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file ACT/007/007
#2, #14

KAISER COAL

KAISER COAL CORPORATION
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March 11, 1986

John Whitehead
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RE: Icelander Wash Pond Reclamation
Sunnyside Mines, ACT/007/007

Dear Mr. Whitehead

Please find enclosed three (3) copies of the Icelander Wash Pond Reclamation plan requested by your office January 21, 1986. We apologize that this plan was not in your office on February 28, 1986 as requested. If you have questions on this submission, please contact me at the above number.

Sincerely,
Kaiser Coal Corporation

Douglas C Pearce

Douglas C Pearce
Mine Engineer

attachments

ICELANDER WASH POND RECLAMATION

PLAN

Sunnyside Mines ACT/007/007

Present Conditions

Icelander Wash Pond was constructed by creating a depression at the inside of an oxbow in the Icelander Wash stream channel. The oxbow is located (see drawing D5-0134) above a 4 foot concrete culvert under a historic railroad fill. A rip rapped channel around the the northwest corner of the pond embankment was provided to decant water from the structure. During, several years of use the pond depression filled with sediment to within several inches of the embankment crest. During a series of storms the runnoff overtopped the embankment and eroded the outslope fill. To prevent further damage the stream channel was diverted around the pond.

Stream Channel Restoration

The original stream channel plan view is shown on drawing D5-0134. The disturbed area is area is located between a abandoned railroad fill with a four foot cement culvet and the confluence of an ephemeral and a intermittent drainage. The intermittent stream is characterized by a shallow meandering stream bed (see Section A-A) with a well vegetated flood plain. The ephemeral drainage is characherized by steep side slopes and a very rough channel bottom.

A new channel bypassing the pond on the south side was constructed after the embankment breached. The new channel is characterized by a solid rock (Mancos Shale) bottom and a shallow meandering stream bed (see Typical Cross Section, Drawing D5-0134).

Head cutting is not expected to be a problem in the stream channel because of the concrete culvert located 40 feet downstream which will not allow upstream extension of erosion. The rock bottom is also expected to be extreamly resistent to erosion up to the confluence of the ephemeral and intermitent stream channels. Fill on the north side of the reclaimed channel which could be affected by the run off from a 100 year - 24 hour event will be protected by vegetation.

Slope Reconstruction

The pond embankment will be contoured to blend with the surrounding terrian. The immediate stream banks on the north side of the wash will be contoured to 2:1 slopes approximately

2.5 feet high as shown on Drawing D5-0134.

Reclamation

Revegation will be accomplished as outlined in Chapter III and IX of the Sunnyside Permit. The Pinyon-Juniper/Grass seed mix shown on Table III-17 will be used at broadcast rates. Narrowleaf willows cuttings will be placed every 4 feet along the north side of the stream channel at the soil-rock interface. Willows cuttings will be placed along the south side the stream channel where sufficient soil is available for growth.

Runoff and Flow Depth Calculations

Runoff was calculated using a storm hydrograph computer program writen by Richard H. Hawkins and Kim A. Marshall at Utah State University, Logan, Utah. A average CN (curve number) of 70 was calculated using the following information assuming good conditions:

Soil	Description	Soil Group	CN	Area
IGC	Ildefonso very stony loam 3-8%	B	61	183.2
IEE	Ildefonso very stony loam 8-30%	B	61	73.0
MRG	Menefee - rock outcrop	D	80	138.8
MUE	Cabba - Podo - Patmos complex	C	74	105.6
NJF2	Shingle - Ildefonso badland com.	D	80	52.8
KXH	Podo - Rock outcrop complex	D	80	24.8

INPUT SUMMARY
FOR W.S.: ICELANDER POND

STORM:	WATERSHED:
DISTRIBUTION = SCS TYPE 2	LAND SLOPE = 15.8000 PCT
	CURVE NUMBER = 70.00
PRECIP.DEPTH = 2.66 IN	CHANNEL LENGTH = 10000 FT
	TIME OF CONC. = 1.1219 HR
DURATION = 24.00 HR	AREA = 576.20 AC
NUMBER OF LINES = 176	D = .1496 HR

OUTPUT SUMMARY

RUNOFF DEPTH = .5338 IN
INITIAL ABSTRACTION = .8571 IN
PEAK FLOW = 107.98 CFS (.1859 IPH)
AT T = 13.31 HRS

Depth of flow in an open channel (1.46') was calculated using the CHEZY-MANNING EQUATION and the following assumptions:

Drainage slope	5.9%
Bottom width	4.0'
Side slopes	2:1
n	.03

Document Information Form

Mine Number: C1007/007

File Name: Incoming
Sunnyside

To: John Whitehead

From:

Person Douglas C. Pearce

Company Kaiser Coal

Date Received: 3/13/86

Explanation: Map - Drawing No. D5-0134

cc: