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Birmingham Coal & Coke Co., Inc.
Old Union #2 Mine, P-3962
Roadside Ditches, Primary Road No. 1

SCS 6 Hour

10 year, 6 Hour

4.3 Inches

J. David McGehee, PE/LS

General Information

Storm Information:

Storm Type:	SCS 6 HOUR
Design Storm:	10 yr - 6 hr
Rainfall Depth:	4.300 inches

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Channel	#1	==>	End	0.000	0.000	Roadside Ditches

#1
Chan'l

Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#1	2.300	2.300	5.56	0.45

Structure Detail:

Structure #1 (Riprap Channel)

Roadside Ditches

Trapezoidal Riprap Channel Inputs:

Material: Riprap

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)
5.00	2.0:1	2.0:1	26.5	0.50		

Riprap Channel Results:

Simons/OSM Method - Steep Slope Design

	w/o Freeboard	w/ Freeboard
Design Discharge:	5.56 cfs	
Depth:	0.06 ft	0.56 ft
Top Width:	5.23 ft	7.23 ft
Velocity*:		
X-Section Area:	0.30 sq ft	
Hydraulic Radius:	0.057 ft	
Froude Number*:		
Manning's n*:		
Dmin:	4.00 in	
D50:	12.00 in	
Dmax:	15.00 in	

Velocity and Manning's n calculations may not apply for this method.

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	1.000	0.025	0.000	0.000	81.000	F	2.42	0.197
	2	1.300	0.014	0.025	0.387	81.000	F	3.14	0.256
	Σ	**2.300**						**5.56**	**0.453**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	8. Large gullies, diversions, and low flowing streams	3.74	20.00	535.00	5.800	0.025
#1	**1**	**Time of Concentration:**					**0.025**
#1	2	8. Large gullies, diversions, and low flowing streams	11.52	60.00	521.00	10.180	0.014
#1	**2**	**Time of Concentration:**					**0.014**

Subwatershed Muskingum Routing Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	8. Large gullies, diversions, and low flowing streams	17.74	33.00	186.00	12.630	0.004
#1	**1**	**Muskingum K:**					**0.000**
#1	2	8. Large gullies, diversions, and low flowing streams	3.74	20.00	535.00	5.800	0.025
#1	**2**	**Muskingum K:**					**0.025**