatha and Castlegate "A" seams on State Lease No. 27342 at the #3 and #6 Mines. The questions raised concern the justification for abandoning the Castlegate "A" Seam and the effect of second mining in the Hiawatha Seam, prior to the abandonment of the #3 mine.

Would you provide the following specifics:

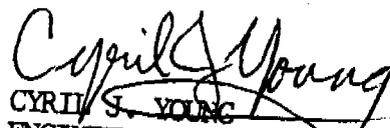
1. Cost per ton of coal mined for the last two years, broken down by seam.
2. Approximate reserves unmined within the state lease at the time of abandonment, broken down by seam.
3. Detailed mine maps for the Hiawatha and Castlegate "A" seams, showing faults and fault displacements, extent of mining in each seam prior to abandonment, which pillars were pulled and seam thickness specific to the State lease.
4. Your estimate as to the potential to reenter the Castlegate "A" Seam and mine above areas in the Hiawatha Seam which have been second mined.
5. Your estimate to reenter unaffected reserves in the Castlegate "A" Seam from another lease.

What we are specifically trying to ascertain is, if the reserves within the State lease have a potential for future mining, should it become economical to do so, or are they to be considered unrecoverable. If unrecoverable, has second mining in the Hlawatha Seam caused this situation.

These concerns were basically requested in the Division's reclamation review letter of September 8, 1983 and the ACR letter of May 2, 1983. We are herein asking for more detail due to State Lands concern about their lease #27342.

Some previous calculations were made in 1981 by Leland Spencer, Reclamation Engineer, for the Division. Copies of these memos are enclosed for your information. Should you have any questions, please call me.

Sincerely,

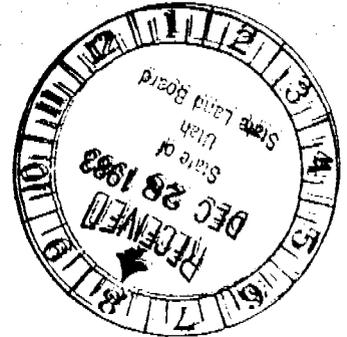
  
CYRIL S. YOUNG  
ENGINEERING GEOLOGIST

CJY/btb

- cc: J. Smith, DOGM  
P. Grubaugh-Littig, DOGM  
S. Cox, DOGM  
M. Boucek, DOGM  
John Blake, Division of State Lands & Forestry

December 14, 1983

Mr. Cyril J. Young  
Engineering Geologist  
Utah Division of Oil, Gas & Mining  
4241 State Office Building  
Salt Lake City, Utah 84114



RE: ABANDONMENT OF GORDON CREEK #3 and #6 MINES  
ACT/007/017 Folder #2  
Carbon County, Utah

Dear Mr. Young:

In reference to your letter of 12/8/83, I am submitting the following responses to each of your questions:

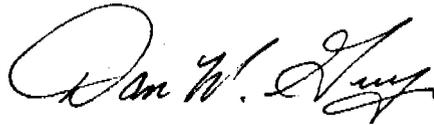
- (1) The No. 6 Mine (Castlegate "A" Seam) has not operated since Nov. 1980; however, the operating costs at that time were approximately \$60/ton. The No. 3 Mine (Hiawatha Seam) has averaged a mining cost of \$30/ton over the last 2 years. This figure includes depletion, depreciation, haulage, washing and yield loss.
- (2) Unmined reserves in the State Lease at the time of closure are estimated as follows:
  - #3 Mine (Hiawatha) - (0 tons - mined out)
  - In-Place - 161,200 tons
  - #6 Mine (Castlegate "A") - Recoverable - 0 tons - poor roof;  
uneconomic to mine
- (3) Detailed mine maps of each seam, showing all faults, seam thicknesses, pillared areas, and up-to-date extent of mining, are attached.
- (4) An attempt was made to inspect the #6 workings in the summer of 1982. Numerous roof falls and extremely dangerous roof conditions prevented access more than a few hundred feet into the mine at that time. Based on this visit and the fact that conditions will certainly worsen, it is the opinion of Beaver Creek Coal that there is no potential to safely and economically re-enter the Castlegate "A" Seam through existing workings.

- (5) Although it may be possible to re-enter the unaffected reserves in the Castlegate "A" Seam from another lease, it would likely be far too costly for the amount of mineable coal. This assumption is based on a number of reasons, including: (a) low coal and poor mining conditions make the "A" Seam uneconomical to mine in this area; (b) the faulting known to exist, as well as the projected faulting ahead of the workings, will further escalate the high mining costs; (c) lack of outcrops in the area will likely force access from 600' - 800' deep shafts; (d) poor mining conditions, such as those encountered in the No. 6 Mine, not only contribute to a poor quality product, but they also pose an extreme safety hazard to the miners.

In summary, it is the opinion of Beaver Creek Coal Co. that the remaining coal in the Castlegate "A" Seam, specifically in the State Lease #27342, does not have any potential for future mining based on economic and safety considerations. It could not be determined with certainty that this area has been affected by subsidence; however, it is possible, as evidenced by some subsidence cracks on the #6 Mine bench. At worst, subsidence would have made this area more dangerous and less economical to mine--at best, the reserve remains undisturbed by subsidence, but still dangerous and uneconomical to mine.

I hope this letter has helped to clarify our reasons for not re-entering the Gordon Creek No. 6 Mine. If you have any questions or need any further information, please let me know.

Respectfully,



Dan W. Guy  
Manager of Permitting & Compliance

cc: R.D. Robison  
S.M. Raymond  
File

637-5050

DG/cn



July 4, 1985

Mr. John T. Blake  
Minerals Resources Specialist  
Utah Department of Natural Resources  
Division of State Lands  
Room 411, Empire Building  
231 East 400 South  
Salt Lake City, UT 84111



RE: State Lease ML-27342  
Gordon Creek No. 6 Mine

Dear Mr. Blake:

The Gordon Creek No. 6 Mine began operation in December, 1978 and ceased operations in November, 1980. The portals were sealed in September, 1983. No pillar extraction was performed in this mine, either on or off the State Lease.

Pursuant to our recent phone conversation, I am providing the following list of reasons for our decision not to pull pillars in this mine:

- (1) Safety - Safety was a major consideration in our final decision to withdraw from this mine. The roof material was a slickensided shale in areas between sand channels. This type of roof is very unstable and unpredictable due to differential compaction along the channel margins. In addition, the sand channels contained water which would drain after mining, creating voids and further instability.

As a result of this instability, numerous roof falls were being experienced, often during the primary mining cycle before bolting could begin. As mining progressed northward, the roof shales thickened to over 10' and contained numerous Siderite (FeCO<sub>3</sub>) nodules. Roof falls became even more commonplace, often after bolting had been done, with the rock breaking above the bolts. The caves in the thicker shale areas would arch out and reach high enough (10' - 15') to create a "cathedral effect". With these conditions, it was decided that an extreme safety hazard existed throughout the mine, and any attempts to second mine the area would certainly be met with more injuries, and possibly fatalities.

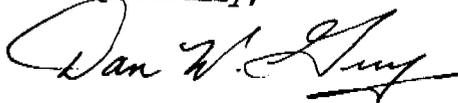
July 4, 1985

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- (2) Economics - The common roof spalling and caving in this mine led to high mining costs as well as the above mentioned safety hazards. The mining cycle became very labor intensive (due to rock cleanup, re-bolting, timbering, etc.). The mined coal was diluted with rock, and even though the coal was washed before sale, the reject would average about 35%, often reaching 50% - 60%. Mining costs rose to nearly \$75/ton, and production was very low due to the poor conditions. High cost, high reject, and low production made it uneconomic to continue to mine in this property. It was not likely that the production would increase, or that the rejects and costs would decrease significantly, even if pillaring were to be done. The safety hazard and high cost combination led us to the final decision not to pull pillars.
- (3) Geology - The depositional features of the roof rock described above were a major negative geologic factor in this mine; however, other geologic problems, such as: (1) Low coal (less than 5'), (2) Numerous faults and dikes and (3) low cover, further aggravated an already high risk, high cost mining situation. The east  $\frac{1}{4}$  to  $\frac{1}{3}$  of the State Lease was under less than 150' of cover, which would not have been pillared even if conditions allowed.

I hope the above explanation will help to clarify the reasons that led to our decision to withdraw from the No. 6 Mine and State Lease ML-27342 without pulling any pillars. If you need further information, please let me know.

Respectfully,



Dan W. Guy  
Manager of Permitting and Compliance

DWG/sb

cc: M.P. Watson  
K.S. Fleck  
A.O. Whitehead  
File: 9-2-7  
IBM D2