

Proposed Project Areas

Project Area: 3

Priority: First

Location: Powell Coal Company, Decker No. 3 Mine (D4)  
Decker No. 3 & 4 Gob Pile (G2)  
Dantella Brothers Strip Mine (S5)

		Estimated % Contribution
Size:	Deep Mine (D4) - 79 Acres	50
	Gob Pile (G2) - 9 Acres	10
	Strip Mine (S5) - 181 Acres	<u>40</u>
		100

Number of Discharges: 4

Recommended work:

D4 Deep Mine - Existing air seals to be replaced with hydraulic seals.  
Five (5) seals required.

G2 Gob Pile - Bury gob at the site.

S5 Strip Mine - Provide for minimal regrading to eliminate ponding and erosion and then seed.

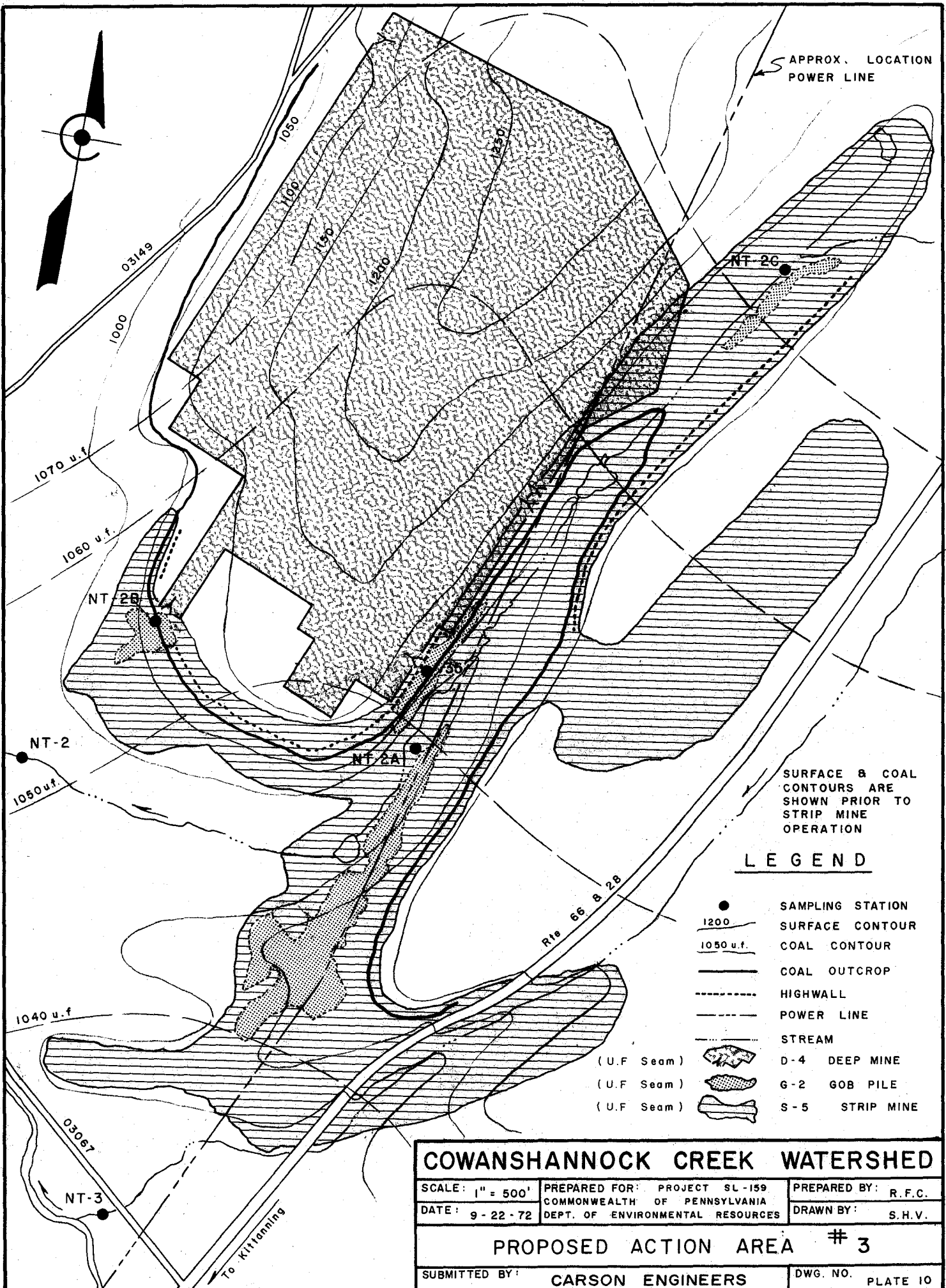
Cost:	D4 - 5 Seals @ \$15,000/Seal (Includes Nominal Grout Seal)	- \$ 75,000
	G2 - 9 Acres @ \$ 4,000/Acre =	36,000
	S5 - 181 Acres @ \$ 2,000/Acre =	<u>362,000</u>
		\$473,000

Note: Special Grout Curtain, If Required, Is Not Included In Cost.

Anticipated % Abatement: 60%

WATER SAMPLING DATA      COWANSHANNOCK CREEK WATERSHED      SL-159

Station	GPM	pH	ppm ACD	ppd ACD	ppm ALK	ppd ALK	ppm T.Fe	ppd T.Fe	ppm SO4	ppd SO4
Sta NT2										
Max.	1120	2.4	450	1340			77	402	1700	5025
Avg.	277	2.8	275	449			48	115	1185	1927
Sta NT2A										
Max.	448	1.9	31200	49920			97.5	1240	56000	89600
Avg.	176	2.4	7970	12867			73.8	407	14778	23309
Sta NT2B										
Max.	90	3.5	86	35			21	77	950	302
Avg.	25	4.2	57	13.9			12.8	15.5	509	119
Sta NT2C										
Max.	247	2.7	100	166			65	83	1350	1258
Avg.	99	3.5	56	60			32	33	659	559
Sta 35										
Max.	90	3.5	86	35			21	23	950	302
Avg.	25	4.2	57	13.9			12.8	4.7	509	119



APPROX. LOCATION  
POWER LINE

NT-2C

NT-2B

NT-2

NT-2A

1050 u.f.

SURFACE & COAL  
CONTOURS ARE  
SHOWN PRIOR TO  
STRIP MINE  
OPERATION

**LEGEND**

- SAMPLING STATION
- 1200 SURFACE CONTOUR
- 1050 u.f. COAL CONTOUR
- COAL OUTCROP
- HIGHWALL
- POWER LINE
- STREAM
- (U.F. Seam) D-4 DEEP MINE
- (U.F. Seam) G-2 GOB PILE
- (U.F. Seam) S-5 STRIP MINE

**COWANSHANNOCK CREEK WATERSHED**

SCALE: 1" = 500'	PREPARED FOR: PROJECT SL-159 COMMONWEALTH OF PENNSYLVANIA DEPT. OF ENVIRONMENTAL RESOURCES	PREPARED BY: R.F.C. DRAWN BY: S.H.V.
DATE: 9-22-72		

**PROPOSED ACTION AREA # 3**

SUBMITTED BY: CARSON ENGINEERS	DWG. NO. PLATE 10
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03149

1000

1070 u.f.

1060 u.f.

1050

1100

1150

1200

1250

1040 u.f.

03067

NT-3

To Kittanning

Rte 66 & 28

Project Area: 7

Priority: Second

Location: Margaret Mine Abandoned Gob Pile (G10)

Size: G10 - 8 Acres

Number of Discharges: 2

Recommended work:

1. Excavation & Burial in abandoned strip mine. (which abandoned strip mine not determined)
2. Grade the cover over buried material in order to eliminate ponding and to provide an adequate slope for rainfall runoff, and then plant with grasses.
3. Cover, grade and plant gob pile site.

Gob to be buried in compacted layers approximately one foot thick, covered with material from the strip mine highwall, and graded and planted for erosion control. This will result in the partial regrading of the selected strip mine.

Alternate 1: Dispose gob into Margaret No. 7 mine and flood after No. 7 mine is abandoned.

Alternate 2: Grade the gob pile, cover with clay topsoil end then cover with vegetation (This method expected to be least costly and least effective).

Cost	Excavation and Relocation of Gob	
Alternate 1'	283,000 cy CI 40c/yd	= \$113,000
	Strip Mine Grading & Planting	
	40 Acres @ \$2,000/Acre	= 80,000
	Gob Site Reclamation	
	8 Acres @ \$1,000/Acre	= <u>8,000</u>
		\$201,000

Cost	Graded to Cover a 12 Acre Area	
Alternete 2'	and Plented - 12 Acres @ \$5,000/Acre	= \$ 60,000

Anticipated % Abatement Alternate 1: 90%

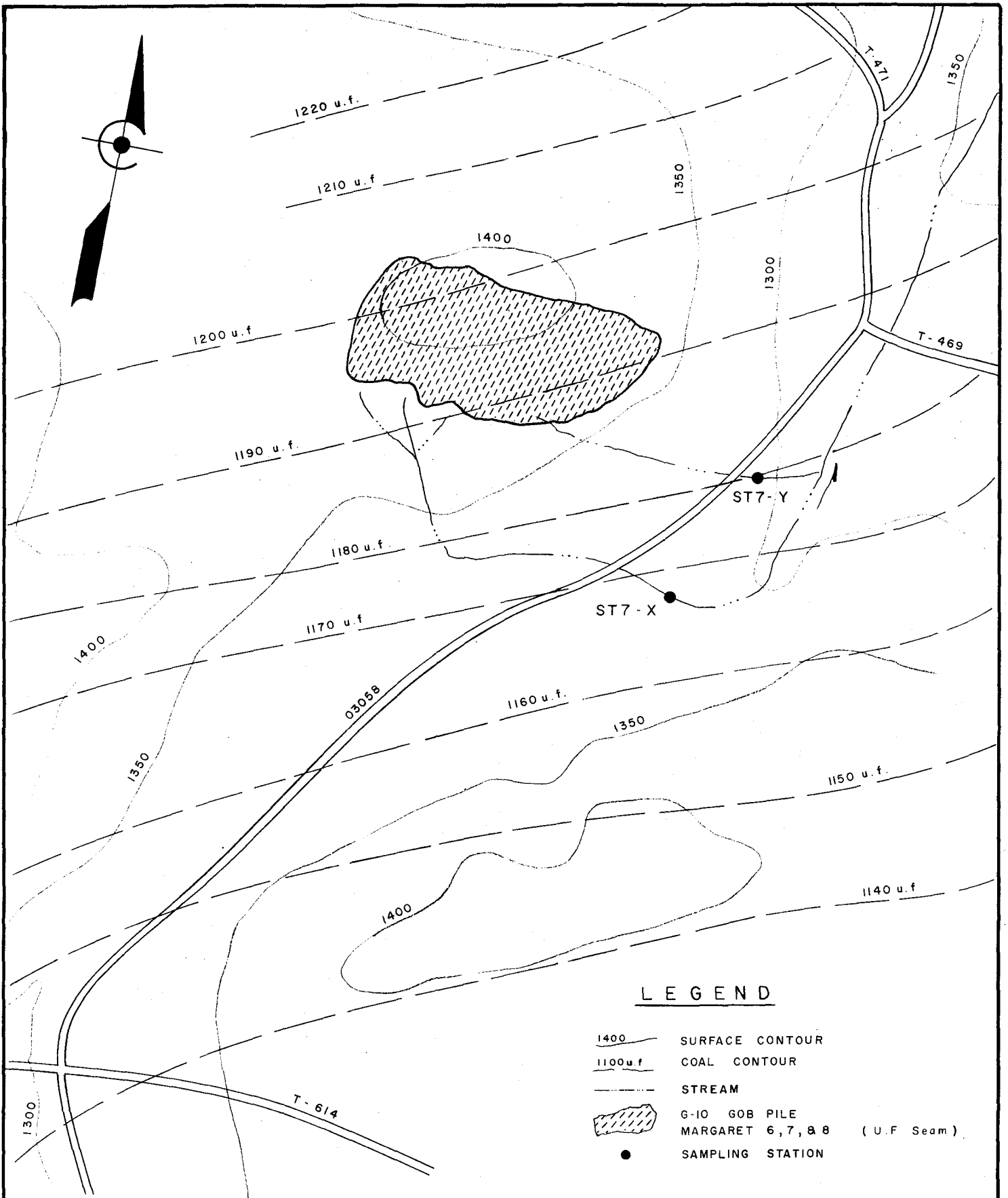
Anticipated % Abatement Alternate 2: 60%

WATER SAMPLING DATA


COWANSHANNOCK CREEK WATERSHED

SL-159

Sta	ST7X	GPM	pH	ppm ACD	ppd ACD	ppm ALK	ppd ALK	ppm T.Fe	ppd T.Fe	ppm SO <sub>4</sub>	ppd SO <sub>4</sub>
Max.		21	2.1	4400	300			1800	48	17000	525
Avg.		11	2.6	2150	145			617	27	5019	214
Sta	ST7Y										
Max.		17	2.2	7800	1140			1100	33	30000	1440
Avg.		6.4	2.4	4738	368			619	21	18050	1002



**LEGEND**

- 1400 — SURFACE CONTOUR
- 1100 u.f. — COAL CONTOUR
- — STREAM
-  G-10 GOB PILE  
MARGARET 6, 7, & 8 (U.F. Seam)
- SAMPLING STATION

<b>COWANSHANNOCK CREEK WATERSHED</b>		
SCALE: 1" = 400'	PREPARED FOR: PROJECT SL-159 COMMONWEALTH OF PENNSYLVANIA DEPT. OF ENVIRONMENTAL RESOURCES	PREPARED BY: R.F.C.
DATE: 9-29-72		DRAWN BY: S.H.V.
<b>PROPOSED ACTION AREA # 7</b>		
SUBMITTED BY: CARSON ENGINEERS		DWG. NO. PLATE 11

Project Area: 4

Priority: Fifth

Location: Powell Coal Company, Decker No. 2 (D13) and

4(D3) Mines

Size: Decker No. 2 (D13) - 296 Acres

Decker No. 4 (D3) - 242 Acres

Number of Discharges: 2 Recommended Work:

D13 Decker No. 4 - Locate openings near Station NT2A.

Hydraulic seal for two (2) openings and curtain wall at  
undefined abandoned workings.

D3 Decker No. 2 - Hydraulic seal for six (6) openings.

Cost:	D13 - 2 Seals @ \$16,000/Seal	
	(Includes Nominal Grout Curtain)	\$ 32,000
	Curtain Wall (500 Feet)	= 100,000
	D3 - 6 Seals @ \$15,000/Seal	
	(Includes Nominal Grout Curtain)	= <u>90,000</u>
		\$222,000

Note: Special Grout Curtain, If Required, Is Not Included In Cost.

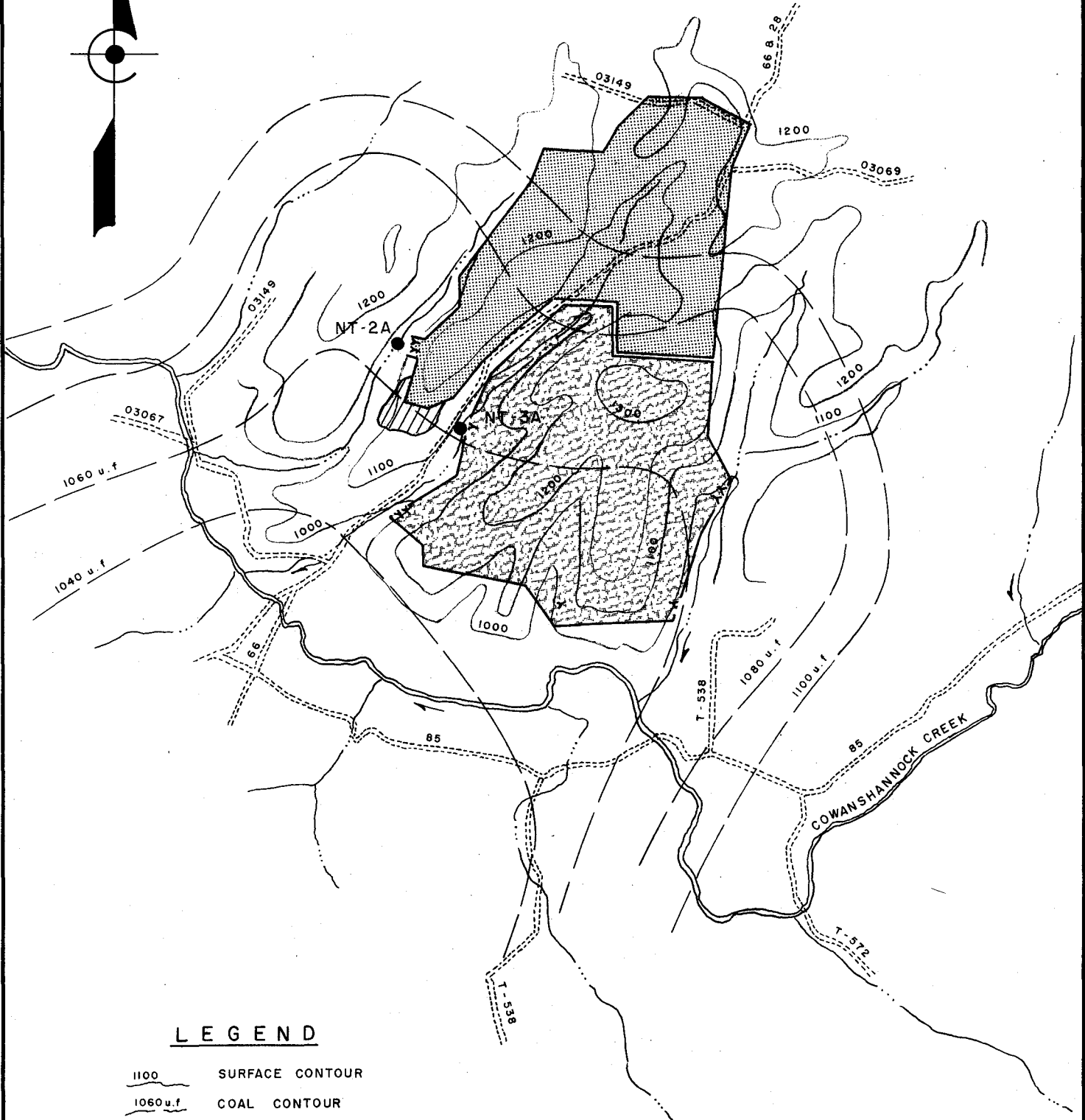
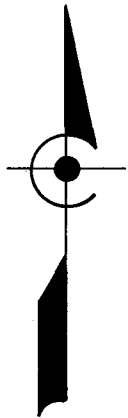
Anticipated % Abatement: 80%

COWANSHANNOCK CREEK WATERSHED

WATER SAMPLING DATA

Sta	GPM	pH	ppm ACD	ppd ACD	ppm ALK	ppd ALK	ppm T.Fe	ppd T.Fe	ppm SO4	ppd SO4
Sta NT3A										
Max.	292	3.2	60	63.2			40	58	1600	3888
Avg.	146	4.9	29	30.2			19.4	28	889	1534
Sta NT2A										
Max.	448	1.9	31200	49920			97.5	1240	56000	89600
Avg.	176	2.4	7970	12867			73.8	407	14778	23309





**LEGEND**

- 1100 SURFACE CONTOUR
- 1060 u.f. COAL CONTOUR
- STREAM
- D-3 DEEP MINE (U.F. Seam) DECKER #4
- D-13 DEEP MINE (U.F. Seam) DECKER #2
- SAMPLING STATION
- UNCHARTED DEEP MINE WORKINGS

<b>COWANSHANNOCK CREEK WATERSHED</b>		
SCALE: 1" = 2000'	PREPARED FOR: PROJECT SL-159 COMMONWEALTH OF PENNSYLVANIA DEPT. OF ENVIRONMENTAL RESOURCES	PREPARED BY: R.F.C.
DATE: 9-28-72		DRAWN BY: S.H.V.
<b>PROPOSED ACTION AREA # 4</b>		
SUBMITTED BY: CARSON ENGINEERS		DWG. NO. PLATE 12

Project Area: 5

Priority: Sixth

Location: Robin Coal Company (S2)

Size: S2 - 122 Acres

Number of Discharges: 4

Recommended work: Work in this area not recommended at this time.

Minimal regrading and contouring to eliminate water ponding and erosion followed by seeding.

Cost: 122 Acres @ \$2,000/Acre = \$244,000

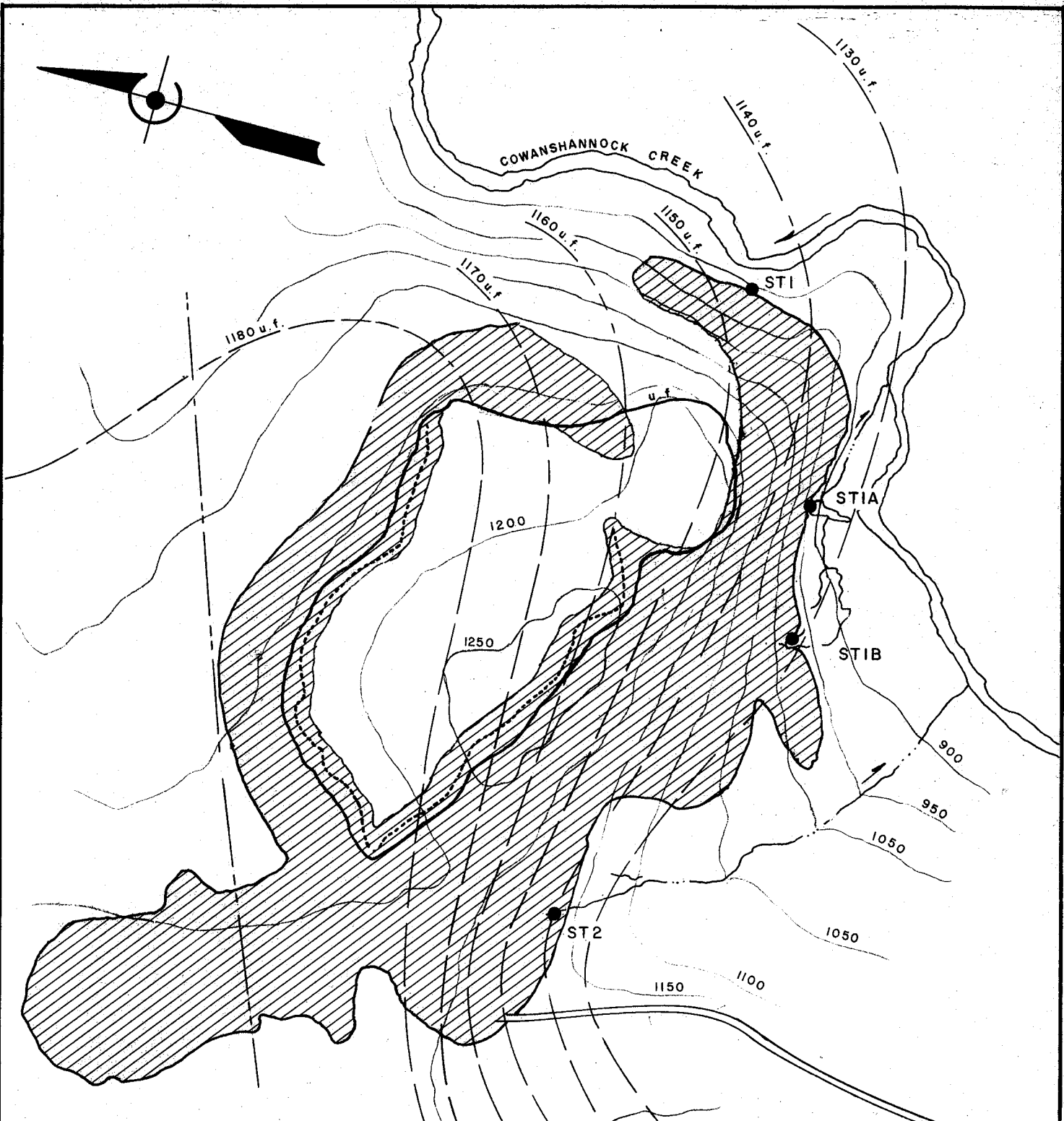
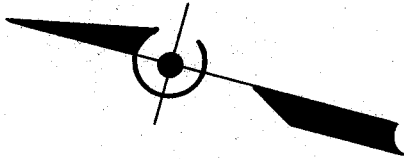
Anticipated % Abatement: 60%

SL-159

COWANSHANNOCK CREEK WATERSHED

WATER SAMPLING DATA

Sta	ST1	GPM	pH	ppm ACD	ppd ACD	ppm ALK	ppd ALK	ppm T.Fe	ppd T.Fe	ppm SO4	ppd SO4
	Max.	8.1	2.7	550	53			210	20	2500	243
	Avg.	4	2.7	550	27			185	10	1625	122
	Sta ST1A										
	Max.	15	3.7	70	13			4	.7	1200	216
	Avg.	7.5	4.1	38	7			3	.4	770	108
	Sta ST1B										
	Max.		3.0	100				105		1200	
	Avg.		3.0	100				105		1200	
	Sta ST2										
	Max.	13	2.8	130	9			32.5	.2	1600	162
	Avg.	6.5	3.1	80	5			16.8	.1	1340	81



**LEGEND**

- 1200 SURFACE CONTOUR } PRIOR TO STRIP MINE OPERATION
- 950 u.f. COAL CONTOUR }
- COAL OUTCROP
- HIGHWALL
- PIPE LINE
- STREAM
- S-2 STRIP MINE  
ROBIN COAL CO., INC.  
(U.F & L.F. Seam)
- SAMPLING STATION

Access Road  
From Strip Mine  
To LR 03067

<b>COWANSHANNOCK CREEK WATERSHED</b>		
SCALE: 1" = 500'	PREPARED FOR: PROJECT SL-159 COMMONWEALTH OF PENNSYLVANIA DEPT. OF ENVIRONMENTAL RESOURCES	PREPARED BY: R.F.C. DRAWN BY: S.H.V.
<b>PROPOSED ACTION AREA # 5</b>		
SUBMITTED BY: <b>CARSON ENGINEERS</b>		DWG. NO. <b>PLATE 13</b>

Project Area: 6

Priority: Seventh

Location: M & E Coal Company (S20)

Size: S20 - 208 Acres

Number of Discharges: 4

Recommended work: Work in this area not recommended at this time.

Minimal regrading and contouring to eliminate water ponding and erosion followed by seeding.

Cost: 130.5 Acres @ \$2,000/Acre = \$261,000

Anticipated % Abatement: 60%

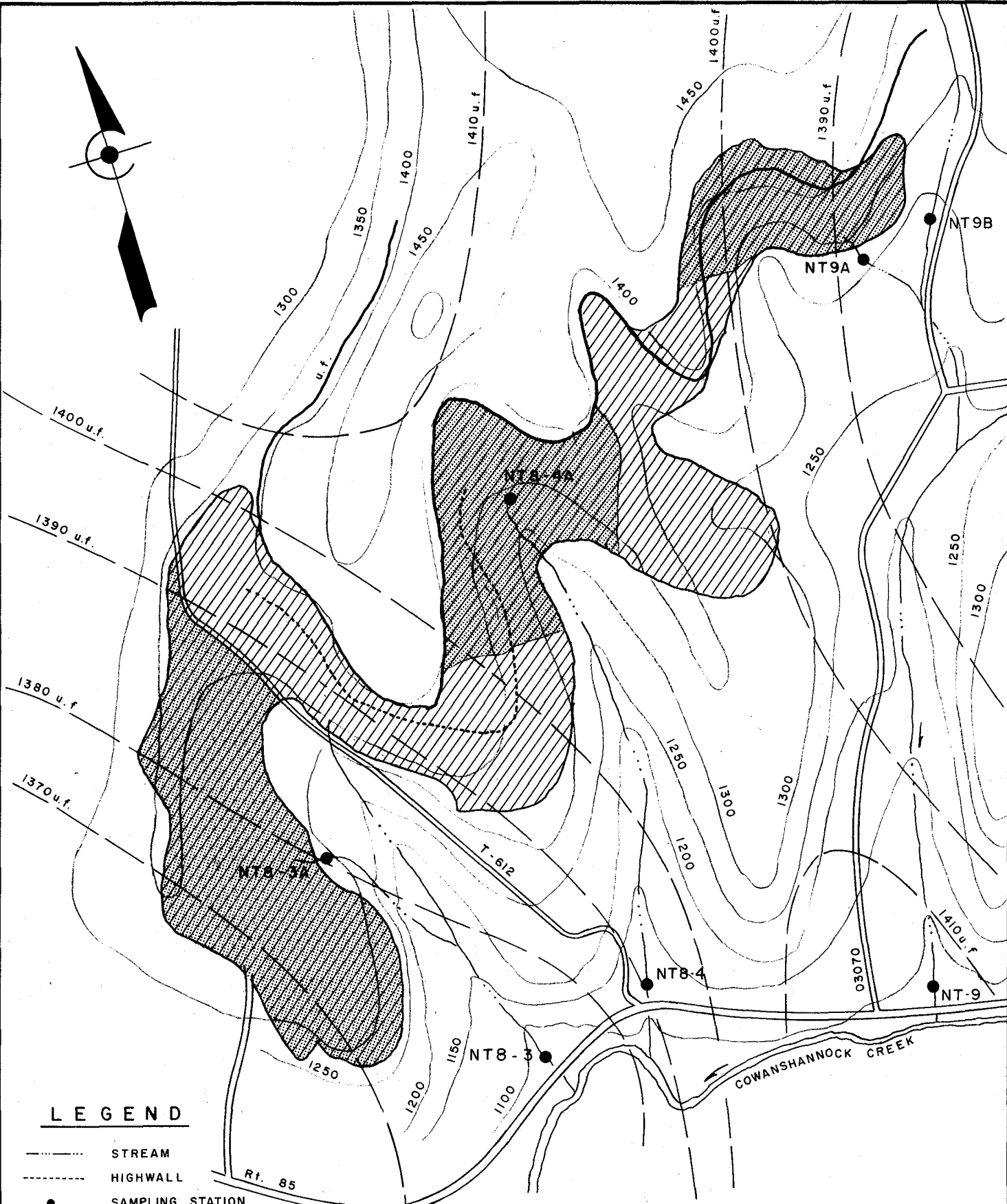
WATER SAMPLING DATA

COWANSHANNOCK CREEK WATERSHED



SL-159

Sta	NT8-3	GPM	pH	ppm ACD	ppd ACD	ppm ALK	ppd ALK	ppm T.Fe	ppd T.Fe	ppm SO4	ppd SO4
Max.	1120		5.7			4	54	1.3	45	250	1620
Avg.	560		5.9			3	27	2.3	23	185	810
Sta	NT8-3A										
Max.	39		5.6			12	1	9.5	4.5	1450	263
Avg.	20		6.2			7	.5	7.5	2.3	1005	132
Sta	NT8-4										
Max.	1362		6.3			30	262	1.5	25	460	1968
Avg.	397		6.6			21	77	.4	5.1	304	718
Sta	NT8-4A										
Max.	8		6.4			60	3.4	17.5	.8	620	29
Avg.	4		6.5			48	1.7	13	.4	465	15
Sta	NT9										
Max.	202		6.6			20	48	.5	.3	105	204
Avg.	127		6.7			19	30	.3	.3	80	135
Sta	NT9A										
Max.	224		6.2			48	43	3.6	4.3	340	284
Avg.	112		6.3			32	22	2.6	2.2	223	142
Sta	NT9B										
Max.	260		5.6			18	56	1.9	5.9	310	265
Avg.	130		6.2			12	28	1.1	3	198	138

1501



**LEGEND**

- STREAM
- HIGHWALL
- SAMPLING STATION
- 1400 SURFACE CONTOUR } (PRIOR TO STRIP MINE OPERATION)
- 1370 u.f. COAL CONTOUR }
- COAL OUTCROP
-  APPROXIMATE STRIP MINE AREA TO BE RECLAIMED
-  S-20 STRIP MINE (U.F. & L.F. Seam) M & E COAL CO.

<b>COWANSHANNOCK CREEK WATERSHED</b>		
SCALE: 1" = 880'	PREPARED FOR: PROJECT SL-159 COMMONWEALTH OF PENNSYLVANIA DEPT. OF ENVIRONMENTAL RESOURCES	PREPARED BY: R.F.C. DRAWN BY: S.H.V.
<b>PROPOSED ACTION AREA # 6</b>		
SUBMITTED BY: <b>CARSON ENGINEERS</b>		DWG. NO. <b>PLATE 14</b>