

Well: Skeet Rock Dam Site, hole 2

Farm:

Driller: Adams and Henry (U. S. Corps of Engr. , contractor)

Location: Haysi quadrangle - approximate UTM, 378650 m. E and
4119870 m. N; about 2.5 miles southeast of Skeetrock and
4.5 miles northeast of Haysi; also just east of the mouth of
Lower Twin Branch along the Pound River

Elevation: 1281.60 feet

Total depth: 82.00 feet

Started drilling: 12/10/38

Completed drilling: 12/19/38

Sample description by: R. S. Good, Virginia Division of Mineral Resources,
2/28/67

References: U. S. Engineers Office, Huntington, W. Va. , Report of Core
Boring, 12/19/38, and map of proposed Skeetrock dam site, preliminary
site survey.

GEOLOGIC SUMMARY

| Depth (feet) | Thickness (feet) | Formation (and remarks) |
|-----------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0-20.5 | 20.5 | Overburden |
| 20.5-24.6 | 4.1 | No core |
| 24.6-82.0 | 57.4 | Norton Formation: composed of sandstones and siltstones that contain some carbonaceous laminae and partings. A mud- stone occurs between 32.1' and 36.7'. |

GEOLOGIC LOG

County: Dickenson
VDMR Well No. 1822

| Depth (feet) | Thickness (feet) | Description |
|-----------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0-20.5 | 20.5 | Overburden |
| 20.5-24.6 | 4.1 | No core |
| 24.6-31.1 | 6.5 | Siltstone: dark gray, fissile, with disseminated fine-grained pyrite (up to 2 percent) |
| 31.1-32.1 | 1.0 | Siltstone: black, pyrite (up to 2 percent) with traces of white, powdery jarosite |
| 32.1-32.5 | 0.4 | Mudstone: dark gray, with some minor fissility |
| 32.5-36.7 | 4.2 | Mudstone: gray, with some minor fissility |
| 36.7-41.6 | 4.9 | Sandstone: gray, fine grained, massive, micaceous, subgraywacke grading into harder more quartzitic subgraywacke, subangular quartz (70-80 percent), feldspar, illite, and chlorite |
| 41.6-48.9 | 7.3 | Sandstone: gray, slightly micaceous, with dark gray to black, sinuous, silty and carbonaceous laminae, some of which are crossbedded; coal detritus occurs as thin (< 1mm) discontinuous, subparallel partings conformable to the bedding |
| 48.9-54.3 | 5.4 | Siltstone: dark gray to black, thinly laminated, with fractures; carbonaceous slickensides along a larger fracture surface |
| 54.3-57.4 | 3.1 | Sandstone: light gray, massive subgraywacke with dark gray, silty, micaceous partings |
| 57.4-65.6 | 8.2 | Siltstone: dark gray to black, fissile, micaceous |
| 65.6-66.0 | 0.4 | No core |
| 66.0-67.0 | 1.0 | Siltstone: black, fissile |
| 67.0-76.1 | 9.1 | Sandstone interlayered with siltstone: light gray subgraywacke and dark gray carbonaceous siltstone with irregular undulatory laminae |

County: Dickenson
VDMR Well No. 1822

| Depth (feet) | Thickness (feet) | Description |
|-----------------|---------------------|----------------------------------------------------------------------------------------------|
| 76.1-77.0 | 0.9 | Siltstone: black, fissile, micaceous |
| 77.0-82.0 | 5.0 | Sandstone: light gray subgraywacke with detrital carbonaceous laminae about 1 mm thick |

GEOLOGIC LOG

County: Dickenson
VDMR Well No. 1822

| Depth (feet) | Thickness (feet) | Description |
|-----------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0-20.5 | 20.5 | Overburden |
| 20.5-24.6 | 4.1 | No core |
| 24.6-31.1 | 6.5 | Siltstone: dark-gray, fissile, with disseminated fine-grained pyrite (up to 2 percent) |
| 31.1-32.1 | 1.0 | Siltstone: black, pyrite (up to 2 percent) with traces of white, powdery jarosite |
| 32.1-32.5 | 0.4 | Mudstone: dark-gray, with some minor fissility |
| 32.5-36.7 | 4.2 | Mudstone: gray, with some minor ^{slightly fissile?} fissility |
| 36.7-41.6 | 4.9 | Sandstone: gray, fine-grained, massive, micaceous, subgraywacke grading into harder, more-quartzitic subgraywacke, subangular quartz (70-80 percent), feldspar, illite, and chlorite |
| 41.6-48.9 | 7.3 | Sandstone: gray, slightly micaceous, with dark-gray-to black, sinuous, silty and carbonaceous laminae, some of which are crossbedded; coal detritus occurs as thin (< 1mm), discontinuous, subparallel partings conformable to the bedding. |
| 48.9-54.3 | 5.4 | Siltstone: dark-gray-to black, thinly laminated, with fractures; carbonaceous slickensides along a larger fracture surface. |
| 54.3-57.4 | 3.1 | Sandstone: light-gray, massive subgraywacke with dark-gray, silty, micaceous partings |
| 57.4-65.6 | 8.2 | Siltstone: dark-gray-to black, fissile, micaceous |
| 65.6-66.0 | 0.4 | No core |
| 66.0-67.0 | 1.0 | Siltstone: black, fissile |
| 67.0-76.1 | 9.1 | Sandstone interlayered with siltstone: light-gray subgraywacke and dark-gray carbonaceous siltstone with irregular, undulatory laminae |

GEOLOGIC LOG

County: Dickenson
VDMR Well No. 1822

| Depth (feet) | Thickness (feet) | Description |
|-----------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0-20.5 | 20.5 | Overburden |
| 20.5-24.6 | 4.1 | No core |
| 24.6-31.1 | 6.5 | Siltstone: dark-gray, fissile, with disseminated fine-grained pyrite (up to 2 percent) |
| 31.1-32.1 | 1.0 | Siltstone: black, pyrite (up to 2 percent) with traces of white, powdery jarosite |
| 32.1-32.5 | 0.4 | Mudstone: dark-gray, with some minor fissility |
| 32.5-36.7 | 4.2 | Mudstone: gray, with some minor fissility ^{slightly fissile?} |
| 36.7-41.6 | 4.9 | Sandstone: gray, fine-grained, massive, micaceous, subgraywacke grading into harder, more-quartzitic subgraywacke, subangular quartz (70-80 percent), feldspar, illite, and chlorite |
| 41.6-48.9 | 7.3 | Sandstone: gray, slightly micaceous, with dark-gray-to black, sinuous, silty and carbonaceous laminae, some of which are crossbedded; coal detritus occurs as thin (< 1mm), discontinuous, subparallel partings conformable to the bedding. |
| 48.9-54.3 | 5.4 | Siltstone: dark-gray to black, thinly laminated, with fractures; carbonaceous slickensides along a larger fracture surface. |
| 54.3-57.4 | 3.1 | Sandstone: light-gray, massive subgraywacke with dark-gray, silty, micaceous partings |
| 57.4-65.6 | 8.2 | Siltstone: dark-gray to black, fissile, micaceous |
| 65.6-66.0 | 0.4 | No core |
| 66.0-67.0 | 1.0 | Siltstone: black, fissile |
| 67.0-76.1 | 9.1 | Sandstone interlayered with siltstone: light-gray subgraywacke and dark-gray carbonaceous siltstone with irregular, undulatory laminae |

UNITED STATES ENGINEER OFFICE
HUNTINGTON, W. VA.
OPERATION DIVISION
SURVEYS SECTION

Date 12 - 19 - 38

REPORT OF CORE BORING

Sheet 1 of 4

Project Skeet Rock Dam Site, Pound River, Virginia. UDMR Well No. 1822

Hole No. 2 Dia. 2 1/8" Location Center line Sta. 2+91.40

Date started 7:00 A. M. 12 - 10 - 38 Completed 12:40 P. M. 12 - 19 - 38

Driller Adams and Henry Inspector Hobart G. Warren

Type of drilling equipment used U. S. Government Core Drill.

| | | | | |
|-----------------------|----------------|---------------------------|----------------|---------------|
| From Elev. | <u>1281.60</u> | To Elev. | <u>1266.00</u> | on this page. |
| Elev. of top of Hole | <u>1281.60</u> | Plan depth of Hole | <u>81.60</u> | |
| Elev. of top of rock | <u>1261.10</u> | Total overburden drilled | <u>20.50</u> | |
| Elev. bottom of hole | <u>1199.60</u> | Total rock drilled | <u>61.50</u> | |
| Elev. of ground water | <u>-----</u> | Total rock recovered | <u>56.99</u> | |
| Elev. of water lost | <u>1243.20</u> | Total depth of Hole | <u>82.00</u> | |
| Elev. water regained | <u>-----</u> | Deviation from plan depth | <u>0.40</u> | |
| Number of Core Boxes | <u>4</u> | | | |

DETAIL OF LOG

| Depth | Elev. | Scale | Legend | Material Classification | Drilling Time Min./Ft. | Box No. | Remarks |
|-------|---------|-------|--------|-----------------------------|------------------------|---------|----------------|
| 0.00 | 1281.60 | | | | | | Top of Ground. |
| 3.00 | 1278.60 | | | Yellow sand and silt. | 4:20 | | Sample #1 |
| 9.00 | 1272.60 | | | | | | Change |
| 10.00 | 1271.60 | | | Grey silt and sand. | | | Sample #2 Chg. |
| 12.00 | 1269.60 | | | | | | Sample #3 |
| 15.60 | 1266.00 | | | Grey sand, silt and gravel. | | | Bottom of sht. |

Submitted _____
Engineer

Approved _____
Major, Corps of Engineers,
Chief, Operation Division.

UNITED STATES ENGINEER OFFICE
HUNTINGTON, W. VA.
OPERATION DIVISION
SURVEYS SECTION

Date 12 - 19 - 38

REPORT OF CORE BORING

Sheet 2 of 4

Hole No. 2 From El. 1266.00 To El. 1237.00 on this page.

DETAIL OF LOG

| Depth | Elev. | Scale | Legend | Material Classification | Drilling Time Min./Ft. | Box No. | Remarks |
|-------|---------|-------|-----------|-------------------------------------------------|------------------------|---------|-------------------|
| 15.60 | 1266.00 | | | | | | |
| 16.99 | 1264.61 | | | Sand stone boulder. | | | Boulder. |
| | | | | | 4:20 | | |
| | | | | Grey sand, silt and gravel. | | | |
| 20.50 | 1261.10 | | | Top of rock. | | | Change |
| | | | | | | | Too soft to core. |
| | | | Loss 4.11 | Soft blue shale. | 1:40 | 1 | Loss 4.11' |
| 24.61 | 1256.99 | | | | | | Change |
| | | | | | | | |
| | | | | Hard, dark grey shale. | 2:25 | 1 | |
| 32.51 | 1249.09 | | | | | | Change |
| | | | | | | | |
| | | | | Hard, grey, sandy shale | 1:00 | 1 | |
| 36.67 | 1244.93 | | | | | | Change |
| 38.40 | 1243.20 | | | | | | Water lost. |
| | | | | | | 1 | |
| | 1240.30 | | | Hard, grey sand stone with thin shale partings. | 2:40 | | Bottom box #1 |
| | | | | | | 2 | |
| 44.60 | 1237.00 | | | | | | Bottom of sht. |

Submitted

Approved

Engineer

Major, Corps of Engineers,
Chief, Operation Division.

UNITED STATES ENGINEER OFFICE
HUNTINGTON, W. VA.
OPERATION DIVISION
SURVEYS SECTION

Date 12 - 19 - 38

REPORT OF CORE BORING Sheet 3 of 4

Hole No. 2 From El. 1237.00 To El. 1209.00 on this page.

DETAIL OF LOG

| Depth | Elev. | Scale | Legend | Material Classification | Drilling Time Min./Ft. | Box No. | Remarks |
|-------|---------|-------|-----------|----------------------------------------------------|------------------------|---------|----------------|
| 44.60 | 1237.00 | | | | | | |
| | | | | Hard, grey sand stone with thin shale partings. | 2:40 | 2 | |
| 48.90 | 1232.70 | | | | | | Change |
| | | | | Hard, grey sandy shale. | 1:15 | 2 | |
| 52.63 | 1228.97 | | | | | | Change |
| | | | | Hard, grey shale interlaminated with sand stone. | 0:20 | 2 | |
| 54.31 | 1227.29 | | | | | | Change |
| | | | | Hard, grey sand stone with thin shale partings. | 0:45 | 2 | |
| 57.45 | 1224.15 | | | | | | Change |
| | | | | | | 2 | |
| | 1221.41 | | | | | | Bottom box #2 |
| | | | | Hard, dark grey shale. | 2:25 | 3 | |
| 65.56 | 1216.04 | | | | | | |
| 65.98 | 1215.64 | | Loss 0.40 | | | | Loss 0.40 |
| 67.34 | 1214.26 | | | | | | Change |
| | | | | Hard, grey sand stone with thin shale laminations. | 1:30 | 3 | |
| 72.60 | 1209.00 | | | | | | Bottom of sht. |

Submitted _____ Approved _____
Engineer Major, Corps of Engineers,
Chief, Operation Division.

UNITED STATES ENGINEER OFFICE
 HUNTINGTON, W. VA.
 OPERATION DIVISION
 SURVEYS SECTION

Date 12 - 19 - 38

REPORT OF CORE BORING

Sheet 4 of 4

Hole No. 2 From El. 1209.00 To El. 1199.60 on this page.

DETAIL OF LOG

| Depth | Elev. | Scale | Legend | Material Classification | Drilling Time Min./Ft. | Box No. | Remarks |
|------------------|--------------------|-------|--------|----------------------------------------------------|------------------------|---------|-------------------|
| 72.60 | 1209.00 | | | | | | |
| | | | | Hard, grey sand stone with thin shale laminations. | 1:30 | 3 | |
| 76.11 | 1205.49 | | | | | | Change |
| 76.22 | 1204.61 | | | Hard, grey, sandy shale. | 0:20 | 3 | Change |
| | 1202.50 | | | Hard, grey sand stone with thin shale partings. | 1:30 | 3 | Bottom box #3 |
| | | | | | | 4 | |
| 82.00 | 1199.60 | | | | | | Bottom of hole |

Submitted

Approved

Engineer

Major, Corps of Engineers,
 Chief, Operation Division.

County: Dickenson
VDMR Well No. 1822

Well: Skeet Rock Dam Site, hole 2

Farm:

Driller: Adams and Henry (U.S. Corps of Engr., contractor)

Location: Haysi quadrangle - approximate UTM, 379350 m. E and 4119870 m. N; about 2.5 miles southeast of Skeetrock and 4.5 miles northeast of Haysi; also just east of the mouth of Lower Twin Branch along the Pound River.

no space →

Elevation: 1281.60 feet

Total depth: 82.00 feet

Started drilling: 12/10/38

Completed drilling: 12/19/38

Sample description by: R.S. Good, Virginia Division of Mineral Resources, 2/28/67.

References: US Engineers Office, ^{Huntington, W.Va.} Report of Core Boring, 12/19/38, and map of proposed Skeetrock dam site, preliminary site survey.

GEOLOGIC SUMMARY

| Depth (feet) | Thickness (feet) | Formation (and remarks) |
|--------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0 - 20.5 | 20.5 | Overburden. |
| 20.5 - 24.6 | 4.1 | No core. |
| 24.6 - 82.0 | 57.4 | Norton Formation: composed of sandstones and siltstones that contain some carbonaceous laminae and partings. A mudstone occurs between 32.1' and 36.7'. |

Site, Hole 2

Well No. : Skeet Rock Dam, ~~Pound River~~ County : Dickenson
~~Hole No. 2~~ VDMR Well No. : 1822

Farm : John T. Flannagan Dam

Driller : U.S. Corps of Engineers (Adams and Henry)

Inclination : vertical

Elevation : 1281.6

Total Depth : 82.0

Date Started : 12/10/38

Date Completed : 12/19/38

Sample Description : R.S. Good February 28, 1967

GEOLOGIC LOG

| Depth (feet) | Thickness (feet) | Description |
|--------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.0 - 20.5 | 20.5 | Overburden |
| 20.5 - 24.6 | 4.1 | No test core |
| 24.6 - 31.1 | 6.5 | Siltstone : dark gray, fissile, with finely disseminated ^{fine-grained} pyrite (up to ^{up to} 2%). not visible without magnification |
| 31.1 - 32.1 | 1.0 | Siltstone : black, pyrite (up to ^{up to} 2%), with traces of white, powdery jarosite. |

use percent instead of %

| | | |
|-----------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 32.1-32.5 | 0.4 | Mudstone: dark gray, with ^{some minor} little or no fissility |
| 32.5-36.7 | 4.2 | Mudstone: gray, with ^{some minor} little or no fissility. |
| 36.7-41.6 | 4.9 | Sandstone: gray, fine grained, massive slightly micaceous, subgraywacke grading into harder more quartzitic subgraywacke, thin beds subangular quartz, feldspar, illite, and chlorite. (70-80%) |
| 41.6-48.9 | 7.3 | Sandstone: gray, slightly micaceous, with dark gray to black, ^{sinuous} silty and carbonaceous laminae, ^{some of} which are occasionally crossbedded. Coaly detritus occurs as thin (< 1mm) discontinuous, subparallel partings conformable to the bedding. |
| 48.9-54.3 | 5.4 | Siltstone: dark gray to black, thinly laminated, with ^{fractures} micro faulting , carbonaceous slickensides ^{along} a larger ^{fracture} fault surface. |
| 54.3-57.4 | 3.1 | Sandstone: light gray, massive subgraywacke with dark gray, silty, micaceous partings. Same as 36.7-41.6 |

3,

VDMR 1922

| | | |
|-----------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 57.4-65.6 | 8.2 | Siltstone: dark gray to black, fissile, micaceous. |
| 65.6-66.0 | 0.4 | ^{no} lost core. |
| 66.0-67.0 | 1.0 | Siltstone: black, fissile. |
| 67.0-76.1 | 9.1 | Sandstone inter ^{layered} bedded with siltstone: light gray subgraywacke and dark gray carbonaceous siltstone ^{with} varved irregular undulatory laminae. |
| 76.1-77.0 | 0.9 | Siltstone: black, fissile, slightly micaceous. |
| 77.0-82.0 | 5.0 | Sandstone: light gray subgraywacke with lots of thin ^{about 1 mm thick.} detrital carbonaceous laminae, same as 36.7-41.6' |