

SUB-WATERSHED 6L  
(LAMBERTS RUN)

Sub-watershed 6L (Lamberts Run)

General Discussion

This sub-watershed encompasses 4.6 square miles or 2,946 acres of land area, which is approximately 3.31% of the total study area. It is drained by 4.9 miles of tributaries (2.09% of the total length of all watershed tributaries) and contains 4.3 acres of lakes and ponds (.16% of the total sub-watershed area). Commonwealth records indicate 10 surface mines and 7 deep mines in the area. We locate 6 strip mines, one flowing, and 22 deep mine openings, 9 of which have flows.

The following gives the averages of the sampling station designated as SC6L1, located at the mouth of Lamberts Run and shown on drawing 7119-6. The percentage that this station contributes in pollution load and flow to the total pollution load and flow as measured at Monitoring Station SC1 on Stony Creek is also included.

	<u>Averages</u>	<u>Percent of Total Watershed</u>
pH	3.7	
Net Cold Acidity	9,096.40 PPD	29.12%
Net Hot Acidity	3,115.40 PPD	2.87%
Ferrous Iron	119.70 PPD	15.61%
Total Iron	648.80 PPD	14.52%
Sulfate	33,398 PPD	17.34%
Hardness	38,589 PPD	18.74%
Flow	10,886,400 GPD	6.82%

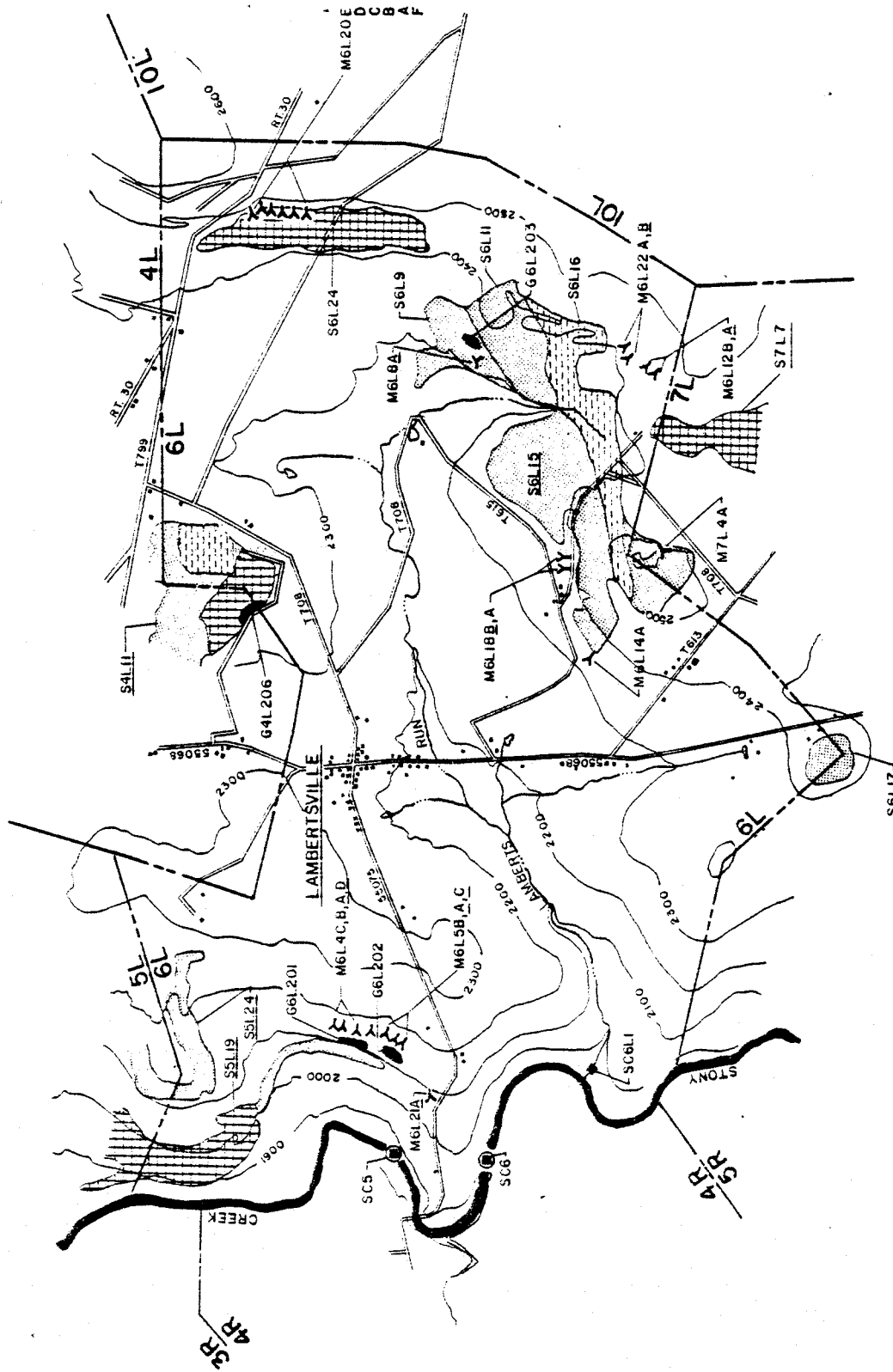
Stony Creek, up to this point, has been able to recover from the acid-bearing tributaries. It is, however, at Lamberts Run that Stony Creek becomes acid.

The following plate shows the locations of all deep mine openings and strip mines where they exist within this sub-watershed, as well as the locations of all sampling stations.

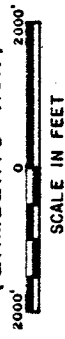
## Deep Mines

The Commonwealth records indicate that there are 7 deep mines in this sub-watershed. Our field investigations locate 22 deep mine openings of which 9 are flowing. Table 59 lists the abandoned deep mines within the sub-watershed with the following information: name of mine or operator if known, available mine maps, acres and seam mined, mine opening designation, openings with flows, estimated elevation of the openings and head in feet, which is the difference in coal elevations on an up-dip mine.

Table 60 gives the averages of the abandoned deep mine flows. Directly under the averages are the percentages of flows and pollution loads that each contributes to the pollution load of the sub-watershed as measured at Sampling Station SC6L1 (Lamberts Run). The averages, taken at mine openings, are added together where more than one opening of a mine complex has a flow.



**MAP OF  
SUB-WATERSHED 6L  
(LAMBERTS RUN)**



KEY PLAN

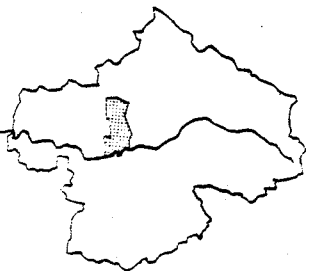


TABLE 59

Abandoned Deep Mines  
Sub-watershed 6L

Mine Number	Name of Mine or Operator	Mine Map Obtained	Area Mined (Acres)	Seam Mined	Mine Opening No.	Elev. of Opening	Flow	Head (Feet)
M6L4	Alumbaugh Coal Co.	Yes	87.2	C'	M6L4A	2180'	Yes	100*
		-		C'	M6L4B	2180'	No	
	Lambert's Mine & Sanner Coal Mining Co.	-	C'	M6L4C	2180'	No		
		-	C'	M6L4D	2180'	Yes		
M6L5	(See M6L4)	-	-	C'	M6L5A	2180'	Yes	100*
		-		C'	M6L5B	2180'	No	
		-		C'	M6L5C	2180'	Yes	
✓M6L8	E. Step Coal Co. Berkebile Coal Co.	No	-	C'*	M6L8A	2320'	Yes	Down Dip*
M6L12	H. J. Beam Coal Co.	No	-	E*	M6L12A	2440'	Yes	Down Dip*
		-		E*	M6L12B	2440'	No	
M6L14	Paul W. Johnson	No	-	B*	M6L14A	2340'	No	Down Dip*
	Unknown	No		C'*	M6L18A	2370'	No	
		-		C'*	M6L18B	2370'	Yes	

(TABLE 59 (Contd.))

Abandoned Deep Mines  
Sub-watershed 6L

Mine Number	Name of Mine or Operator	Mine Map Obtained	Area Mined (Acres)	Seam Mined	Mine Opening No.	Elev. of Opening	Flow	Head (Feet)
#M6L20	Unknown (Active Operation)	No		E*	M6L20A	2420'	No	
		-		E*	M6L20B	2420'	No	
		-		E*	M6L20C	2420'	No	
		-		E*	M6L20D	2420'	No	
		-		E*	M6L20E	2420'	No	
		-		E*	M6L20F	2420'	No	
M6L21	Unknown	No	-	B*	M6L21A	2080'	Yes	50*
M6L22	Unknown	No	-	E*	M6L22A	2410'	No	Down Dip
		-	-	E*	M6L22B	2410'	Yes	

\*Indicates assumed.

#Possible connection with Strip Mine S6L9.

#Possible connection with Strip Mine S6L24.

TABLE 60

Abandoned Deep Mine Average Water Quality Data  
Sub-watershed 6L

Mine No.	pH	Net Cold Acid ppd	Net Hot Acid ppd	Ferrous Iron ppd	Total Iron ppd	Sulfate ppd	Hardness ppd	Flow gpd
M6L4	3.1	227.34 2.5%	104.46 3.4%	4.94 4.1%	39.41 6.1%	259.39 .8%	160.13 .4%	92,160 .9%
M6L5	2.8	88.67 1%	98.25 3.2%	2.19 1.8%	189.91 29.3%	111.83 .3%	65.50 .2%	20,160 .2%
M6L8	3.1	90.76 1%	339.17 10.9%	.68 .6%	27.19 4.2%	602.89 1.85	703.21 1.8%	168,480 1.6%
M6L12	5.9	.24 -	.08 -	0 -	.03 -	.33 -	.50 -	2,880 -
M6L18	4.3	1.65 -	.07 -	0 -	.02 -	9.42 -	10.39 -	4,320 -
M6L21	6.0	8.01 .1%	2.35 .1%	.03 -	2.44 .4%	1.35 -	1.86 -	4,320 -
M6L22	5.4	.03 -	.06 -	0 -	.02 -	.19 -	.23 -	2,880 -

## Strip Mines

The Commonwealth records indicate that there are 10 strip mines in this sub-watershed. Our field investigations locate 6 surface mines with one flowing. Table 61 lists the abandoned strip mines within the sub-watershed with the following information: the name of the mine or operator if known, the area and seam mined, the designation we give the mine, whether or not there is a flow, and whether it connects with a deep mine.

The total acreage of abandoned surface mines in subwatershed 6L is 298.34 acres (10.13% of this sub-watershed area).

Table 62 gives the averages of the abandoned surface mine flows. Directly under the averages are the percentages of flows and pollution load that each contributes to the pollution load of the sub-watershed as measured at SC6L1, Lamberts Run.

Where a single surface mine has more than one flow, the averages of the flows are added together.

Following Table 62 are the descriptions of the flowing strip mines along with abatement recommendations.

TABLE 61

Abandoned Surface Mines  
Sub-watershed 6L Area

Mine Number	Name of Mine or Operator	Mined (Acres)	Seam Mined	Flowing	Connection w/Deep Mine
S6L9	Alumbaugh Coal Co.	27.54	E,D	No	M6L8
S6L11	Dunlo Coal Co.	39.47	B	No	No
S6L15	H & E Bradley Coal Co.	108.32	C',B	Yes	M7L4
S6L16	Unknown	55.08	D,C'B	No	No
S6L17	Alumbaugh Coal Co.	12.85	E	No	No
S6L24	Unknown	55.08	E*	No	M6L20

\*Indicates assumed.



TABLE 62

Abandoned Surface Mine Average Water Quality Data  
Sub-watershed 6L

Mine No.	pH	Net Cold Acid ppd	Net Hot Acid ppd	Ferrous Iron ppd	Total Iron ppd	Sulfate ppd	Hardness ppd	Flow gpd
S6L15	3.6	252.13	*	9.41	19.09	896.61	*	1,130,400
		2.8%		7.9%	2.9%	2.7%		10.4%

\*Not analyzed.

Strip Mine: S6L15

Area: 108.32 acres

Location: SE of Lamberts Run

Status: Abandoned

Owned by: H & E. Bradley Coal Company

Seams mined: B & C'

Connection with deep mine: M7L4

Flowing: Four leaching areas

General Description

The reclaimed northern portion is graded and planted with sparse vegetation. The center of the stripped area has many small spoil piles and depressions, while the southern portion has seven main depression which collect runoff.

Recommendation

While the reclaimed portion is progressing well, the unreclaimed needs much regrading and backfilling. Drainage ditches will be needed, however their location cannot be determined now. Revegetation will be necessary on 50% of the mine. Further, reclamation must be done in connection with the deep mine and strip mines to the east.

Cost:

Ditches	10,000'	\$ 10,000
Grading	30% at \$1800/Ac	60,000
Backfilling		10,000
Revegetation		<u>30,000</u>
	Total	\$110,000

## Recommendations

Table 63 gives the recommendations for the polluting deep and strip mines, along with the costs associated with each recommendation.

An estimated effectiveness of 60% reduction of the pollution load is assigned for each recommendation.

Table 64 lists the sources abated, the amount of beneficiation and the costs associated with each plan.

The distance from sampling station to the next polluting tributary downstream, SC4R1 is eight tenths of a mile. This is the minimum distance on Stony Creek that would benefit from Lamberts Run becoming a clean stream.

TABLE 63

Recommended Abatement Procedures - Cost Benefication  
Sub-watershed 6L

Rank	Number	Recommended Abatement		Total Costs		Cost \$/Pound Acid Removal		Total Acid Abatement ppd	Total Iron Abatement ppd	Percent of Total Sub-watershed	
		Known Sources	Poten- tial Sources	Known Sources	Poten- tial Sources	Known Sources	Poten- tial Sources			Acid	Iron
1	M6L8	1 Seal	-	\$25,000	\$25,000	\$ 459	\$ 459	54.46	16.31	.60%	2.51%
2	M6L4	4 Seals	3 Seals	80,000	140,000	587	1,026	136.40	23.65	1.50%	3.65%
3	M6L15	108.32 Acres	1 Seal	110,000	135,000	727	892	151.28	11.45	1.66%	1.76%
4	M6L5	3 Seals	4 Seals	60,000	140,000	1,128	2,632	53.20	113.95	.58%	17.56%
5	M6L21	1 Seal	-	25,000	25,000	5,198	5,198	4.81	1.46	.05%	.22%
6	M6L18	2 Seals	-	50,000	50,000	50,000	50,000	1.00	.01	.01%	-
7	M6L12	2 Seals	-	50,000	50,000	357,142	357,142	.14	.02	-	-
8	M6L22	2 Seals	-	50,000	50,000	2,500,000	2,500,000	.02	.01	-	-

Note: The potential costs above include the known costs.

TABLE 64

Beneficiation - Recommended Plans  
Sub-watershed 6L

Plan	Above Sources Abated	<u>Acid</u>		<u>Iron</u>		<u>Total Construction Costs</u>	
		ppd	% of Total Sub-water- shed	ppd	% of Total Sub-water- shed	Flowing Sources	Potential Sources
A	1 thru 8	401.31	4.41%	166.86	25.72%	\$615,000	\$565,000
B	1 thru 3	342.14	3.76%	51.41	7.92%	215,000	300,000

It is recommended that Plan "B" be initiated for this sub-watershed.