

APPENDIX D  
EXPLORATORY DRILLING PROGRAM SL 191-0-101.5  
CONSTRUCTION DRAWINGS  
COLUMNAR SECTIONS

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
OFFICE OF RESOURCES MANAGEMENT

DRILLING PROJECT  
DEER & TOBY CREEK WATERSHEDS

CLARION COUNTY PENNSYLVANIA

CONTRACT NO. SL 191-0-101.5

DRAWING INDEX

COVER SHEET	1 of 4
PLAN OF DRILL SITES	2 of 4
PLAN OF DRILL SITES	3 of 4
DETAIL OF DRILL LOCATIONS	4 of 4

Prepared By  
**GWIN, DOBSON & FOREMAN, INC.**  
Consulting Engineers  
Altoona Pennsylvania

**MILTON J. SHAPP**

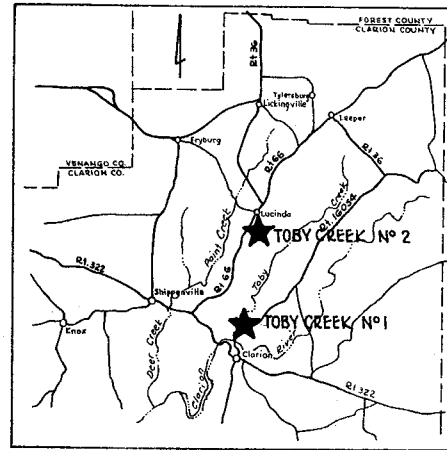
GOVERNOR

**MAURICE K. GODDARD**

SECRETARY OF ENVIRONMENTAL RESOURCES

APPROVED

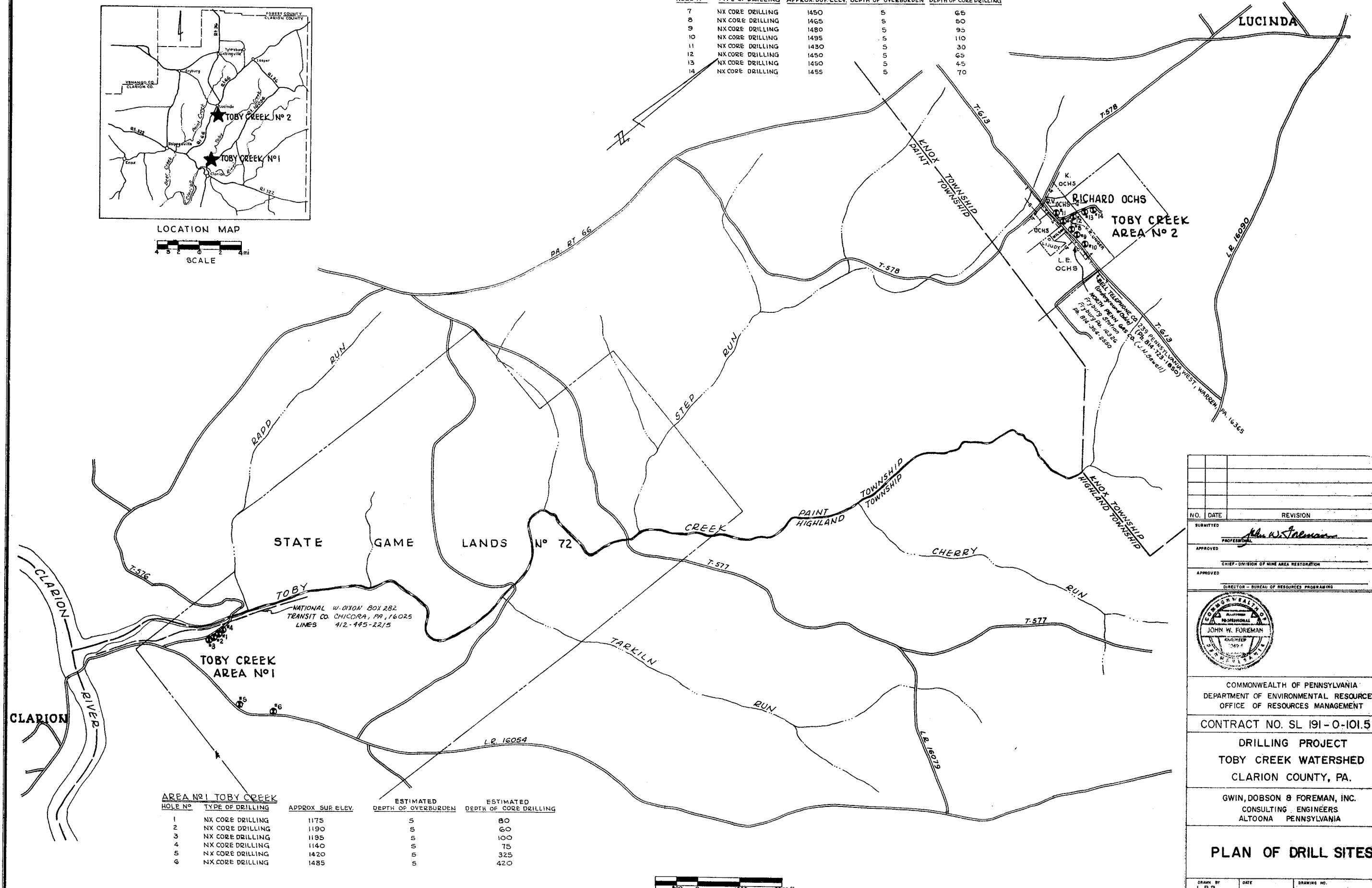
C.H. McCONNELL, DEPUTY SECRETARY DATE  
FOR RESOURCES MANAGEMENT



LOCATION MAP  
SCALE  
4 2 0 2 4 mi

**AREA No 2 TOBY CREEK**

HOLE No	TYPE OF DRILLING	APPROX. SUR. ELEV.	ESTIMATED DEPTH OF OVERBURDEN	ESTIMATED DEPTH OF CORE DRILLING
7	NX CORE DRILLING	1450	5	65
8	NX CORE DRILLING	1465	5	50
9	NX CORE DRILLING	1480	5	95
10	NX CORE DRILLING	1495	5	110
11	NX CORE DRILLING	1430	5	30
12	NX CORE DRILLING	1450	5	65
13	NX CORE DRILLING	1450	5	45
14	NX CORE DRILLING	1455	5	70

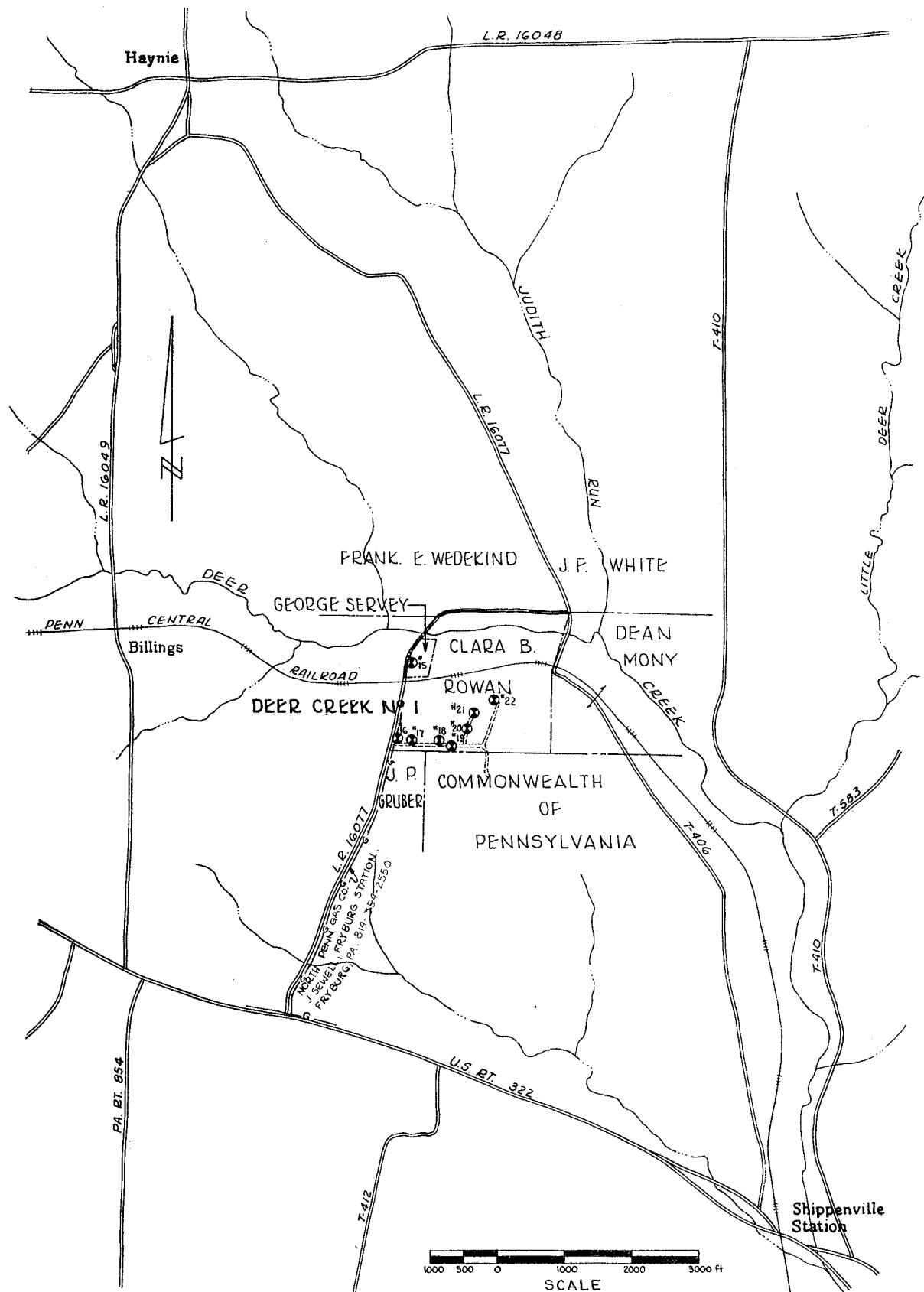


**AREA No 1 TOBY CREEK**

HOLE No	TYPE OF DRILLING	APPROX. SUR. ELEV.	ESTIMATED DEPTH OF OVERBURDEN	ESTIMATED DEPTH OF CORE DRILLING
1	NX CORE DRILLING	1175	5	80
2	NX CORE DRILLING	1190	5	60
3	NX CORE DRILLING	1195	5	100
4	NX CORE DRILLING	1140	5	75
5	NX CORE DRILLING	1420	5	325
6	NX CORE DRILLING	1485	5	420

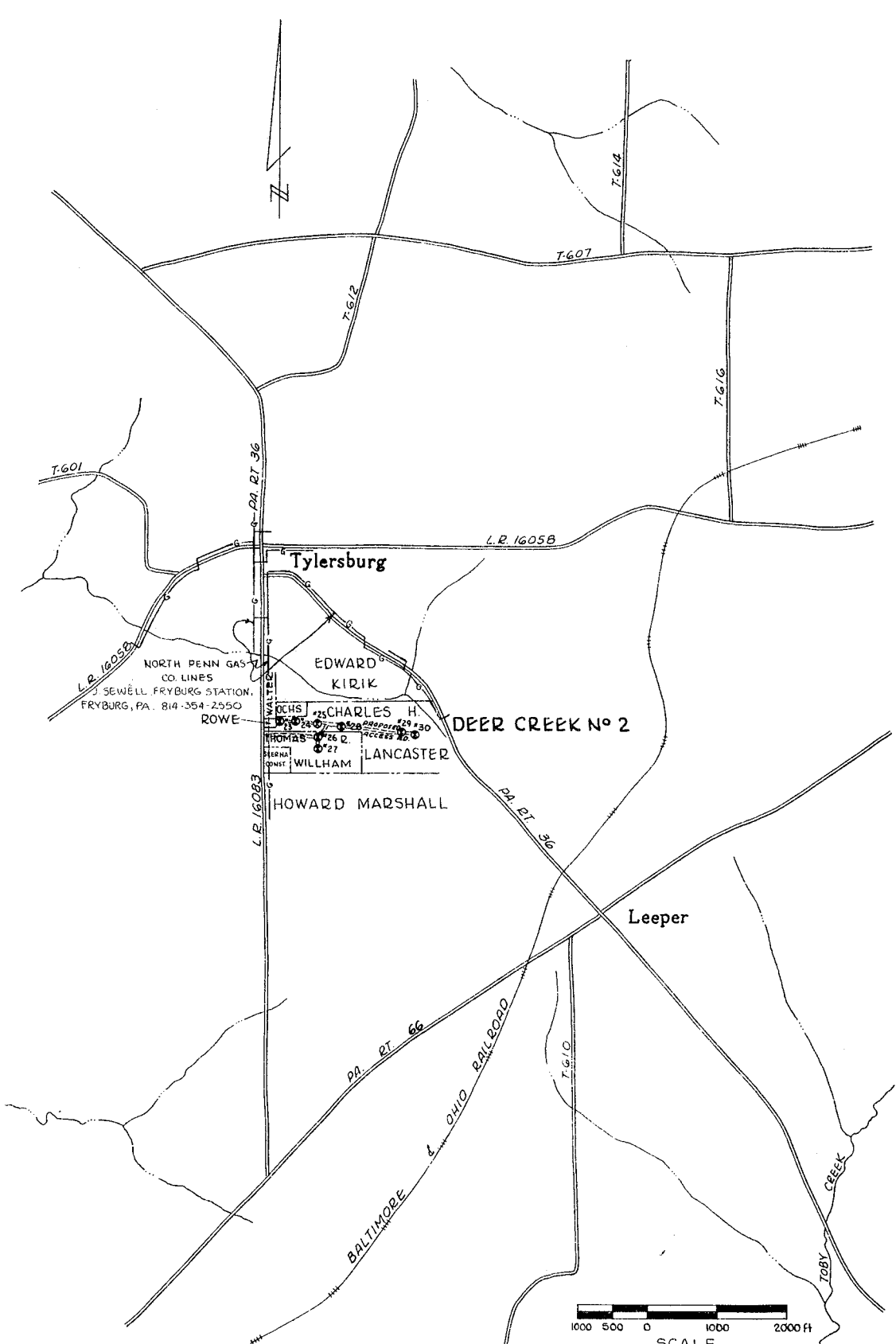
SCALE  
500 0 1000 2000 ft.

NO.	DATE	REVISION	APP.
SUBMITTED			
PROFESSOR <i>John W. Foreman</i>			
APPROVED			
CHIEF - DIVISION OF MINE AREA RESTORATION			
APPROVED			
DIRECTOR - BUREAU OF RESOURCES PROGRAMING			
COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES OFFICE OF RESOURCES MANAGEMENT			
CONTRACT NO. SL 191-0-101.5 <b>DRILLING PROJECT</b> <b>TOBY CREEK WATERSHED</b> <b>CLARION COUNTY, PA.</b>			
GWIN, DOBSON & FOREMAN, INC. CONSULTING ENGINEERS ALTOONA PENNSYLVANIA			
<b>PLAN OF DRILL SITES</b>			
DRAWN BY	DATE	DRAWING NO.	
L.B.B.		2 of 4	
CHECKED BY	SCALE		



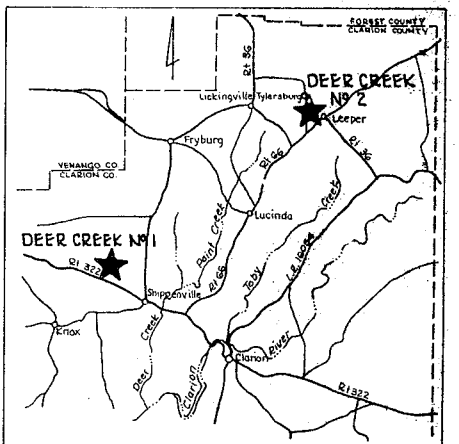
**AREA No. 1 DEER CREEK**

HOLE NO.	TYPE OF DRILLING	APPROX. SUP. ELEV.	ESTIMATED DEPTH OF OVERBURDEN	ESTIMATED DEPTH OF CORE DRILLING
15	NX CORE DRILLING	1360	5	55
16	NX CORE DRILLING	1435	5	75
17	NX CORE DRILLING	1440	5	135
18	NX CORE DRILLING	1450	5	70
19	NX CORE DRILLING	1460	5	155
20	NX CORE DRILLING	1470	5	165
21	NX CORE DRILLING	1450	5	70
22	NX CORE DRILLING	1430	5	95



**AREA No. 2 DEER CREEK**

HOLE NO.	TYPE OF DRILLING	APPROX. SUP. ELEV.	ESTIMATED DEPTH OF OVERBURDEN	ESTIMATED DEPTH OF CORE DRILLING
23	NX CORE DRILLING	1550	5	35
24	NX CORE DRILLING	1550	5	35
25	NX CORE DRILLING	1555	5	35
26	NX CORE DRILLING	1570	5	30
27	NX CORE DRILLING	1590	5	75
28	NX CORE DRILLING	1555	5	40
29	NX CORE DRILLING	1550	5	30
30	NX CORE DRILLING	1555	5	40



NO.	DATE	REVISION	APPR.
SUBMITTED			
APPROVED: <i>John W. Johnson</i>			
PROFESSIONAL			
APPROVED			
CHIEF - DIVISION OF MINE AREA RESTORATION			
APPROVED			
DIRECTOR - BUREAU OF RESOURCES PROGRAMING			

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
OFFICE OF RESOURCES MANAGEMENT

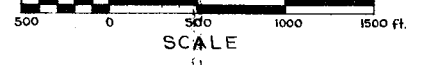
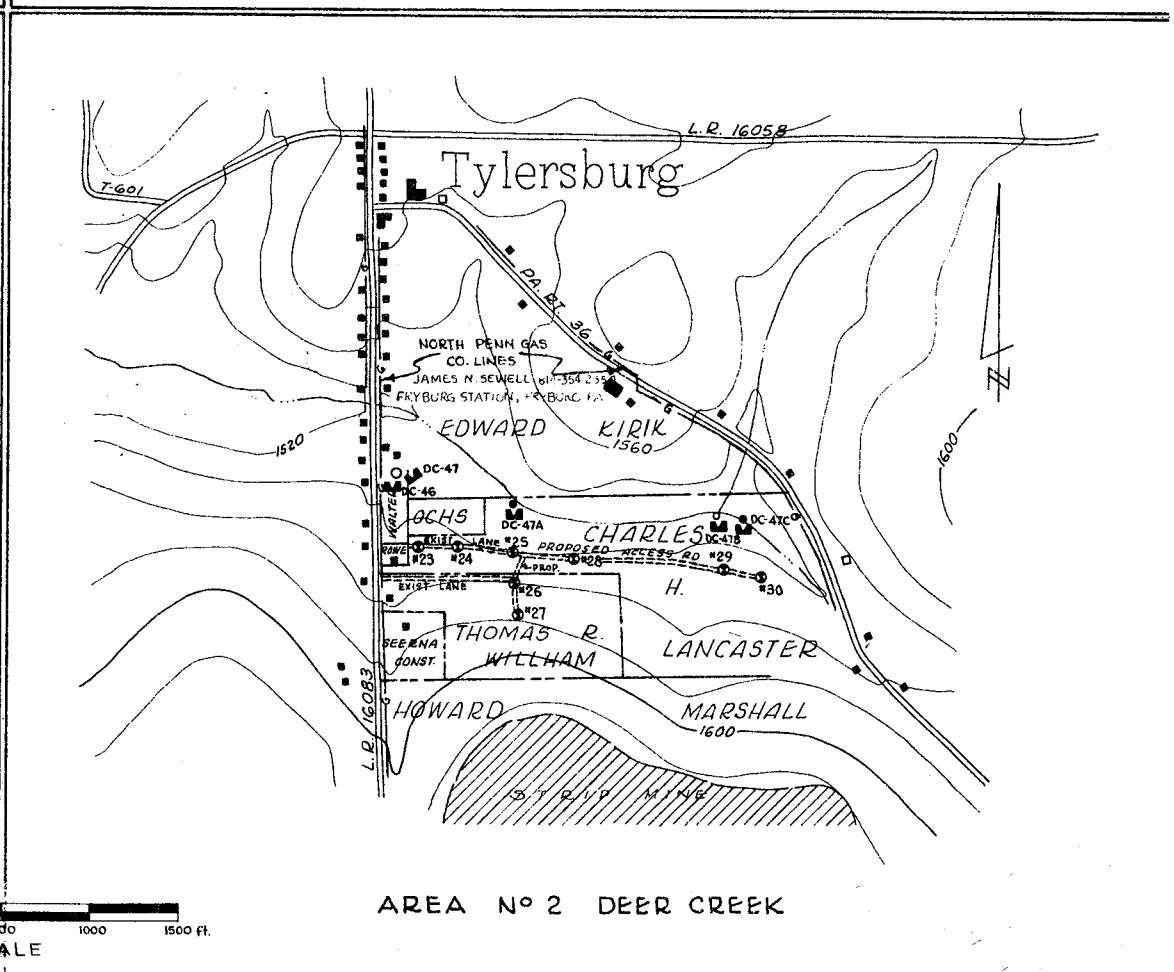
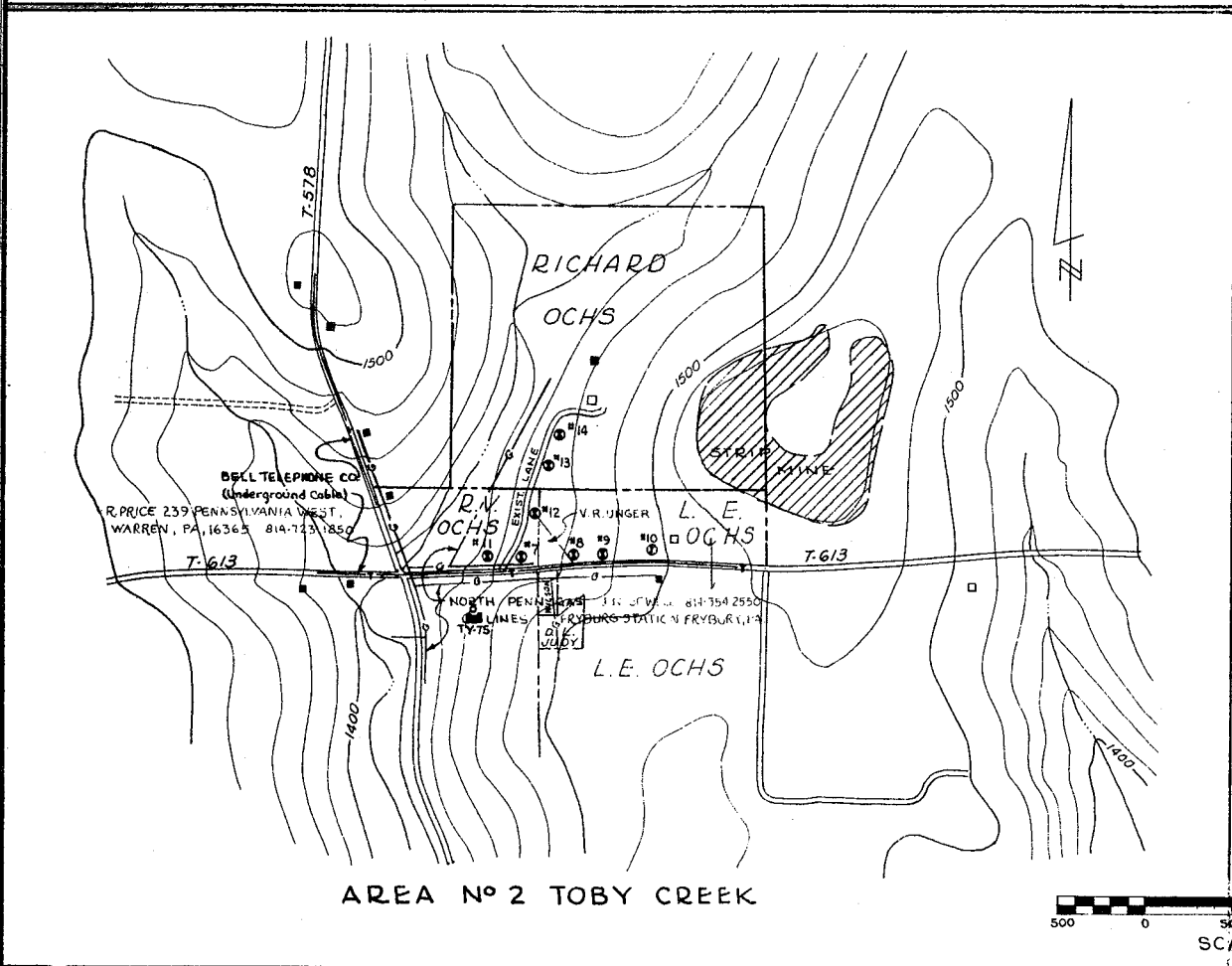
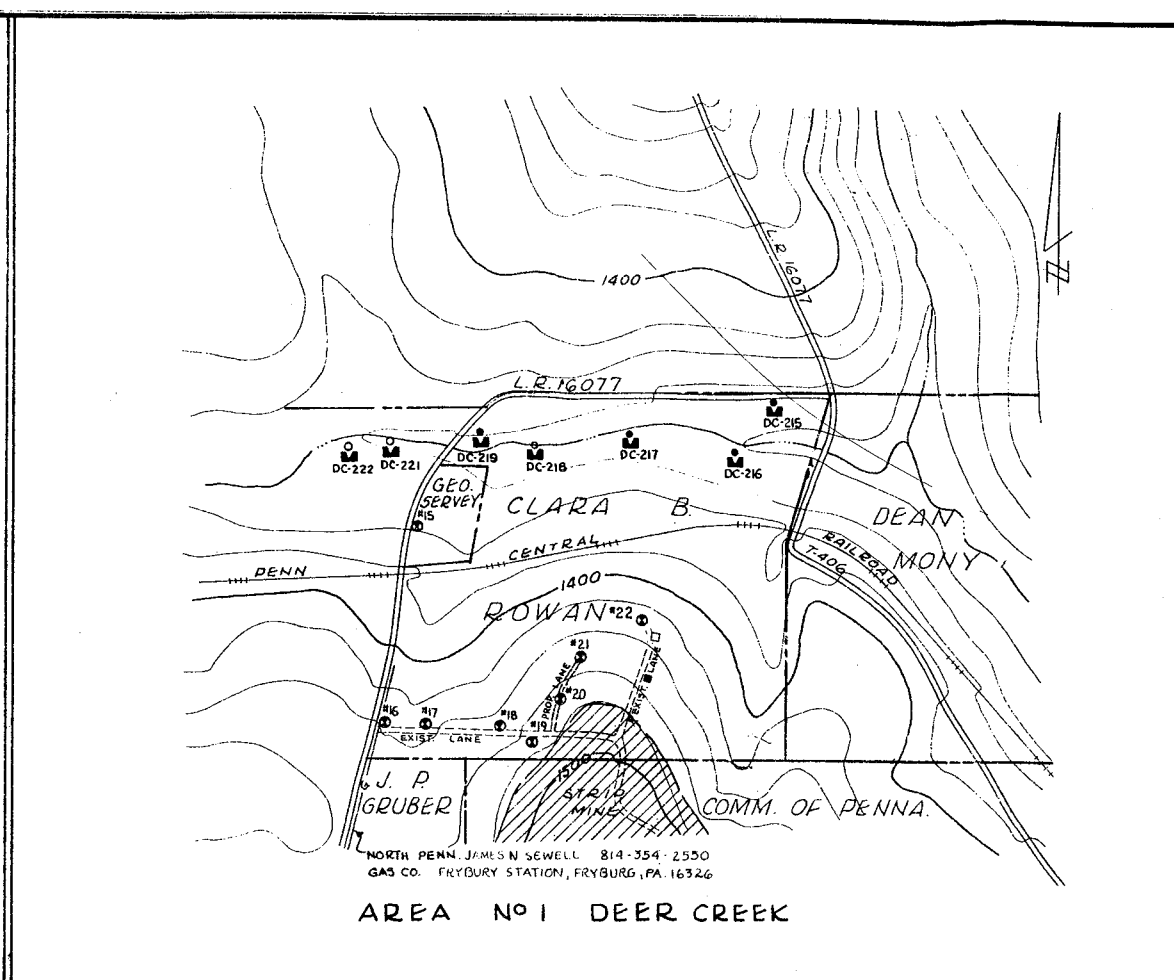
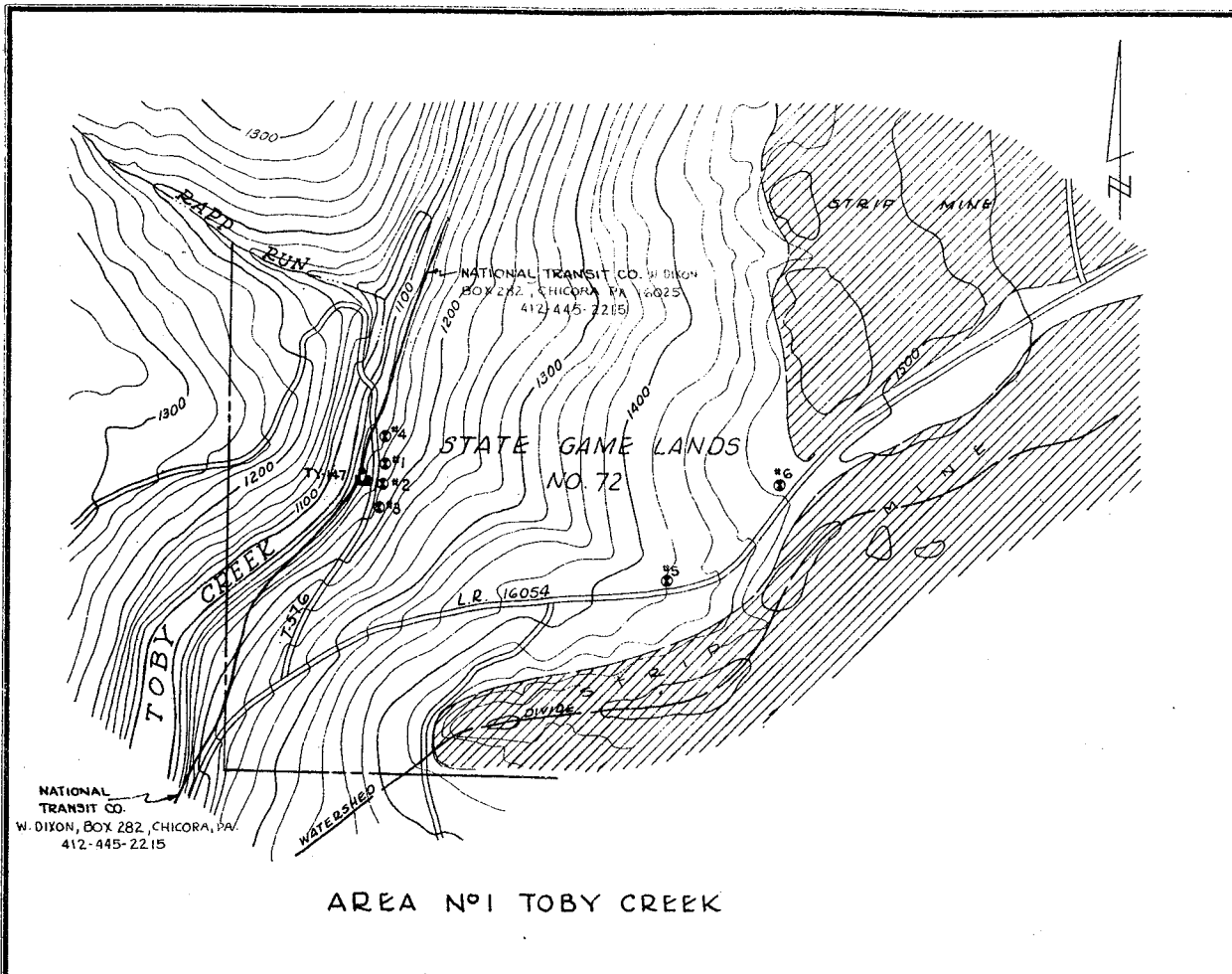
CONTRACT NO. SL 191-0-101.5

DRILLING PROJECT  
DEER CREEK WATERSHED  
CLARION COUNTY, PA.

GWIN, DOBSON & FOREMAN, INC.  
CONSULTING ENGINEERS  
ALTOONA, PENNSYLVANIA

**PLAN OF DRILL SITES**

DRAWN BY L.B.P.	DATE	DRAWING NO.
CHECKED BY	SCALE	



**UTILITIES LIST**

**AREA 1 TOBY CREEK**  
 NATIONAL TRANSIT CO.  
 W. DIXON  
 BOX 282  
 CHICORA, PA. 16025  
 Ph 412-445-2215

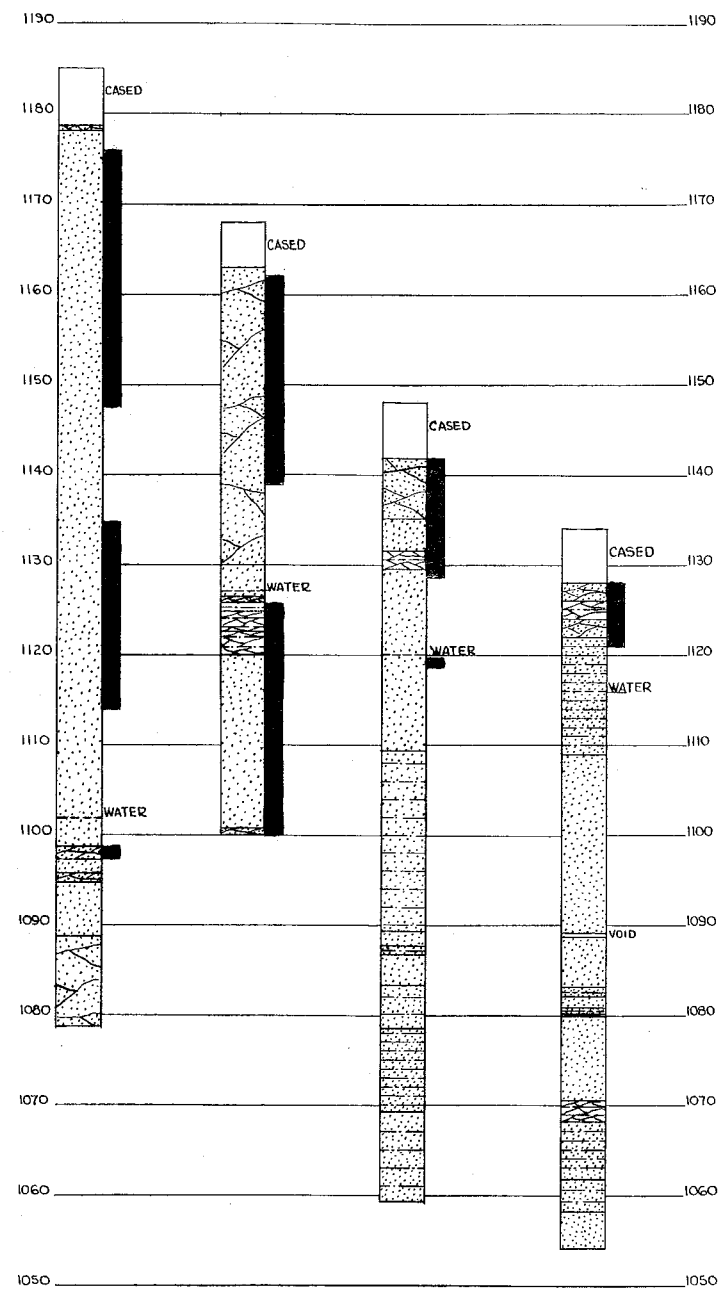
**AREA 2 TOBY CREEK**  
 BELL TELEPHONE CO.  
 R. PRICE  
 239 PENNSYLVANIA WEST  
 WARREN, PA. 16365  
 Ph 814-723-1850

**NORTH PENN GAS CO.**  
 J. N. SEWELL  
 FRYBURG STATION  
 FRYBURG, PA. 16326  
 Ph 814-354-2550

**AREA 1 DEER CREEK**  
 NORTH PENN GAS CO.  
 J. N. SEWELL  
 FRYBURG STATION  
 FRYBURG, PA. 16326  
 Ph 814-354-2550

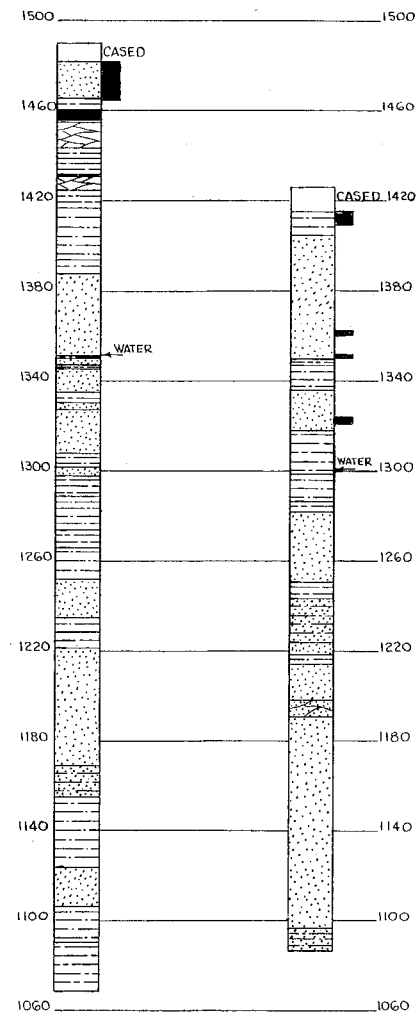
**AREA 2 DEER CREEK**  
 NORTH PENN GAS CO.  
 J. N. SEWELL  
 FRYBURG STATION  
 FRYBURG, PA. 16326  
 Ph 814-354-2550

NO.	DATE	REVISION	APPR.
SUBMITTED			
APPROVED: <i>Alan W. Freeman</i>			
CHIEF - DIVISION OF MINE AREA RESTORATION			
APPROVED			
DIRECTOR - BUREAU OF RESOURCES PROGRAMS			
COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES OFFICE OF RESOURCES MANAGEMENT			
CONTRACT NO. SL 191-0-1015 DRILLING PROJECT TOBY & DEER CREEK WATERSHEDS CLARION COUNTY, PA.			
GWIN, DOBSON & FOREMAN, INC. CONSULTING ENGINEERS ALTOONA, PENNSYLVANIA			
<b>DETAIL OF DRILL LOCATIONS</b>			
DRAWN BY	DATE	DRAWING NO.	
L.B.B.			
CHECKED BY	SCALE		
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			<b>4 of 4</b>

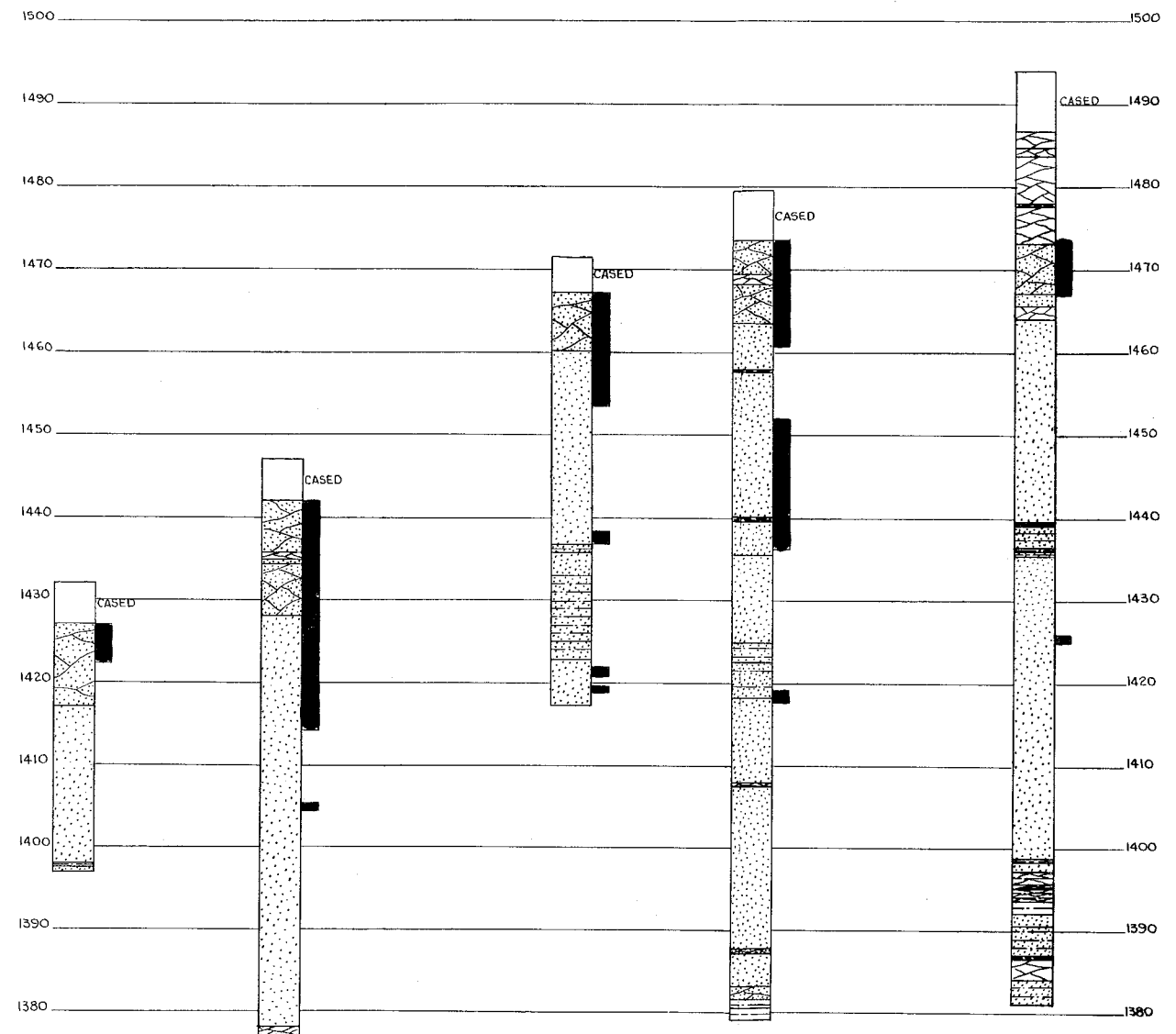
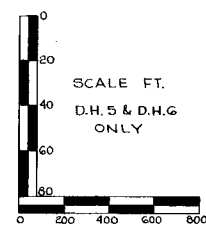


D.H.3      D.H.2      D.H.1      D.H.4

AREA NO 1 TOBY CREEK

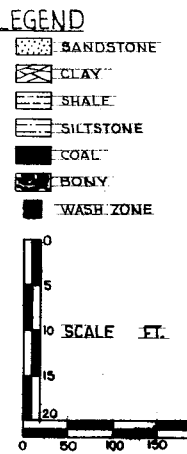


D.H.6      D.H.5



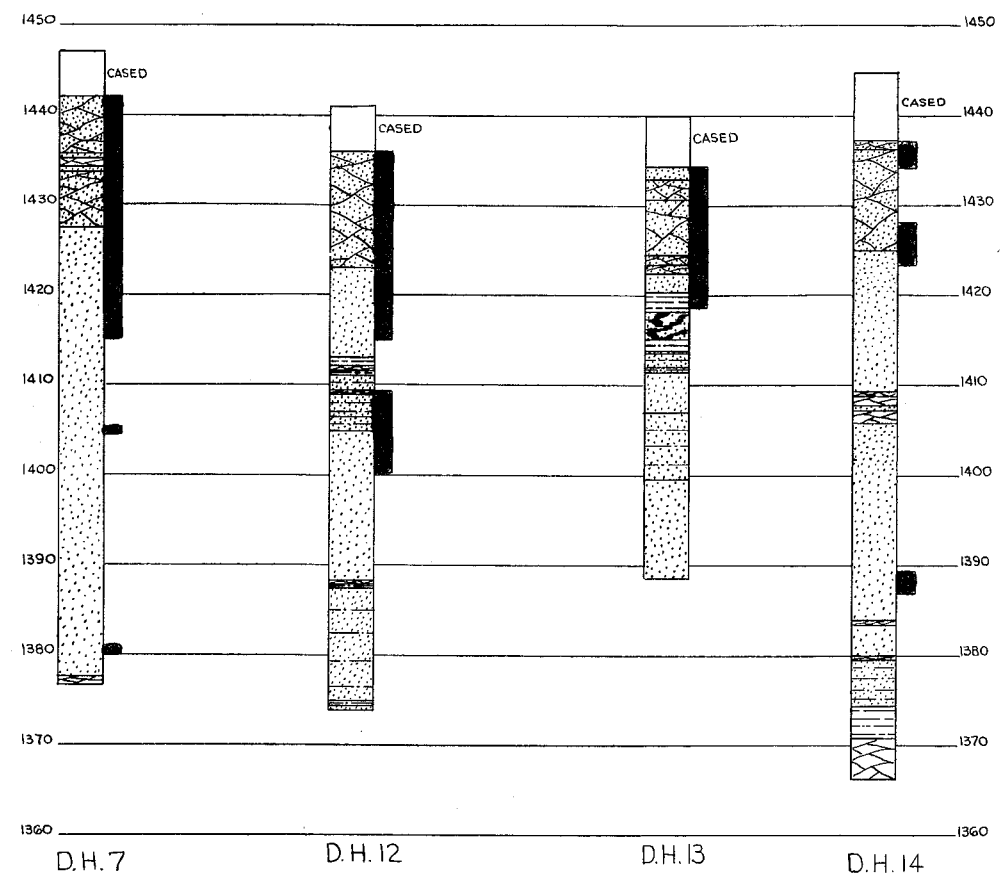
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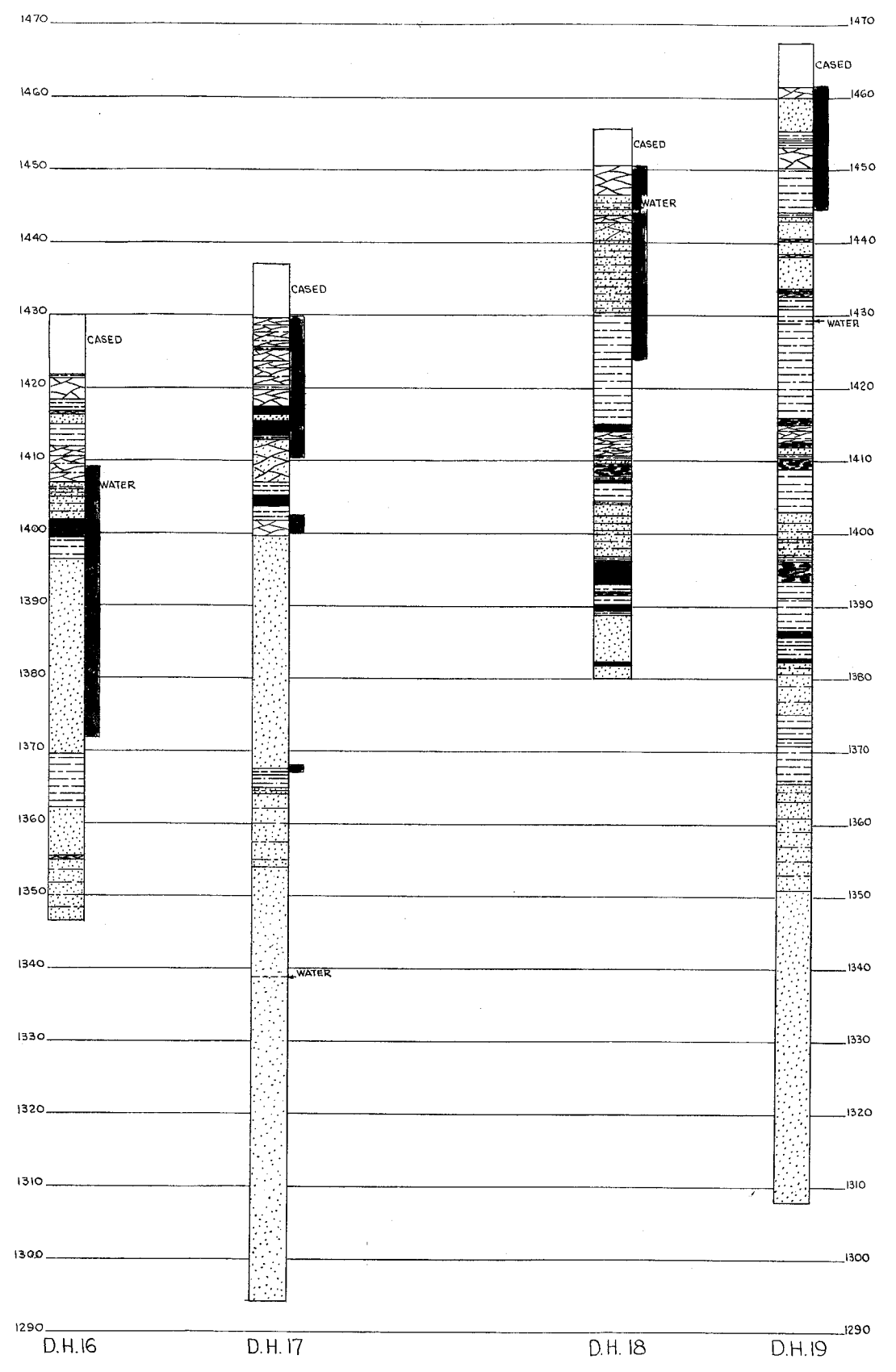


COMMONWEALTH OF PENNSYLVANIA  
 DEPARTMENT OF ENVIRONMENTAL RESOURCES  
 OFFICE OF RESOURCES MANAGEMENT  
 CONTRACT NO SL 191-0-101.5  
 DRILLING PROJECT  
 TOBY & DEER CREEK WATERSHED  
 CLARION COUNTY, PA.  
 DRILL LOGS

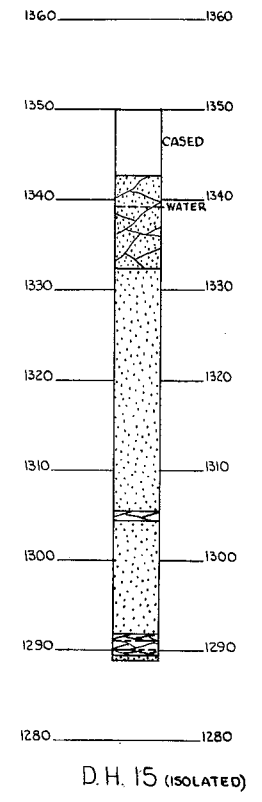
SCALE AS SHOWN	<b>GWIN, DOBSON &amp; FOREMAN, INC.</b> CONSULTING ENGINEERS ALTOONA - PENNSYLVANIA	SHEET NO. 1 of 4
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AREA NO 2 TOBY CREEK



AREA NO 1 DEER CREEK



D.H. 15 (ISOLATED)

**LEGEND**

- SANDSTONE
- CLAY
- SHALE
- SILTSTONE
- COAL
- BONY
- WASH ZONE

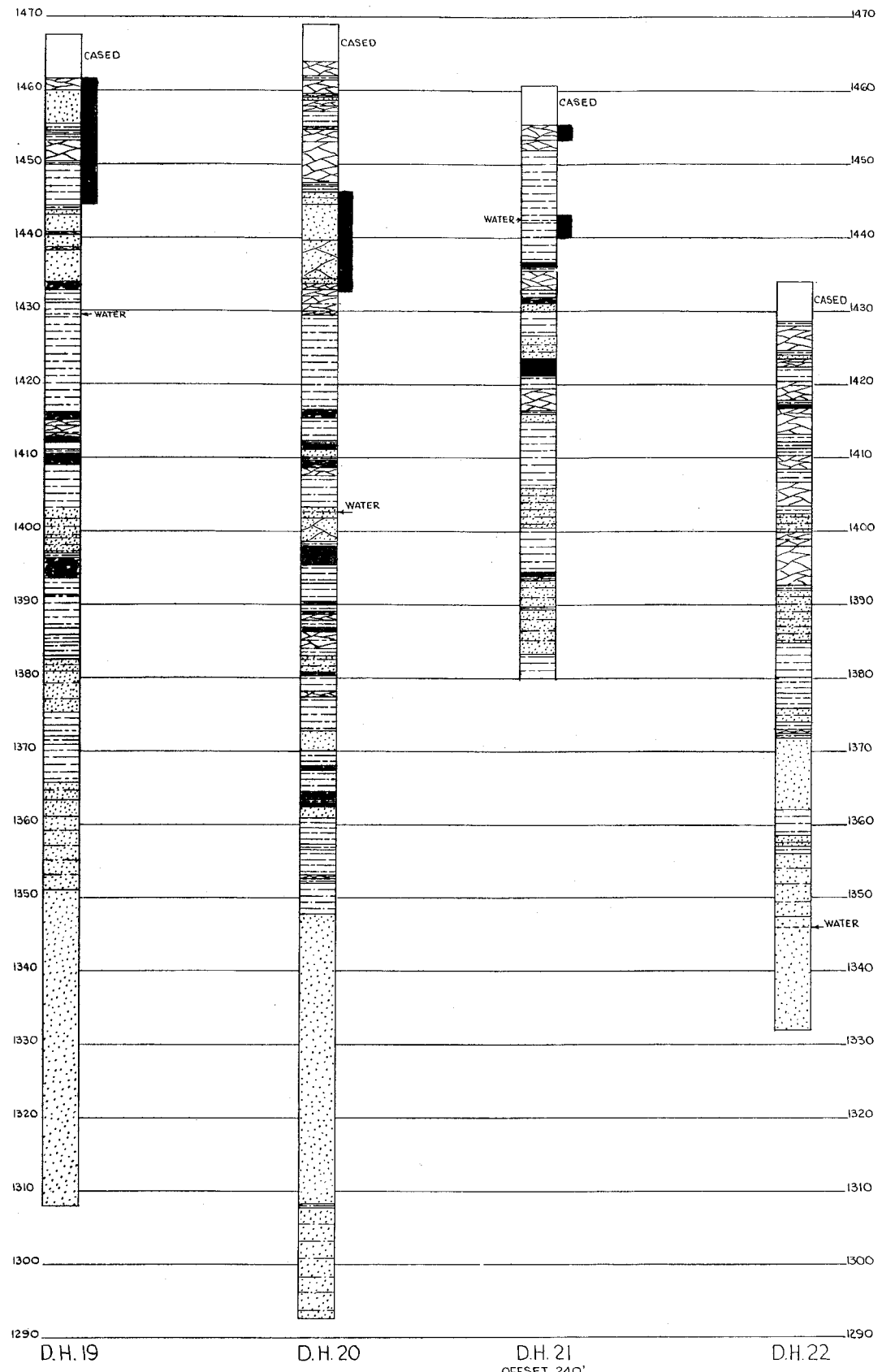
**SCALE FT.**

COMMONWEALTH OF PENNSYLVANIA  
 DEPARTMENT OF ENVIRONMENTAL RESOURCES  
 OFFICE OF RESOURCES MANAGEMENT  
 CONTRACT NO. SL 191-0-101.5  
 DRILLING PROJECT  
 TOBY & DEER CREEK WATERSHED  
 CLARION COUNTY, PA.  
 DRILL LOGS

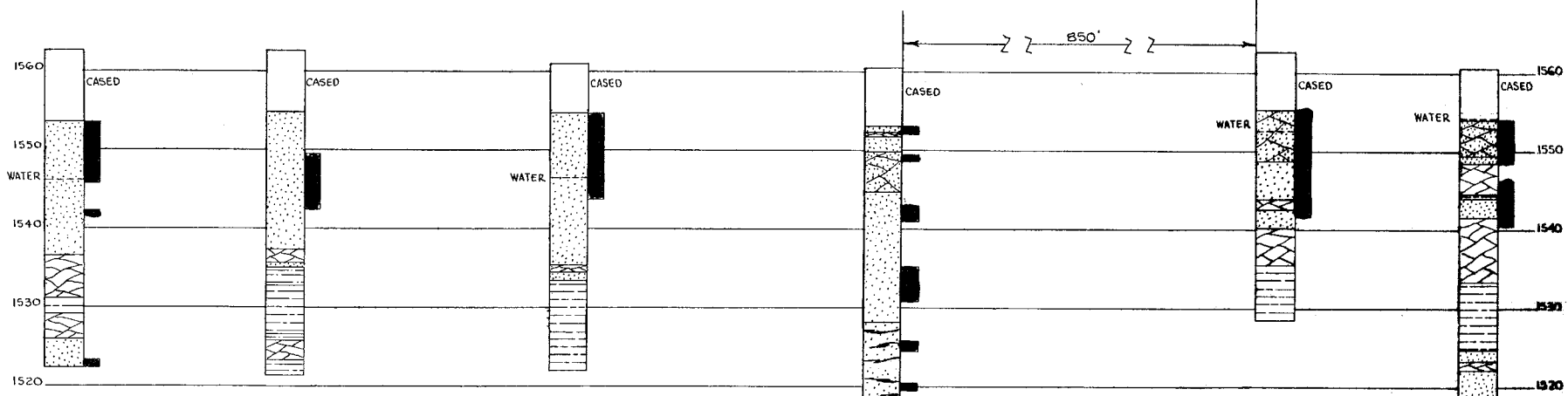
SCALE AS SHOWN	<b>GWIN, DOBSON &amp; FOREMAN, INC.</b> CONSULTING ENGINEERS ALTOONA, PENNSYLVANIA	SHEET NO. 2 of 4
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SOUTH WASHINGTON A. & S. SMITH CO., PHA., PA.

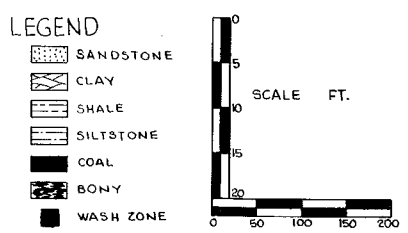
PR 9042-174



AREA NO 1 DEER CREEK



AREA NO 2 DEER CREEK



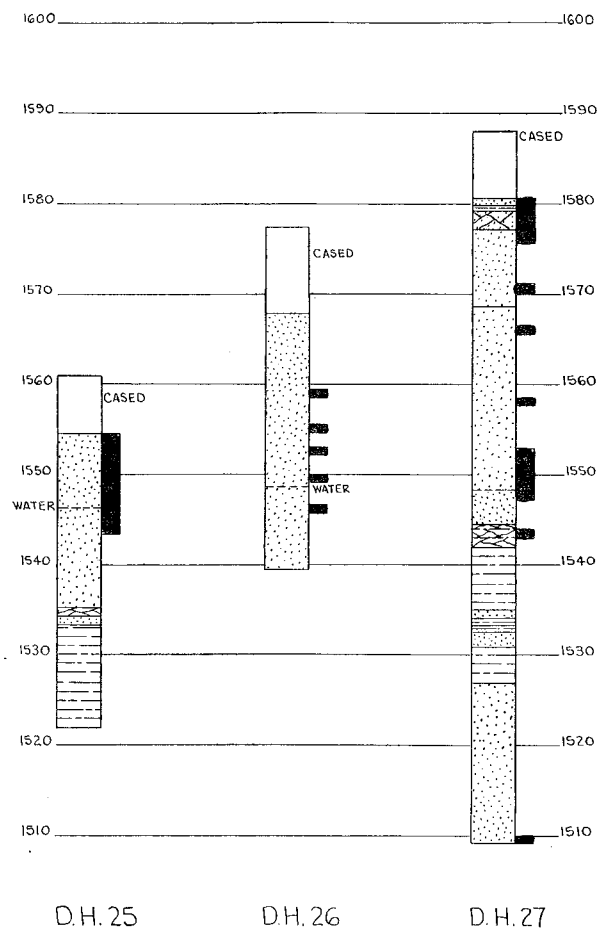
COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
OFFICE OF RESOURCES MANAGEMENT  
CONTRACT NO SL 191-O-101.6  
DRILLING PROJECT  
TOBY & DEER CREEK WATERSHED  
CLARION COUNTY, PA.  
DRILL LOGS

SCALE AS SHOWN	<b>GWIN, DOBSON &amp; FOREMAN, INC.</b> CONSULTING ENGINEERS ALTOONA - PENNSYLVANIA	SHEET NO. 3 of 4
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SENTRIM MAPPING & DESIGN CO., P.O. BOX 100, ALTOONA, PA.

PA 8078-978

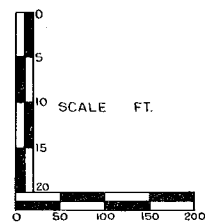




AREA NO 2 DEER CREEK

LEGEND


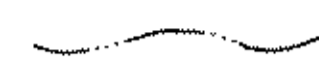
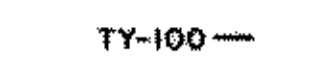


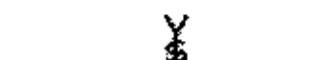




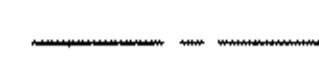
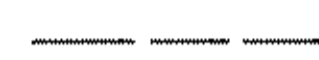
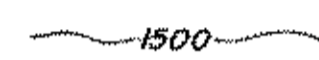

- SANDSTONE
- CLAY
- SHALE
- SILTSTONE
- COAL
- BONY
- WASH ZONE

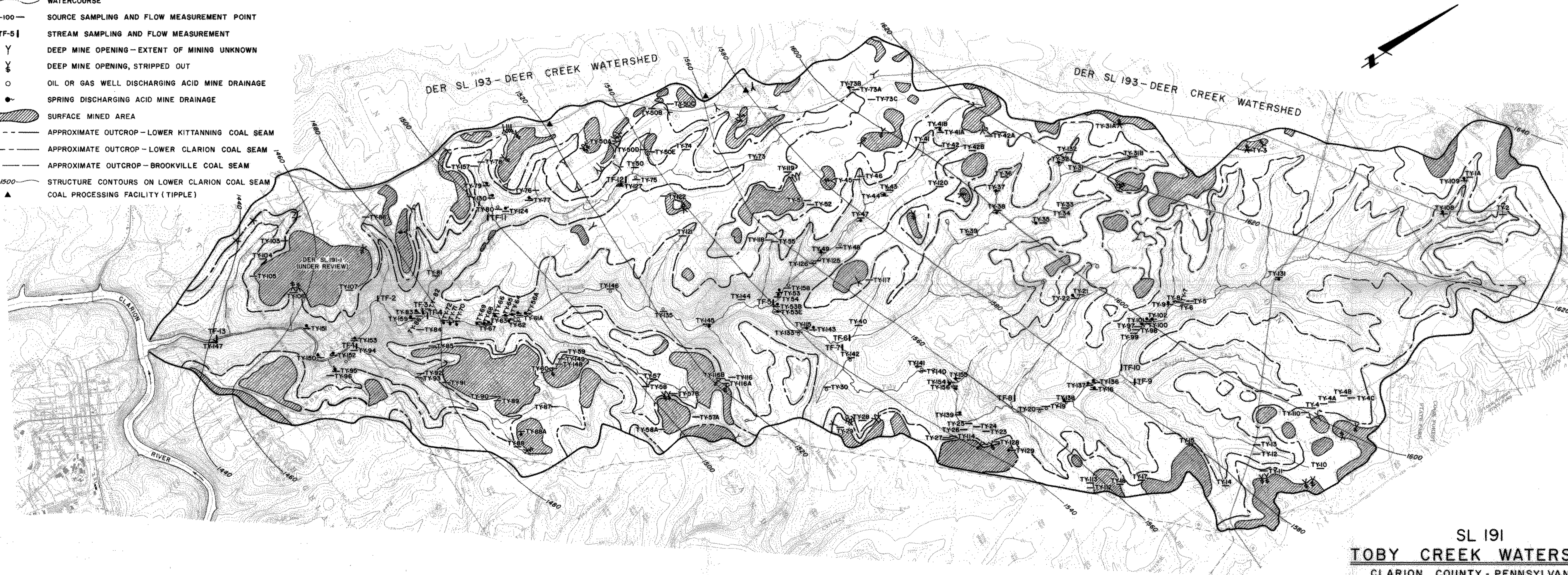


COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES OFFICE OF RESOURCES MANAGEMENT CONTRACT NO SL 191-0-101.5 DRILLING PROJECT TOBY & DEER CREEK WATERSHED CLARION COUNTY, PA. DRILL LOGS		
SCALE AS SHOWN	<b>GWIN, DOBSON &amp; FOREMAN, INC.</b> CONSULTING ENGINEERS ALTOONA · PENNSYLVANIA	SHEET NO. 4 of 4



# LEGEND

-  WATERSHED BOUNDARY
-  WATERCOURSE
-  SOURCE SAMPLING AND FLOW MEASUREMENT POINT
-  STREAM SAMPLING AND FLOW MEASUREMENT
-  DEEP MINE OPENING—EXTENT OF MINING UNKNOWN
-  DEEP MINE OPENING, STRIPPED OUT
-  OIL OR GAS WELL DISCHARGING ACID MINE DRAINAGE
-  SPRING DISCHARGING ACID MINE DRAINAGE
-  SURFACE MINED AREA
-  APPROXIMATE OUTCROP—LOWER KITTANNING COAL SEAM
-  APPROXIMATE OUTCROP—LOWER CLARION COAL SEAM
-  APPROXIMATE OUTCROP—BROOKVILLE COAL SEAM
-  STRUCTURE CONTOURS ON LOWER CLARION COAL SEAM
-  COAL PROCESSING FACILITY (TIPPLE)



SL 191  
**TOBY CREEK WATERSHED**  
 CLARION COUNTY - PENNSYLVANIA

