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# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter

Governor

Dee C. Hansen

Executive Director

Dianne R. Nielson, Ph.D.

Division Director

355 West North Temple

3 Triad Center, Suite 350

Salt Lake City, Utah 84180-1203

801-538-5340

August 28, 1991

Mr. Jim Buck, Manager  
Amax Coal Industries, Incorporated  
One Riverfront Place  
20 North West 1st Street  
Evansville, Indiana 47708-1258

Dear Mr. Buck:

Re: NOV #N-90-18-2-1, Amax Coal Industries, Inc., Castle Gate Mine, ACT\007\004,  
Folder #5, Carbon County, Utah

The Division is requesting attention be given to the remaining requirements to abate Notice of Violation (NOV) #N-90-18-2-1. The submitted pond modifications have been reviewed and are approved for construction upon receipt of the State engineer's construction permit. Additional requirements to meet approval as an amendment to the Mining and Reclamation Plan (MRP) are outlined in the memo dated August 26, 1991 from Sharon Falvey. (Please take note of requirements still necessary for abatement of this NOV.)

Thank you for your attention to this matter. Should you have any questions, or need additional information, please contact Sharon Falvey, Reclamation Hydrologist, or myself.

Sincerely,

A handwritten signature in cursive script that reads "Daron R. Haddock".

Daron R. Haddock  
Permit Supervisor

mbm

cc: S. Falvey  
J. Helfrich

Document: BTEAM/N901821.NOV



Norman H. Bangertter  
Governor  
Kenneth L. Alkema  
Executive Director

State of Utah  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
SOUTHEAST UTAH DISTRICT

P.O. Box 800  
Price, Utah  
(801) 637-3671

Reply to: State of Utah  
Southeast Utah District  
Department of Environmental Quality  
Price, Utah 84501-0800

August 23, 1991

RECEIVED

AUG 26 1991

DIVISION OF  
OIL GAS & MINING

Sharon Falvey, Reclamation Hydrologist  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Dear Ms. Falvey:

Re: Sediment Pond Plans, Amax Coal Company, Castle Gate Mine

I have reviewed the referenced plans and offer the following comments:

1. The decant design, typical for all ponds with decants, cannot be constructed as illustrated. The valve operator is perpendicular to the pipeline which would require a complicated housing and valve operator extension. I recommend a more simple design be considered.
2. I recommend at least 1.5 feet separation between decant and 60 percent cleanout elevation. This will provide improved sediment retention during pond drainage or storm events. In order to accommodate this, I suggest we allow the operators to count storage from the maximum sediment storage. This small amount of water evaporates and infiltrates quickly.

With the exception of the above comments, I feel the ponds are acceptable. The modifications proposed will affect treatment performance and will require construction permits.

Call me if you have any questions.

Sincerely,

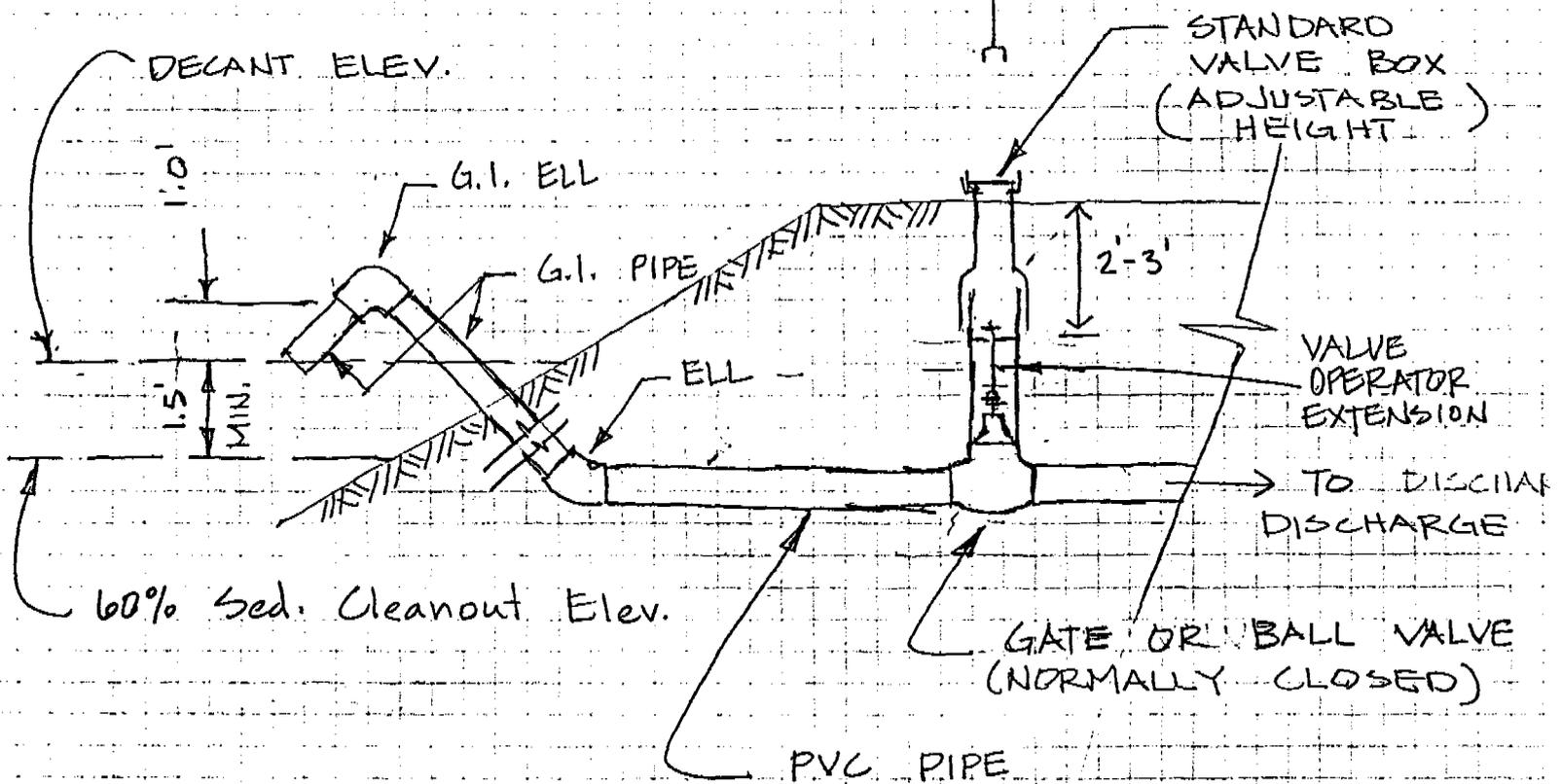
David R. Ariotti, P.E.  
Department of Environmental Quality

cc: Kiran Bhayani, Division of Water Quality

# TYPICAL DECANT

DRA

8/23/91



## NOTES & COMMENTS:

1. PROVIDE 2 VALVE KEYS (EXTENSIONS FOR OPERATING VALVE). KEEP ONE AT THE POND.
2. ALLOW OPERATOR TO COUNT STORAGE FROM 100% SED. ELEV. THIS WILL PROBABLY BE .5' BELOW DECANT.
3. USE GALVANIZED IRON (G.I.) PIPE FOR DURABILITY WHERE EXPOSED.
4. TURN DOWN PIPE IS MUCH SIMPLER TO CONSTRUCT (GREASE & FLOATABLE SEPERATOR)
5. GLOBE VALVES ARE MORE EASILY OPERATED ( $\frac{1}{4}$  TURN REQ'D TO OPEN OR CLOSE).  
TO OPEN OR
6. PROVIDES BETTER SED. RE REMOVAL.
7. VALVE OPERATOR EXTENSIONS W/ CENTERING DEVICE REQ'D. FOR PIPE BURIAL GREATER THAN 4'.
8. VALVE COULD BE INSTALLED NEAR DISCHARGE TO DECREASE BURIAL DEPTH.



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801-538-5340

August 26, 1991

**TO:** Daron Haddock, Permit Supervisor

**FROM:** Sharon Falvey, Reclamation Hydrologist

**RE:** Castle Gate Coal Company, NOV #N90-18-2-1 Abatement, ACT/007/004, Folder #2, Carbon County, Utah

## Summary

On December 19, <sup>1990</sup> 1991 Violation N90-18-2-1 was issued to Castle Gate Coal Company based on failure to provide adequate sedimentation control. On January 18, 1991 an extension was granted, at the request of CGCC, to submit the Amendment for abatement from January 18, 1991 to February 27, 1991. Implementation at that time was to be completed on March 19, 1991, as initially identified. On February 27, 1991 the Division received proposed pond designs to abate Notice of Violation (NOV) N90-18-2-1. An additional extension was granted, on March 7, 1991 at the request of CGCC, extending implementation and approval to June 30, 1991. Two additional maps for ponds 007 and 012 were submitted on March 20, with a labeling correction. On June 13, 1991 a deficiency letter was submitted to CGCC. Following the deficiency letter, CGCC requested a final extension based on administrative review time to abate the violation. A NOV modification was granted extending the abatement time for approval and implementation, to August 30, 1991. Subsequent to the extension the Division received CGCC's most recent revision on August 5, 1991.

Page 2  
Memo/S. Falvey  
August 26, 1991

**R614-301-732,-733,-742,-743,-744**

**SOWBELLY CANYON**

Operator's Proposal:

No changes are proposed for the existing pond structure in Sowbelly Canyon.

Compliance:

Ponds 003, 004, and 005 are connected in series. Although Ponds 003 and 004 were not mentioned in the NOV, they do not meet the requirements of the regulations identified in the NOV. Because they are hydraulically connected to pond 005, they should be addressed.

Recommendation:

During my June 3rd review I included the comment that, "It is the Division's preference that reclamation proceed as soon as possible. Therefore, I believe the applicant should be given a variance for Ponds 003, 004 and 005 with modification of the NOV. The Division Order dated December 18, 1990 has provisions that require site specific reclamation plans." Due to the short time nature of the existing ponds (1-2 yrs), the NOV was modified on June 26, 1991 to preclude pond 005 and its associated structures. The ponds will be sized for reclamation operations and are being updated in coordination with the Division Order.

**R614-301-120 PERMIT APPLICATION FORMAT.**

Operator's Proposal:

The operator refers to the existing and proposed ponds in the application.

Compliance:

To provide a complete and accurate application pages should reflect current conditions to be inserted directly into the plan.

Stipulation:

**Following construction all references describing the pond designs prior to reconstruction shall be removed or where applicable reworded to provide a clear and concise application. Text will be changed to reflect current conditions at the site following construction and, shall be identified so as to be directly inserted into the plan. This shall occur 30 days following pond construction.**

**R614-301-722**

**MAPS**

Operator's Proposal:

Drainage area maps Exhibit 3.3-4 A and 7.3 A were submitted with the addition of the watershed area HC-20.

Compliance:

1. The operator has committed to submit certified, accurate As-Built designs within 30 days following completion of construction for all reconstructed ponds as well as the culvert inlet at pond 10 which, is not currently indicated on Exhibit 11.7 or any other certified drainage area map.
2. The watersheds on Exhibit 3.3-4A do not match up with watersheds on 7.3A. All watersheds should be identified within the drainage area map, Exhibit 3.3-4A even if, the full boundary is not located on the map. According the submitted maps the drainage surrounding the powder magazine, does not report to a sediment pond.

Stipulation:

1. The operator will provide certified as-built designs that reflect current conditions of the plan. **All ponds undergoing construction changes will require certified as-built designs, as required by R614-514-310. This information is required 30 days following pond construction.**

- 1 a. If the culvert to pond 010 is strictly within the perimeter of the pond, the culvert must be placed in the As-Built design maps. If the culvert extends into the surrounding disturbed area, it must also be indicated on the drainage design map. **Provide information on the pond map, and any other applicable maps indicating the extent of the culvert in pond 010. This shall be submitted to the division 30 days following pond construction.**
  
2. Provide a certified, legible drainage area map for Hardscrabble Canyon, identify and label **all** watershed boundaries. The drainage map 3.3-4 A still does not identify all watersheds. The drainage area map must identify all drainage areas that contribute to the disturbed area drainage. **This map shall include the area that drains to downstream portion of the undisturbed drainage ditch to the limits of the disturbed area boundary. This map shall also include the identification of the sediment control structure for the Powder Magazine Area. Watershed boundaries should be comparable between maps. This information must be received before abatement can be granted.**

R614-301-741

**CONTROL OF DRAINAGE FROM DISTURBED AND  
UNDISTURBED AREAS**

Operator's Proposal:

The operator has submitted new designs for the Hardscrabble area and in doing so has provided information that shows inadequate sediment control measures, and ditch designs.

Compliance:

In Exhibit 3.3-4A, the Drainage Map of Hardscrabble Canyon, it is evident that the watershed area above and the disturbed boundary surrounding the Powder Magazine does not report to a sedimentation pond.

The area that drains to the downstream portion of the undisturbed drainage ditch boundary is not included in the design of that drainage ditch. Adequacy of ditch design for the new area contributing from watershed area HC-20 through culvert C-9 needs to be demonstrated by the operator.

Stipulation:

In Exhibit 3.3-4A, the Drainage Map of Hardscrabble Canyon, it is evident that **the watershed area above and the disturbed boundary area surrounding the Powder Magazine does not report to sediment pond 009. This area must have adequate sediment control structures (alternative sediment control structures or sedimentation pond) before abatement of the NOV can be granted.**

**Because of the design changes made in Hardscrabble Canyon to provide adequate pond sizing, adequacy of the ditch design for the new area contributing from watershed HC-20 through culvert C-9, and all watersheds surrounding and, draining to the disturbed area boundary must be demonstrated by the operator. This information must be received before abatement can be granted.**

R614-301-742

**POND SIZING**

**HARDSCRABBLE CANYON**

Operator's Proposal:

Pond 007:

1. Clean out existing pond to a minimum elevation of 6788 ft according to the submitted "Stage Capacity Curve," page 17, Appendix 3.3A.
2. Decrease the total volume of sediment storage.

Pond 008:

1. Raise embankment and re-design pond by cleaning out bottom.
2. Raise the elevation of the primary spillway 1.6 ft.

Pond 009A (upper pond):

1. Clean sediment out of the existing structure to a minimum elevation of 6310 ft.

2. Raise embankment

Pond 009B (lower pond):

1. Raise embankment, and re-design pond.
2. Decrease the area contributing to the pond through diverting drainage HC-20 to Culvert C-9 with the outlet at the undisturbed drainage ditch D-7 at the south west end of the site.

Compliance:

The operator has submitted designs that demonstrate adequate sizing for the design event. Although some ponds are indicated to have less than 3 years of sediment storage, the operator has committed to clean all ponds in the Hardscrabble area at the 60% sediment storage elevation. In the previous deficiency letter the operator was requested to either commit to a more conservative design or, commit to changing the text to reflect the actual sediment level used in the design and, to commit to survey the ponds (007, 008, 009A and 009B) annually to assure that adequate sediment storage and runoff volume is maintained as required by **R614-301-742.222.31**. In addition, the operator would commit to cleaning out pond 009B annually to assure adequate containment of the design event as required by **R614-301-742.221.33**. The operator opted to assure adequate sediment volume is maintained in the ponds but, fell short of a commitment to demonstrate the adequacy through an annual survey. **Because the operator has committed to clean out at the 60% level, the ponds should be able to maintain adequate detention volume. Therefore, it is on the onus of the operator to prove that there is adequate storage available at any time that an inspector may question the existing sediment storage volume.**

Stipulation:

None.

## **CASTLEGATE AREA**

### Operator's Proposal:

#### Pond 010: Adit Area

1. Increase pond capacity by raising the embankment and lowering the pond bottom from 6168 ft. to 6166 ft.
2. Raise the spillway crest.
3. Install a 12 inch half-culvert to direct flow away from the embankment.

#### Pond 011:

1. Increase pond capacity by lowering the pond bottom and raising the embankment.

#### Pond 012A:

1. Decrease the height of the primary spillway. Because the pond has excess sediment storage, decreasing the primary spillway still allows for adequate detention time for the 10 yr. 24 hr event and adequate sediment storage according to the methodologies used by the applicant.

#### Pond 012B:

1. Increase pond volume.
2. Remove the existing primary drop inlet spillway and replace it with a single open channel spillway.

#### Pond 013:

No Design changes.

Compliance:

The operator has demonstrated adequate pond sizing, but I could not locate any other commitment in the submitted application text to identify that these Ponds will be cleaned out at the 60% level. In the most recent operators response received by the Division on August 5, 1991 the operator indicated that all ponds would be cleaned out at the 60% level.

Stipulation:

None. The operator is responsible for meeting the requirements of the State Health Department.

**R614-301-742**

**DEWATERING DEVICES**

Operator's Proposal:

The Operator has included a method to provide a non-clogging dewatering device in the ponds. The operator has proposed to install these at the maximum sediment level. Ponds 009A, 011, 012A, 013, 014, 015 use portable pump decant systems. Ponds 008, 009B, 010, 0 012B use decants with a locking 2" pipe with an oil skimmer.

Compliance:

The operator is in compliance with this regulation.

Stipulation:

**The operator must make the decant design changes required by the State Health as indicated in attachment letter dated August 23, 1991.**

**R614-301-742, -743, -744**

**SPILLWAYS**

**SOWBELLY CANYON**

Operator's Proposal:

No changes to the existing pond structure in Sowbelly Canyon.

Compliance:

See Pond Design.

Stipulation:

None

**HARDSCRABBLE CANYON**

Operator's Proposal:

Pond 007:

1. Add an emergency spillway sized for the 25-year 6-hour event. (This spillway would pass flow over the road at the south end of the pond).

Pond 008:

1. Raise the elevation of the primary spillway 1.6 ft.
2. Add an emergency spillway to the proposed pond design sized for the 25-year 6-hour event. The crest of the emergency spillway is proposed to be at 6680.0 ft.
3. Upgrade riprap from the present D50 = 1 inch to a D50 = 9.6 inches, 15 to 18 inches deep at the outlet of the primary spillway.

Pond 009A (upper pond):

No change in spillway design.

Pond 009B (lower pond):

1. Add emergency spillway to the proposed pond design.

Compliance:

The operator has submitted designs that demonstrate adequate sizing for routing the design event through the spillways.

Stipulation:

None.

**CASTLEGATE AREA**

Operator's Proposal:

Pond 010:  
Adit Area

1. Raise the spillway crest.

Pond 011:

1. Decrease height of riser on the primary spillway.

Pond 012A:

1. Decrease the height of the primary spillway.
2. Add an emergency spillway to the south east end of the pond. The spillway outlet is along the north side of the road separating ponds 012A and 012B. The Spillway will direct the flow over the road. No defined channel design is included.

Pond 012B:

1. Remove the existing primary drop inlet spillway and replace it with a single open channel spillway.

Pond 013:

1. The operator provides information to demonstrate that the spillway is designed as an open channel that provides adequate protection to safely pass the design event. The operator checked the peak from the 25yr-24hr. event to pass through the spillway design after demonstration that the 25yr-24hr event has a greater peak than the 100yr.- 6Hr. event.

Compliance:

The operator has demonstrated adequate spillway sizing and has submitted designs for the added emergency spillway. The applicant meets the requirements for MSHA spillways and meets the single open channel spillway requirement as outlined in Federal Register 53 FR 43584 effective 11/28/88.

Stipulation:

None

**CRANDALL CANYON**

Operator's Proposal:

The operator has included emergency spillway designs for ponds 014 and 015.

Compliance:

The operator is in compliance with the spillway requirements.

Stipulation:

None.

R614-301-742

## EROSION PROTECTION

### Operator's Proposal:

The overland flow drainage contributing to Pond 010 was determined to have an erosive velocity of 8 ft/second as it enters the pond page 5 section 3.5-3. of the initial review. The operator has removed text indicating that the erosive velocity no longer exists. This area is considered to be stable by the applicant. Any subsequent evidence of erosion in this area will require reevaluation by the permittee.

The submitted design indicates the west inlet channel of pond 013 presently has under-designed riprap sizing. The existing riprap has a median diameter (D50) of 12" the required median diameter is 16.8" with the submitted design. The operator reevaluated this based on the 25yr.-6hr. storm event. The operator is proposing redesign of the area contributing to pond 013. **Some of the drainage require sizing for the 100yr.- 6hr. event. In the review it may be determined that adequacy of the riprap sizing will need to be readdressed.**

### Compliance:

The operator is in compliance with this section.

### Stipulation:

None.

## Recommendation

It is my recommendation that CGCC commence with their proposed pond design changes. The previously indicated deficiencies will be attached as stipulations and requirements for abatement of the NOV as indicated.