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DEPARTMENT OF NATURAL RESOURCES
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August 10, 1989

Donald C. Ewigleben
Manager, Regulatory Affairs
Castlegate Coal Company
P.O.Box 6106
Indianapolis, Indiana 46206-6106

Dear Don Mr. Ewigleben:

Re: Castle Gate Coal Company, ACT/007/004, N89-31-1-2 and N89-31-2-1, Carbon County, Utah

Pursuant to our telephone conversation of August 9, 1989, I have enclosed examples from two approved mining and reclamation plans that describe how field determination of the need to clean a given sediment pond may be reached through the use of established sediment markers. A third example describes a timetable for surveying the pond to determine resident sediment in storage. The surveys to be done on a frequency, based on the rate of sedimentation in the specific structure.

I hope these examples will further a timely resolution of the issues contributing to the above cited Notices of Violation.

Sincerely,

Lowell

Lowell P. Braxton
Associate Director, Mining

vb/jb
Enclosures
cc: Tom McKenna, Castle Gate Coal Co.
J. Helfrich
S. Linner
M. DeWeese
MI78/5

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GENWAL

7.2.3.2 Runoff- and Sediment-Control Facilities

Results of analyses to determine the required size and hydraulics of the sedimentation pond are included in Appendix 7-4. In sizing the pond, plans for future expansion of the surface facilities at the Crandall Canyon Mine were accounted for. Details of the sedimentation pond required for compliance with 30 CFR 77.216-1 and 30 CFR 77.216-2 are contained in Appendix 7-8.

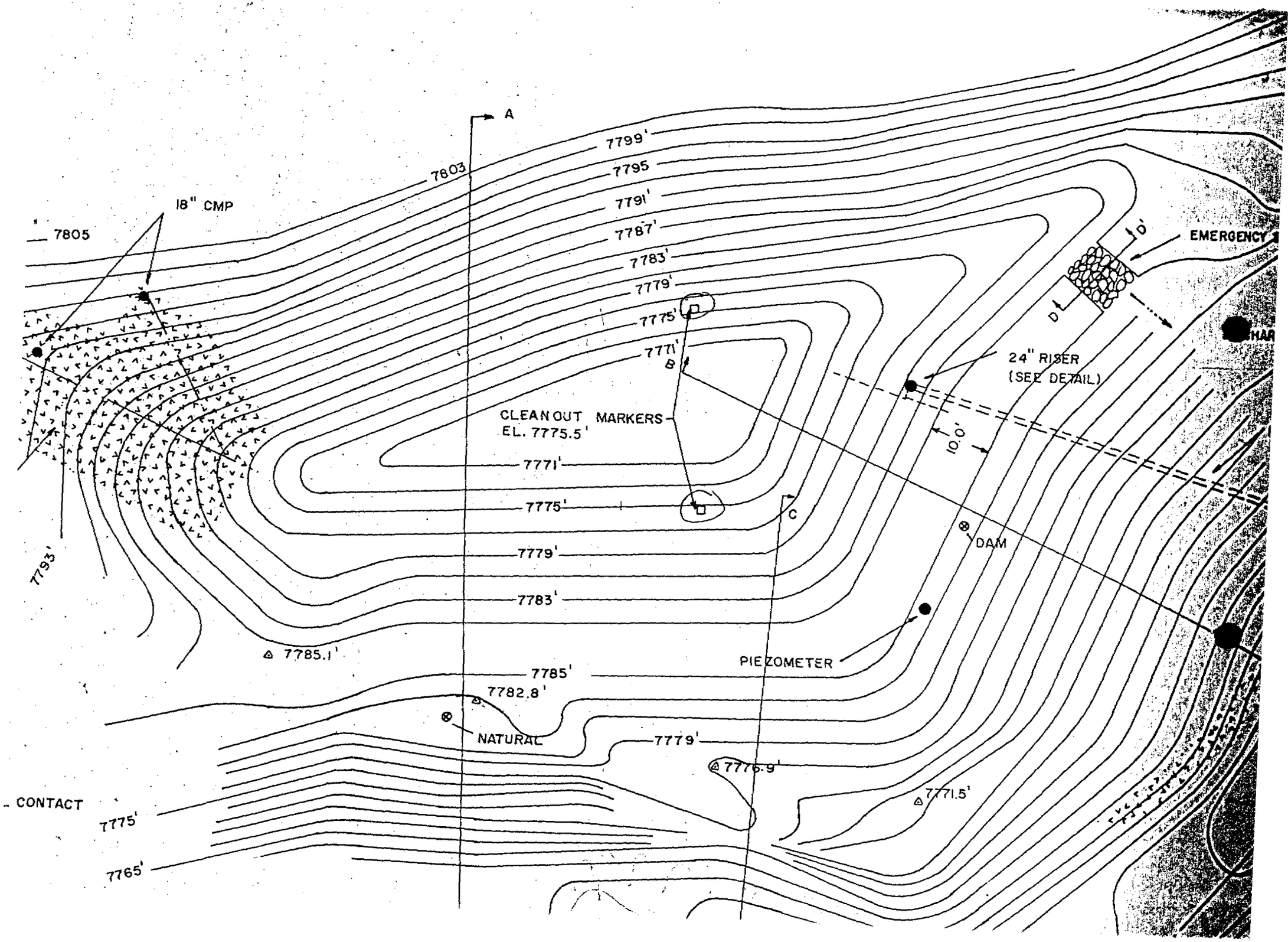
Runoff to the sedimentation pond from the 10-year, 24-hour storm was determined to be 0.68 acre-foot (with 0.30 acre-foot originating on reclaimed and undisturbed areas and 0.38 acre-foot originating on disturbed and ponded areas). Required sediment storage for the pond was determined to be 0.31 acre-foot, including 0.27 acre-foot from disturbed areas and 0.04 acre-foot from undisturbed and reclaimed areas over a 10-year period. Hence, the pond was designed with a total storage volume of 0.99 acre-foot.

Plate 7-4 presents details of the proposed sedimentation pond design. Cross sections refered to on the plate are found on Plate 7-6. Based on the topographic map of the pond, the stage-capacity curve provided in Figure 7-11 was developed. This stage-capacity curve has taken account of the clay liner and the gravel marker noted on Plate 7-4.

As noted in Figure 7-11, the new pond will provide sediment storage to an elevation of 7777.1 feet and total storage (sediment plus runoff) to an elevation of 7782.6 feet. Sediment will be cleaned out of the pond when it reaches an elevation of 7775.5 feet at the riser (the elevation corresponding to a volume of 60 percent of the required sediment storage volume). Two steel stakes will be placed at the locations shown on Plate 7-4 to mark the sediment cleanout elevation of 7775.5 feet.

Sediment removed from the pond will be initially stored in the location noted on Plate 3-1. Permanent disposal of the sediment will be in accordance with Section 3.3.9.

The existing riser in the sedimentation pond has an overflow elevation of 7779.4 feet and a decant elevation of 7776.4 feet. A new decant system will be installed according to Plate 7-6 with an overflow elevation of 7777.1 feet (i.e., at the top of the sediment storage level). A gate valve will be installed as noted to allow manual draining of the pond. A locked cap will be placed over the access port to the gate valve to prevent unauthorized entry. The key to this valve will be kept at the Genwal office in Huntington. Under no circumstances will water be discharged from the sedimentation pond to Crandall Creek prior to 24 hours from the end of the runoff event to the pond.


A
7799'
7795
7803
7791'
7787'
7783'
7779'
7775'
7771'
B
18" CMP
7805
CLEAN OUT MARKERS
EL. 7775.5'
7771'
7775'
C
7779'
7783'
7793'
7785.1'
7785'
7782.8'
NATURAL
7779'
7776.9'
7771.5'
CONTACT
7775'
7765'
PIEZOMETER
DAM
10.0'
24" RISER
(SEE DETAIL)
D
D'
EMERGENCY

SOLDIER CREEK

Riprap should be placed in the inlet channel and below both outlet conduits of the pond in order to disipate energy and reduce erosion potential. Searcy (1967) indicates that riprap with a median diameter of 6 inches should be adequate in both cases and is, therefore, suggested for use.

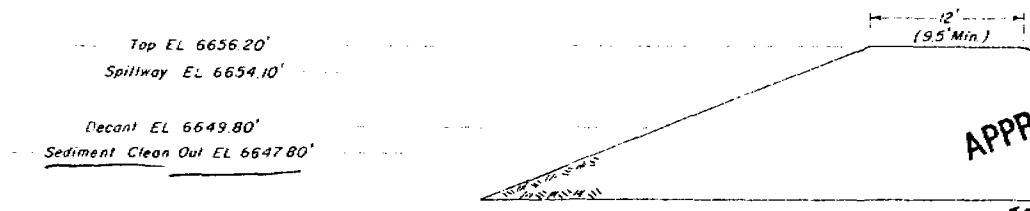
All connections (joints, seals, etc.) must be watertight in order to prevent structural failure and soil piping. Several types of watertight corrugated metal pipe are available but they must be requested as such. Particular attention should be paid to welded joints (riser and conduit connections, conduit and manhole connections, etc.).

The embankment fill material should be placed in 6- to 8-inch thick continuous layers over the entire length of the fill and machine compacted. Material immediately around the conduits leading through the embankment should be hand compacted to prevent damage by machinery.

Sediment Disposal Plans

Federal and State regulations require that sediment which has accumulated in the pond be removed when 60 percent of the design sediment storage volume has been filled. The point at which cleanout becomes necessary can be marked with paint on the spillway riser following the construction of the pond. The sediment can be assumed to settle uniformly over the basin (based on observations of the existing temporary pond).

Adequate sediment disposal areas are nearly non-existant at the mine site because of slope and access problems. A disposal site with a surface area of 2500 square feet (50 feet by 50 feet) and a depth of slightly over 6 feet will provide enough



APPROVED N.O.V. ABATEMENT PLAN
To Approved Mining & Reclamation Plan
Division of Oil, Gas & Mining
by D.W. Hedberg date 2/23/87
reviewer D. Cline / R. Harden

FILE COPY

Registered Professional Engineer
PALUSO
State of Utah

Revised 02/24/87

REVISIONS		
NO.	DATE	BY
1		
2		
3		

Soldier Creek Coal Company

SOLDIER CANYON MINE

SCALE: 1"=10'		TITLE: Surface Facility Sedimentation Pond, August 1986 Reconstruction, Generalized Cross Section No. 2				DRAWING NO. B126
DRAWN BY DGS	DATE 1/19/87	CHECKED	DATE	APPROVED	DATE	

of the bank. The pond is shown in plan view (Map 3.2.1-1) and in cross section (Map 3.2.1-2).

Surface runoff will enter the pond via gravitational flow.

Other than sediment removal when 60 percent of the design sediment storage volume is exceeded, only limited maintenance of the pond will be required. Past experience has shown that it takes a minimum of five years to acheive the 60% design storage level. Based on this, the pond will be surveyed three years after clean out, at which time a time table will be determined for subsequent surveys. Sediments will be tested for toxicity before being disposed of. They may be disposed of at the waste rock disposal area or pumped back into the mine.

Coal Load-out Sediment Pond

Prior to construction of the coal load-out sediment pond, topsoil and vegetation were removed from the pond site area. The pond was excavated to the proposed bottom elevation and the excavated material used to construct the dam. The dam was constructed in lifts of heights which ensured maximum compaction. A spillway pipe was added during the construction of the dam. After the dam was completed, a principal emergency spillway was constructed. The pond is shown in plan view and in cross section on (Map 3.2.1-4). The pond requires only limited maintenance, i.e., sediment removal to an approved disposal site when 60% of the design sediment storage volume is exceeded.